

CURRENT AFFAIRS

For Integrated Preparation of CSE Prelims + Mains + Interview



Special Feature

OCTOBER
Monthly MCQs

from



INCLUDES

- Important Summits in News
- Important Days in October
- Important Terms in News
- Obituaries in News
- Awards and Prizes

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- Asean-India Summit
- State of Prisons in India
- Indus Valley Civilisation
- Abhed: Bullet Proof Jacket
- 23rd Meeting of SCO Council
- Strengthening Pocso Act, 2012
- International Abhidhamma Divas
- The Fifth Global Standards Symposium

- Ratan Naval Tata
- Jal Hi Amrit Scheme
- Asia Power Index 2024
- Venus Orbiter Mission
- Kaimur Wildlife Sanctuary
- National Sports Policy (NSP), 2024
- Human-Complementary Technology
- Annual Survey of Industries 2022-23

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PROHIBITION OF CHILD MARRIAGE ACT (PCMA), 2006

Why in News: Supreme Court issued guidelines for effective implementation of Prohibition of Child Marriage Act (PCMA), 2006, declaring that child marriage robs children of their fundamental right to choose their own life partner.

Key Details

- The apex court stressed that child marriage not only violates the autonomy of children but also undermines their overall well-being and future prospects.
- The apex court emphasized the need for a prevention-prosecution approach, while adopting a community-driven strategy to combat child marriage across the country.
- It underscored the importance of collaboration among stakeholders, including government institutions, religious organizations, and civil society, to ensure that the law is implemented in both “letter and spirit.”

Guidelines for Implementation

- **Need for Awareness Generation:** Among the key directives, the Supreme Court has called for schools,

religious institutions, and Panchayats to be centers of awareness generation, aimed at educating communities about the legal and social consequences of child marriage.

- **Target High frequency areas:** In regions where child marriage persists, educational curricula should include information about its prevention and the rights of children.
- **Capacity building:** Training and capacity building of law enforcement officers is essential, and community-driven approaches are imperative.
- **Judicial Measures:** Empowering Magistrates to take Suo Moto Action and Issue Preventive Injunctions.
- **Fast Track Courts:** Exploration of Special Fast-Track Courts for Child Marriage cases.
- **Other measures:** Adoption of the Child Marriage Free Village Initiative, in line of “Open Defecation Free Village” model.
- Establishing a technology-driven monitoring system to track daily attendance for school-going girls up to the 12th grade.

History of Child Marriage in India



IMPLEMENTING REFORM

▶ The Child Marriage Restraint Act (CMRA) was passed in 1929

▶ Child marriages in Andhra Pradesh have come down to 29% from 33% in 2015-16

▶ It was later amended in 1978

▶ It set the minimum legal age of marriage to 18 years for girls and 21 years for boys

▶ About 13% of girls in the 15-19 age group start child bearing

▶ The Union Government later enacted the Prohibition of Child Marriage Act, 2006 (PCMA)

▶ The PCMA declares solemnisation of child marriages as a cognisable and non-bailable offence

The legal age for marriage remained the same even as per the now Act- 18 years for girls and 21 for boys

Even nearly a century after the first Act, child marriages are still rampant

As per NFHS-5, nearly 29% of women aged 20-24 years get married before attaining the legal minimum age

PRELIMS SPECIAL**About The Prohibition of Child Marriage Act 2006**

- The act came into force on 1 November 2007 in India.
- It forbids child marriages, and protects and provides assistance to the victims of child marriages

Objective

- The object of the Act is to prohibit solemnization of child marriage and connected and incidental matters.
- To ensure that child marriage is eradicated from within the society, the Government of India enacted Prevention of Child Marriage Act 2006 by replacing the earlier legislation of Child Marriage Restraint Act 1929.
- This new Act is armed with enabling provisions to prohibit for child marriage, protect and provide relief to victim and enhance punishment for those who abet, promote or solemnize such marriage.
- This Act also calls appointment of Child Marriage Prohibition Officer for whole or a part of a State by the State government.

STATE OF PRISONS IN INDIA

Why in News: The Supreme Court on Thursday struck down numerous rules from state prison manuals saying these rules “reinforce caste differences” among prisoners and violate their fundamental rights

Key Details

- The Supreme Court on Thursday declared that caste-based discrimination of prisoners, segregation of their work according to caste hierarchy, and the treatment of inmates from the denotified tribes as “habitual offenders” within prison walls across India are oppressive to fundamental human dignity and personality.
- It ordered the deletion of the ‘caste column’ and any references to caste in registers of undertrials and convicts maintained in prisons. The court underscored that members of denotified tribes must not be subjected to arbitrary arrest.
- The court directed the revision of prison manuals within three months.

How do the prison manuals reinforce caste and colonial stereotypes?

- **Designation as Criminal Tribes:** The Criminal Tribes Act of 1871 allowed the British Raj to declare any community as a “criminal tribe” if they were deemed “addicted to systematic commission of non-bailable offences”.
- **Aggregates Discrimination:** With this declaration, these tribes were forced to settle in designated locations, subjected to constant checks and the threat of arrest without a warrant, and more draconian restrictions “based on a stereotype which considered several marginalized communities as born criminals”.

- **Discrimination continued even after independence:** After multiple amendments and iterations, the Act was repealed in 1952 and the former ‘criminal tribes’ became known as ‘denotified tribes’. However, according to the apex court, “The manuals/ rules also reinforce stereotypes against denotified tribes” through the classification between habitual and non-habitual criminals.

Fundamental rights of prisoners

- **Right to Equality (Article 14):** Segregating prisoners on the basis of caste would reinforce caste differences or animosity that ought to be prevented at the first place and that such classification “deprives some of them of equal opportunity to be assessed for their correctional needs, and consequently, opportunity to reform.”
- **Right Against Discrimination (Article 15):** The court held that the manuals both directly and indirectly discriminate against marginalised communities. By assigning cleaning and sweeping work to the marginalized castes, while allowing the high castes to do cooking, the Manuals directly discriminate.
- **Abolition of Untouchability (Article 17):** The court reproduced a series of rules and held that they were representative of untouchability being practised in prisons. **For example:** In Uttar Pradesh, a convict “shall not be called upon to perform duties of a degrading or menial character unless he belongs to a class or community accustomed to perform such duties”.
- **Right to Life with Dignity (Article 21):** The rules in prison manuals restrict the reformation of prisoners from marginalised communities and deprive(s) prisoners from marginalized groups of a sense of dignity and the expectation that they should be treated equally, violating this right.
- **Prohibition of Forced Labour (Article 23):** The court held that Imposing labour or work, which is considered impure or low-grade, upon the members of marginalized communities amounts to “forced labour” under Article 23.

Concerns related to Prisons in India

- **Prison violence–** The worst form of Prison violence was witnessed in *Khatri v. State of Bihar* where the police had blinded 80 suspected criminals by puncturing their eyes by needles and dousing them by acid. In fact in the case *Sunil Batra v. Delhi Administration* that the court had already issued a writ directing the authorities that the prisoners shall not be subjected to physical mishandling by jail officials and they should be given adequate medical and health facilities.
- **Criminalizing effect of a prison–** With hardened criminals being around and in the absence of scientific classification methods to separate them from others, contamination of first time, circumstantial and young offenders into full-fledged criminals occurs very frequently.
- **Health problems–** Most of the prisoners found in prisons come from socio-economically disadvantaged sections of the society where disease, malnutrition and absence of medical services

are prevalent. When such people are cramped in with each other in unhealthy conditions, infectious and communicable diseases spread easily.

- **Mentally ill prisoners**– Though miniscule, mentally ill prisoners constitute another percentage of population, which is largely ignored and forgotten by both the outside world and those inside. But given the nature of the illness and prevailing social attitudes, they form the most hapless victims of human rights violations.
- **Drug abuse**– After Murder, Attempt to murder and other serious anti-personal offences, people booked under anti-drug laws constitute a substantial percentage of the prison population.
- **Effect on the families of prisoners**– Those imprisoned are unable to look after their families. In the absence of the main bread winner, the family is many a time forced into destitution with children going astray. This combined with the social stigmatization that they face, leads to circumstances propelling children towards delinquency and exploitation by others. It is an inexorable circle.

Jail Reforms and Rehabilitation

- **Recreational Facilities:** Recreational facilities creates humane environment and makes them feel human. .
- **Educational Facilities:** Both adult and formal education arrangements can be made for prisoners.
- **Sports Activities:** Sport activities form an integral part all management. Inter Jail sport competitions are organized in different games which are christened as Tihar Olympic.
- **Yoga and Meditation:** For cleansing and disciplining mind, Yoga and meditation classes were started in a big way with the help of various voluntary organisations.
- **Legal Aid Activities:** A legal Aid Cell is functioning in each Jail which is being visited by the advocates deployed by Delhi State Legal Service Authority as well as Delhi High Court Legal Service Committee.

Way Forward

- The days are gone when prisons were dungeons where prisoners were lodged to pass their days in dark cells. The prisons are no more the institutions designed to achieve only the retributive and deterrent aspects of punishment.
- Prisons are now the places, where the inmates are lodged not as forgotten or forsaking members of the society but as human beings who have to go out into their surroundings as well behaving as reformed persons.
- For a prisoner, the imprisonment itself is a punishment and thus, prisons are expected to be places of rehabilitation, not places where extra punishment is added resulting into the violation of their human rights.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. How does prison reforms still remain a long overdue project in India? What are the rights of prisoners in India? Mention some of the pending reforms for prisoners in India. [15 marks] [250 words]

REPORT ON ATROCITIES AGAINST SCHEDULED CASTES AND SCHEDULED TRIBES

Why in News: Recently, the Union Government has released a report under the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989.

Key Findings

- The report published by the Ministry of Social Justice and Empowerment identified districts that are prone to atrocities against SCs and STs highlighting the number of cases registered, investigated, and prosecuted across different states in India.
 - One of the most concerning trends highlighted in the report is the declining conviction rate for cases under the Act. In 2022, the conviction rate dropped to 32.4 per cent from 39.2 per cent in 2020.
 - Most of atrocities against SCs in 2022 were reported from 13 states, with Uttar Pradesh, Rajasthan and Madhya Pradesh recording the highest number of such crimes.
 - ◆ The report emphasises the need for targeted interventions in these districts to curb the incidence of caste-based violence and ensure stronger protection for vulnerable communities.
 - Moreover, the report pointed out the inadequate number of special courts set up to handle cases under the law. Of 498 districts in 14 states, only 194 had established special courts to expedite trials in these cases.
 - ◆ Special police stations for registration of complaints of offences against SCs and STs have been set up by five states- Bihar, Chhattisgarh, Jharkhand, Kerala and Madhya Pradesh.
- Among the SC-related cases, 60.38 per cent led to charge sheets being filed while 14.78 per cent were concluded with final reports due to reasons such as false claims or lack of evidence.
- Special police stations for registration of complaints of offences against SCs and STs have been set up by five states- Bihar, Chhattisgarh, Jharkhand, Kerala and Madhya Pradesh.
- **Note:** The Act has been amended several times to add new offenses and enhance punishments.
 - **For example,** the 2015 amendment added new

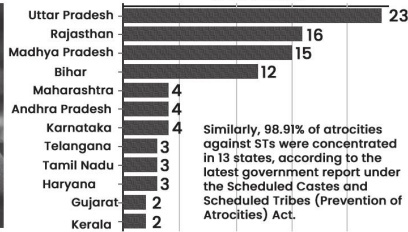
offenses and rephrased existing ones. The 2022 amendment added new offenses, such as tonsuring the head or mustache, which are derogatory to the dignity of SCs and STs.

Atrocities on Dalits, tribal people

The chart shows the States accounting for 97.7% of total cases of atrocities against members of Scheduled Castes during the year 2022.



Source: Ministry of Social Justice and Empowerment



About The Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989

- The Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989 (hereinafter referred as 'PoA' Act) came into force with effect from 30.01.1990.
- Main provisions** of the PoA Act are as under:-
 - Defines offences of atrocities and prescribes punishment therefor, (Section 3).
 - Punishment for wilful neglect of duties by non-SC/ST public servants (Section 4).
 - Designating for each District a Court of Session as a Special Court for speedy trial of offences under the Act (Section 14).
 - Powers of Special Court to inter- alia, extern persons likely to commit an offence in a Scheduled or Tribal area (Section 10).
 - Appointment of Public Prosecutors/Special Public Prosecutors for conducting cases in special courts (Section 15).
 - Preventive action to be taken by the law and order machinery (Section 17). Measures to be taken by State Governments for effective implementation of the Act, including:-
 - Adequate facilities including legal aid, to the persons subjected to atrocities to enable them to avail themselves of justice;
 - Economic and social rehabilitation of victims of the atrocities;
 - Appointment of officers for initiating or exercising supervision over prosecution for contravention of the provisions of the Act; and
 - Setting up of Committees at appropriate levels to assist the Government in implementation of the Act;
 - Delineation of "Identified Areas" (commonly known as "Atrocity Prone Areas") where members of SC/ST are vulnerable to being subjected to atrocities and adoption of necessary measures to ensure their safety. (Section 21 (2)).

Facts

- The Supreme Court recently reiterated that "insults or intimidations" of a member of Scheduled Castes (SC) or Scheduled Tribes (ST) are not an offence under the SC and ST (Prevention of Atrocities) Act, 1989, unless it is on the ground that the victim belongs to an SC or ST.
- Note:** Section 18 of the Act, 1989, stipulates that in any case which involves the arrest of any person on the accusation of having committed an offence under the Act, the benefit of anticipatory bail under Section 438 of CrPC would not be available to the accused.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q1. What does Section 14 of Scheduled Castes and Scheduled Tribes (Prevention Of Atrocities) Act, 1989 provide for?
- Definition of offence of atrocities and prescribes punishment.
 - Punishment for wilful neglect of duties by non-SC/ST public servants.
 - Designating of Special Court for speedy trial of offences under the Act.
 - None of the above.

(c) :Answer

Descriptive Question

- Q1. Explain the key provisions of the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989. How do these provisions aim to protect the rights of marginalized communities? [10 marks] [150 words]

NATIONAL COMMISSION FOR BACKWARD CLASSES

Why in News: National Commission for Backward Classes (NCBC) has recently recommended the inclusion of seven communities of Maharashtra in the Central List of Other Backward Classes.

Key Details

- The communities cleared by the NCBC for addition to the Central OBC list were already categorised as OBCs in Maharashtra's State list and have been eligible for benefits under State schemes and reservation in State appointments.
- These communities are
 - Lodh, Lodha, Lodhi
 - Badgujar
 - Suryavanshi Gujar

- Leve Gujar, Reve Gujar, Reva Gujar
- Dangari
- Bhojar, Pawar
- Kapewar, Munnar Kapewar, Munnar Kapu, Telanga, Telangi, Pentarreddy, Bukekari
- Some of these are new entries to the Central list while others were already part of the list as synonyms and are now being added as their own entries.
- In their proposals, state governments have to back recommendations for addition of castes with data on the social, economical and educational backwardness of the communities.
- The commission then vets the data and recommends it to the Centre for their approval. Subsequently, the Centre then notifies the recommended list of castes.

• **Composition:** The Commission consists of a Chairperson, Vice-Chairperson and three other Members in the rank & pay of Secretary to the Govt of India and their condition of service and tenure of office has been notified vide Ministry of Social Justice and Empowerment Notification dated 23.08.2018.

ARMED FORCES (SPECIAL POWERS) ACT (AFSPA)

Why in News: The Centre has recently extended the Armed Forces (Special Powers) Act (AFSPA) in eight districts in Nagaland, three in Arunachal Pradesh and four districts of Assam for six months to maintain internal law and order.

Key Details

- The AFSPA gives armed forces operating in disturbed areas sweeping powers to search, arrest and to open fire if they deem it necessary for the “**maintenance of public order**”.
- The districts in Nagaland where the AFSPA was reimposed are Dimapur, Niuland, Chumoukedima, Mon, Kiphire, Noklak, Phek and Peren.
- Similarly, Tirap, Changlang and Longding districts in Arunachal Pradesh and the areas falling within the jurisdiction of Namsai, Mahadevpur and Chowkham police stations in Namsai district of Arunachal Pradesh, bordering Assam declared ‘disturbed area’.
- In light of recent disturbances in Bangladesh, AFSPA has been extended in Tinsukia, Dibrugarh, Charaideo, and Sivasagar districts of Assam for six months to maintain internal law and order.

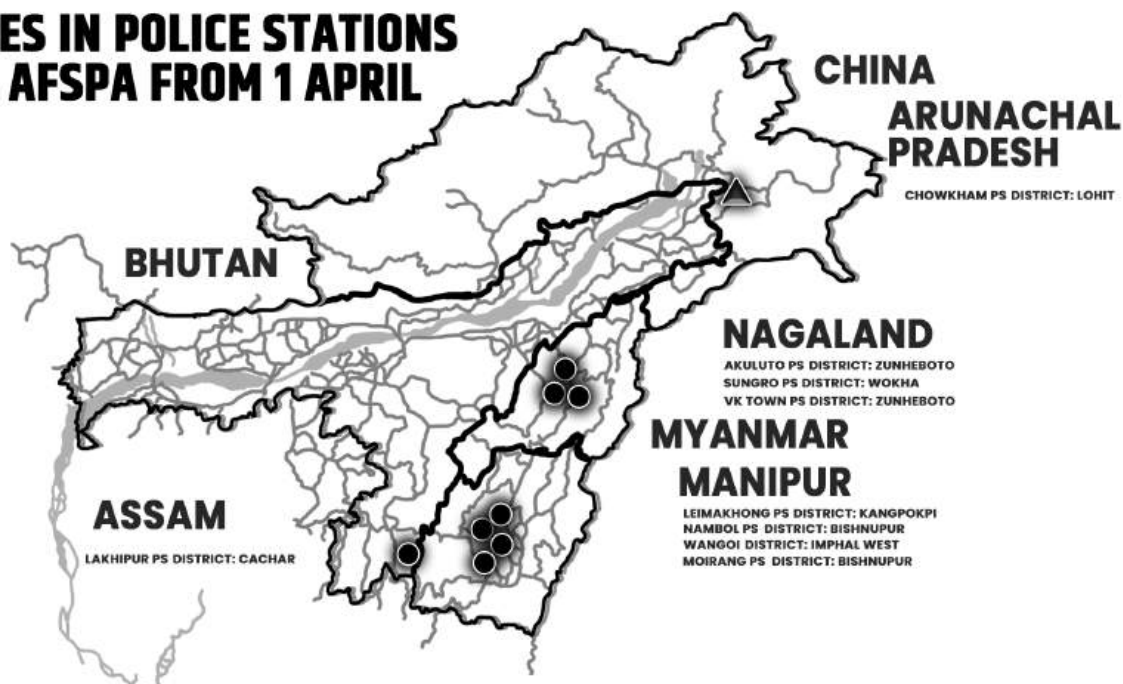
PRELIMS SPECIAL

National Commission for Backward Classes (NCBC)

- National Commission for Backward Classes (NCBC) was initially constituted by the Central Govt by the National Commission for Backward Classes Act, 1993 (27 of 1993) dated 2.4.1993 and so far the Commission had been reconstituted 7 times up to 2016.
- The National Commission for Backward Classes Act, 1993 (27 of 1993) has been repealed through the National Commission for Backward Classes (Repeal) Act, 2018 dated 14.08.2018.
- **Constitutional Status:** The present Commission (8th) has been accorded Constitutional Status and constituted through “**The Constitution (One Hundred and Second Amendment) Act, 2018**” Act dated 11.8.2018, whereby Article 338B has been inserted, forming a Commission for the socially and educationally backward classes to be known as National Commission for Backward Classes.

CHANGES IN POLICE STATIONS UNDER AFSPA FROM 1 APRIL 2023

▲ ● | INTERNATIONAL BORDERS
 ▲ ● | PLACES WHERE AFSPA HAS BEEN REMOVED
 ▲ ● | NEWLY LISTED UNDER AFSPA



Note: India shares a 1,643-km-long border with Myanmar in 4 northeastern states- Arunachal (520 km), Nagaland (215 km), Manipur (398 km), and Mizoram (510 km). The kinship and ethnic ties that exist between communities on both sides of the porous border in these states makes it convenient for insurgents from northeast India to set up bases in the thick jungles of Myanmar.

PRELIMS SPECIAL

About Armed Forces (Special Powers) Act (AFSPA)

- Armed Forces (Special Powers) Act (AFSPA), 1958 is an act of the Parliament of India that grants special powers to the Indian Armed Forces to maintain public order in “disturbed areas”.
- **Section 3 of the AFSPA** allows the central government, state governors, or union territory administrators to declare an area a “disturbed area”.
 - According to the Disturbed Areas (Special Courts) Act, 1976 once declared ‘disturbed’, the area has to maintain status quo for a minimum of 3 months.
- **Section 7 of the AFSPA** offers protection to persons acting in good faith in their official capacity. The prosecution is permitted only after sanction of the central government.
- How to declare an area disturbed?

The person declaring the area must:

- Believe the area is dangerous or disturbed
- Issue a notification in the Official Gazette
- Declare the whole or part of the area to be disturbed

Special powers under AFSPA

- The AFSPA gives armed forces operating in disturbed areas sweeping powers to search, arrest and to open fire if they deem it necessary for the “maintenance of public order”.
 - If he is of opinion that it is necessary so to do for the maintenance of public order, after giving such due warning as he may consider necessary, fire upon or otherwise use force, even to the causing of death, against any person who is acting in contravention of any law or order for the time being
 - If he is of opinion that it is necessary so to do, destroy any arms dump, prepared or fortified position or shelter from which armed attacks are made or are likely to be made or are attempted to be made, or any structure used as a training camp for armed volunteers or utilised as a hide-out by armed gangs or absconders wanted for any offence;
 - Arrest, without warrant, any person who has committed a cognizable offence or against whom a reasonable suspicion exists that he has committed or is about to commit a cognizable offence and may use such force as may be necessary to effect the arrest;
 - Enter and search without warrant any premises to make any such arrest as aforesaid or to recover any person believed to be wrongfully restrained or confined or any property reasonably suspected to be stolen property or any arms, ammunition or explosive substances.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. As of now, In how many states in India has the Armed Forces (Special Power) Act (AFSPA) been applied?
- (a) Three (b) Four
(c) Five (d) Six

Answer: (b) - Arunachal Pradesh, Manipur, Nagaland, Assam

SECTION 6A OF THE CITIZENSHIP ACT

Why in News: The Supreme Court by 4:1 majority upholds the constitutional validity of Section 6A of the Citizenship Act.

Key Details

- In a 4:1 majority verdict, a Constitution Bench of the Supreme Court on Thursday (October 17, 2024) upheld the constitutionality of Section 6A of the Citizenship Act, 1955 that confers citizenship to immigrants who entered Assam between January 1, 1966, and March 25, 1971.
- The Chief Justice opined that the mere presence of diverse ethnic groups within a state does not, in itself, constitute a violation of Article 29(1) of the Constitution (protection of interests of minorities). Concurring, Justice Kant asserted that Section 6A embodies the “spirit of fraternity”.

About Section 6A of the Citizenship Act

- Section 6A is a special provision inserted into the 1955 Act in furtherance of a Memorandum of Settlement called the “Assam Accord” signed on August 15, 1985, by the then Rajiv Gandhi government with the representatives of the Assam Movement following the Indo-Pakistan War in 1971.
- Under Section 6A, foreigners who had entered Assam before January 1, 1966, and been “ordinarily resident” in the State, would have all the rights and obligations of Indian citizens.
- Those who had entered the State between January 1, 1966 and March 25, 1971, would have the same rights and obligations except that they would not be able to vote for 10 years.

Dissent Judgement

However Justice Pardiwala reached the following conclusions in his dissent:

- Section 6A fails to bring a temporal limit to its applicability.
- Section 6A shifts the sole burden of proving a person an illegal immigrant or foreigner on the State, thus counter-serving the very purpose for which the provision was enacted.

- The purpose of Section 6A was not achieved, that is, expedient detection of those who entered in the 1966-71 period, their deletion from the electoral rolls and conferment of de jure citizenship only on the expiry of 10 years.

Earlier Judgement

- In December last year, a five-judge Constitution Bench led by CJI D Y Chandrachud reserved its verdict on the validity of Section 6A after orally observing that the provision was enacted as a humanitarian measure in the wake of the 1971 Bangladesh Liberation War and was deeply interwoven in the country's history.
- Section 6A determines who is a foreigner in Assam by establishing March 24, 1971, as the cut-off date for entry—those who came to the State on or after January 1, 1966, but before March 25, 1971, were to be declared as “foreigners” and would have all the rights and obligations of Indian citizens except that they would not be able to vote for 10 years.
- If March 24, 1971, is upheld as a valid cut-off date for entry into the State, then CAA can be held to be violative of the Assam Accord since it establishes a different timeline.

PRELIMS SPECIAL

Foreigners' Tribunals (FTs)

- The FTs are quasi-judicial bodies formed through the Foreigners (Tribunals) Order of 1964 under Section 3 of the Foreigners' Act of 1946, to let local authorities in a State refer a person suspected to be a foreigner to tribunals.
- The FTs are currently exclusive to Assam as cases of “illegal immigrants” are dealt with according to the Foreigners' Act in other States.
- Each FT is headed by a member drawn from judges, advocates, and civil servants with judicial experience.
- The Ministry of Home Affairs told Parliament in 2021 that there are 300 FTs in Assam but the website of the State's Home and Political Department says that only 100 FTs are currently functioning, beginning with 11 established before the Illegal Migrants (Determination by Tribunals) Act of 1983 was scrapped in 2005.

NATIONAL SPORTS POLICY (NSP), 2024

Why in News: The Department of Sports, Ministry of Youth Affairs and Sports, is in the process of framing National Sports Policy (NSP), 2024 for the development of sports and providing a roadmap to achieve excellence in sports in the country.

About National Sports Policy (NSP), 2024

- The NSP, 2024 Framework document envisages Nation Building through the Power of Sports with focus on excellence on the global stage, sports for economic

development, sports for social development and making sport a people's movement.

- The existing NSP was issued in 2001 and it is imperative to formulate a new NSP that encompasses the latest developments in the field of Sports and presents a roadmap to address the present and future challenges.

Vision

➤ The vision of the National Sports Policy 2024 is **Sports for Nation Building – Harness the Power of Sports for Nation's Holistic Development.**

➤ This policy aims to strengthen the sporting culture and ecosystem from the grassroots to the national level, ultimately achieving excellence in sports on the global stage, leveraging sports for economic development, utilizing sports as a tool for social development, and making sports a people's movement for health and well-being.

Key Objectives

- Establish comprehensive sports programs for all participation groups, from grassroots to elite levels.
- Organize sports competitions and leagues at various levels, creating a robust competitive structure.
- Implement physical literacy initiatives to promote a culture of sports and physical activity.
- Develop a robust talent identification and development system to nurture future champions.
- Ensure equitable access to sports infrastructure across the country.
- Provide athlete-centric support systems for the holistic development of sportspersons.
- Promote sports science, medicine, and innovation to enhance performance and well-being.
- Strengthen governance and institutional frameworks in the sports sector.
- Revamp funding mechanisms to ensure sustainable development of sports.
- Foster economic growth through sports-related industries and activities.
- Promote social development and inclusion through sports.
- Establish sports as a viable career option for youth.
- Encourage mass participation in sports and fitness activities for a healthier nation.
- Develop a robust mechanism to reward and recognize champion athletes as well as retired athletes.
- Develop a framework and guidelines for educational institutions to act as feeder institutes to impart sporting culture.

Key Pillars of the Policy

- Nation's Excellence on the Global Stage
- Sports for Economic Development

- Sports for Social Development
- Sports – A People’s Movement
- Major Focus Areas to Harmonize NSP 2024 with NEP 2020
- **Strategic Framework for Achieving the Objectives of NSP 2024 - Key Pillars of the Framework:**
 - Strong Professional Sports Governance, Implementation & Monitoring
 - Strong Sports Education, Research & Innovation Framework
 - Technological Intervention
 - National Framework & Regulatory Bodies
 - Private Sector Engagement

THE DRAFT NATIONAL SPORTS GOVERNANCE BILL, 2024

Why in News: Ministry of Youth Affairs and Sports has put in public domain the Draft National Sports Governance Bill, 2024 for inviting comments/suggestions of general public and the stakeholders, as part of pre-legislative consultation process.

Aim of Bill

- Provide for the development and promotion of sports, welfare measures for sportspersons, ethical practices in sports through good governance practices;
- Establish institutional capacity and prudential standards for the governance of sports federations that are based on basic universal principles of good governance, ethics and fair play of the Olympic and sports movement, the Olympic Charter, the Paralympic Charter, international best practices and established legal standards;
- Establish measures for the resolution of sports grievances and sports disputes in a unified, equitable and effective manner.

Salient Features of the Bill

- **Establishment of Sports Regulatory Board of India**
 - It will act as central regulatory authority responsible for granting recognition to National Sports Federations (NSFs) and ensuring compliance with governance, financial, and ethical standards.
 - It will have flexibility and autonomy in regulating governance of sports in the country. No fix formula is provided in how NSF will be recognised.
- **Structure of IOA/PCI/NSF**
 - The bill prescribes a governance structure in alignment with the international policies and keeping in view the national interest.
 - It restricts the sizes of the EC to 15 members and make the leadership positions open to the citizens with usual terms and conditions.

- NSFs have been encouraged to put a salaried professional full time management in place headed by a CEO.
- NSFs to ensure that all constituent units follow good governance practices as prescribed.
- The recognised bodies will be governed on the lines of Olympic Charter, Paralympic Charter and Regulations established by concerned International Federations.
- **Mandatory Ethical and Governance Standards**
 - The bill introduces mandatory provisions for ethical governance in sports federations, with the establishment of Ethics Commissions and Dispute Resolution Commissions at the NOC, NPC, and NSF levels.
 - These measures ensure adherence to integrity, transparency, and fairness in administration and decision-making processes.
 - The bill ensures the governance of sports federations, aligning with the Olympic and Paralympic charters and international best practices, creating a globally acceptable governance framework critical for hosting international events like the Olympics.
- **Athletes Commissions**
 - This bill mandates the formation of Athletes Commissions in NOC, NPC, and all NSFs, ensuring that athletes are represented and have a platform to raise concerns, participate in decision-making, and contribute to policy formulation.
 - This athlete-centred approach enhances India’s standing in international forums and makes the country more athlete-friendly for global events. Provision of additional funding to the Athlete Commissions by the Government.
- **Athlete Representation in Executive Committees**
 - The bill ensures that 10% of the voting members in the General Body of the NOC, NPC, and NSFs are sportspersons of outstanding merit (SOMs) who are elected by the Athletes Commission.
 - At least two of these SOM representatives (one male and one female) must serve on the Executive Committee.
- **Safe Sports Policy**
 - A “**Safe Sport Policy**” is introduced, focusing on the protection of athletes, especially minors and women, from harassment and abuse and strict adherence to the Protection of Women from Sexual Harassment Act (POSH) Act, 2013.
 - This is a critical step toward creating a safe environment for sportspersons.
- **National Sports Promotion Organisations (NSPOs)**
 - Bill establishes guidelines for the recognition and regulation of NSPOs that promote sports governance, athlete support, and development.

- This strengthens institutional capacities and offers an expanded role for NGOs and private organizations.
- **Appellate Sports Tribuna:**
 - A dedicated Appellate Sports Tribunal will handle all sports-related disputes in India, reducing reliance on civil courts and ensuring faster resolution of grievances.
 - It will reduce multiplicity of court cases and will have a single window system and will provide faster, cheaper and easier resolution of disputes.
- **Ad-hoc Normalisation Committees:**
 - In case of non-compliance or suspension of sports federations, the Bill allows the Sports Regulatory Board to form ad-hoc normalization committees to administer these bodies temporarily in consultation with international federations, ensuring continuity in sports governance.
- **Strict Compliance with Global Anti-Doping and Ethical Standards:**
 - The Bill underscores the importance of ethical behaviour in sports, with anti-doping measures, stringent compliance with international rules, and strict penalties for violations, positioning India as a clean and fair host for the Olympics.
 - All the bodies have to formulate their Code of Ethics in accordance with the IOC Code of Ethics and Law of Land.
- **Public Accountability and Transparency:**
 - By subjecting the NOC, NPC, and NSFs to the Right to Information (RTI) Act (with specific exclusions for performance and medical data), the Bill enhances transparency, ensuring sports governance is accountable to the public.
- **Promotion of Inclusivity and Gender Representation:**
 - The Bill mandates gender representation in Executive Committees and other governing bodies, ensuring that at least 30% of the members are female, which aligns with global trends in gender equality and inclusivity in sports.
- **Sports Election Panel:**
 - IOA/PCI/NSFs to engage electoral officers for conduct of **free and fair elections from an Sports Election Panel.**
 - The Panel will comprise of officials who have had extensive experience in conduct of the elections in the country.
- **Restriction on use of national name and insignia:**
 - Only recognised sports bodies will be allowed the use of Indian Flag or national names.
 - Contravention will lead to fine and punishment which can go upto one year or Rs 10 lakhs or both.

SUPREME COURT ON THE APPOINTMENT OF CHIEFS OF POLICE

Why in News: Supreme Court has recently issued notices to eight states and the Centre on a petition seeking the appointment of regular chiefs of police in these states.

Key Details

- The states to which the notices were issued are Uttar Pradesh, Uttarakhand, Andhra Pradesh, Telangana, Odisha, West Bengal, Punjab, and Jharkhand.
- All these states, barring Odisha, currently have temporary chiefs of police designated as acting Director General of Police (DGP).
 - This is in violation of the Supreme Court guidelines in the 2006 Prakash Singh case.
- There is an increasing trend of state governments not appointing regular DGPs despite eligible officers being available.
- These appointments are typically made by handing over the additional charge of the police chief's post to a DG rank officer in the state holding some other responsibility.
- This trend is in violation of not only the Prakash Singh judgment but also various subsequent SC orders.
- Supreme Court has clearly said no temporary or ad hoc appointments of police chiefs must be made, barring exceptional circumstances.
- UPSC guidelines say states must send a list of eligible officers, with at least three senior-most officers, to the Commission six months before the retirement of the incumbent DGP.

Directives of Supreme Court in 2006 judgement of Prakash Singh vs Union of India

- **Constitute a State Security Commission (SSC) to:**
 - Ensure that the state government does not exercise unwarranted influence or pressure on the police.
 - Lay down broad policy guideline.
 - Evaluate the performance of the state police.
- Ensure that the DGP is appointed through merit based transparent process and secure a minimum tenure of two years.
- Ensure that other police officers on operational duties (including Superintendents of Police in-charge of a district and Station House Officers in-charge of a police station) are also provided a minimum tenure of two years.
- Separate the investigation and law and order functions of the police.
- Set up a Police Establishment Board (PEB) to decide transfers, postings, promotions and other service related matters of police officers of and below the rank of Deputy Superintendent of Police and make recommendations

on postings and transfers above the rank of Deputy Superintendent of Police.

- Set up a Police Complaints Authority (PCA) at state level to inquire into public complaints against police officers of and above the rank of Deputy Superintendent of Police in cases of serious misconduct, including custodial death, grievous hurt, or rape in police custody and at district levels to inquire into public complaints against the police personnel below the rank of Deputy Superintendent of Police in cases of serious misconduct .
- Set up a National Security Commission (NSC) at the union level to prepare a panel for selection and placement of Chiefs of the Central Police Organisations (CPO) with a minimum tenure of two years.

ASIAN ORGANIZATION OF SUPREME AUDIT INSTITUTIONS (ASOSAI)

Why in News: The 16th Assembly of the Asian Organization of Supreme Audit Institutions (ASOSAI) was inaugurated by the President of India.

Key Details

- The President highlighted the role of independent Supreme Audit Institutions is to see that public resources are managed efficiently, effectively and with the utmost integrity
- The Assembly was witnessed 200 delegates from 42 countries discussing public audit, governance, and accountability.
- Hosted by the Comptroller and Auditor General (CAG) of India, the assembly saw the adoption of the New Delhi Declaration, a roadmap that reinforces ASOSAI members' commitment to equality, transparency, and innovation.
- The meeting approved various strategic and financial reports, including the mid-term report on ASOSAI's Strategic Plan 2022-2027, report on the results of the Bangkok Declaration 2021, and introduced new collaborations, research projects, and regulatory reforms.

PRELIMS SPECIAL

- **The Bangkok Declaration 2021** is a declaration that encourages public sector auditors to adapt and thrive in the post-pandemic era. The declaration was prepared during SAI Thailand's ASOSAI Chairmanship from 2021 to 2024.
- **About Comptroller and Auditor General of India (CAG)**
 - The CAG is the supreme audit institution of India, established under Article 148 of the Constitution of India.
 - They are empowered to audit all receipts and expenditure of the Government of India and the State Governments, including those of autonomous bodies and corporations substantially financed by the government.

- The CAG is also the statutory auditor of Government-owned corporations and conducts supplementary audit of government companies in which the government has an equity share of at least 51 percent or subsidiary companies of existing government companies.
- The CAG is also the statutory auditor of the Lokpal.
- The reports of the CAG are laid before the Parliament/ Legislatures and are taken up for discussion by the Public Accounts Committees (PACs) and Committees on Public Undertakings (COPUs), which are special committees in the Parliament of India and the state legislatures.
- The CAG is also the head of the Indian Audit and Accounts Department, the affairs of which are managed by officers of Indian Audit and Accounts Service, and has 43,576 employees across the country.
- The CAG is ranked 9th and enjoys the same status as a sitting judge of the Supreme Court of India in order of precedence.
- The former Lt. Governor of UT of Jammu Kashmir G. C. Murmu is the current CAG of India. He assumed office on 8 August 2020, and is the 14th CAG of India.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding 16th Assembly of Asian Organization of Supreme Audit Institutions (ASOSAI):

1. Comptroller and Auditor General (CAG) of India assumed chairmanship of the Asian Organisation of Supreme Audit Institutions (ASOSAI) for 2024-25.
2. It drafted Bangkok declaration to encourage public sector auditors to adapt and thrive in the post-pandemic era.
3. The assembly was held in Thailand.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

(b) and (c) only

WOMEN REPRESENTATION IN LAW MAKING

Why in News: The Supreme Court observed the discriminatory attitudes that persist against women in public offices in India.

Supreme Court Observations and Orders

- Supreme Court lamented that women face systemic biases within administrative structures despite constitutional mandates and legislative efforts.
- The apex Court observed that gender barriers reflect entrenched discriminatory attitudes and impede progress toward a more inclusive political landscape.
 - Further, the court stated that the removal of an elected representative, especially a woman from a rural area, should not be taken lightly, as it disregards the efforts these women make to secure and retain such positions.

Women Representatives in India

- India as a sovereign republic provided the right to vote for all its women right from the first general elections in 1952.
- While the right to vote was provided to all women since the commencement of the Constitution, the representation of women in the Lok Sabha and State legislative assemblies has been far from satisfactory.
- **In Lok Sabha:** The percentage of women MPs in the Lok Sabha had been very low between 5% and 10% till 2004. It rose marginally to 12% in 2014 and currently stands at 14% in the 18th Lok Sabha.
- **In State Legislative Assemblies:** The representation in State Legislative Assemblies is even poorer with the national average being around 9%.
- **Note:** The 73rd and 74th amendments of the Constitution in 1992/1993, provided for one-third reservation for women in panchayats and municipalities.

106th Constitutional Amendment

- Indian Parliament through the 106th constitutional amendment, in September 2023, provided for one-third reservation of seats for women in the Lok Sabha and State legislative assemblies.
- This would ensure a fair representation of women in legislatures that would increase gender sensitivity in parliamentary processes and legislation.
- This reservation shall come into effect based on the delimitation exercise after the relevant figures of the first Census conducted after the commencement of this act is published.

Elected Women Representatives in Local Rural Governments in India

- India's 73rd Constitutional Amendment Act, which came into effect in 1993, reserved one-third of electoral seats

for women in local governance structures in rural areas, known as Panchayati Raj Institutions (PRIs). Thirty years since its enactment, India, a diverse and multilayered federal polity, has over 1.45 million women in local decision-making roles.

Evolution of Women's Representation in Panchayati Raj Institutions:

- **Directive Principles:** The idea of promoting local self-government, as enshrined in Article 40, was positioned within the non-enforceable Directive Principles of State Policy of the Indian Constitution without any explicit mention of women's representation.
- **Balwant Rai Mehta Committee:** The Balwant Rai Mehta Committee (1957), appointed to examine the working of India's community development programme to address issues of decentralisation, recommended that the 20-member panchayat samiti should co-opt or nominate two women with an interest in work among women and children.
 - ◆ The Maharashtra Zilla Parishad and Panchayat Samiti Act of 1961 followed this suggestion, allowing for one or two women to be nominated to each of the three PRI bodies if no woman candidate was elected.
- **Ashok Mehta Committee:** In 1978, the Committee on Panchayati Raj Institutions recommended reserving two seats for women in each panchayat.
- National Perspective Plan for Women (1988) recommended that 30 percent of the executive-head positions from the village to the district levels should be reserved for women.
- Eventually, in 1993, Panchayati Raj was formally incorporated into the Constitution through the 73rd Constitutional Amendment (for panchayats at the village, block, and district levels) and the 74th Constitutional Amendment (for municipalities) Acts, with both providing for the reservation of one-third of elected seats for women.
 - ◆ After Maharashtra adopted the recommendations of the Balwant Rai Committee in 1961, Karnataka initiated (in 1985) a 25% reservation for women in the mandal praja parishads (local people's council) along with an additional reservation for women from the scheduled castes and scheduled tribes.
 - ◆ In 1986, Andhra Pradesh established a reservation of between 22% and 25% for gram panchayats, with the provision of co-opting two women in the panchayat samiti in addition to the elected women members.

State-Level Dynamics

Education:

Women representatives are found to be generally younger than their male counterparts, but also less educated. Education has a direct impact on their performance in office. Those who are illiterate or educated below the primary school level encounter challenges in performing well while in office.

Marital Status:

Women representatives are predominantly married. This affects the time they can give for work compared to male representatives.

Experience:

Most female representatives are first-time candidates with no training or experience, unlike their male counterparts, who are likely to have a prior association with some form of local politics.

Dependence:

Women are likely to rely on family members and neighbours to access information and conduct their work, compared to men, who are more likely to source information from panchayat office bearers, government officials, and media.

Re-election:

Most women representatives do not get re-elected. This is because their seats are de-reserved in the next election, and many women are hesitant to contest from an unreserved seat.

Socio-Political Status:

It is assumed that women from the rural elite enter politics through family connections. However, many Elected Women Representatives also got elected from families without any land or with small landholdings and no family connections. Many of them function independently of male family members.

Observed Major Trends

Reservation for Women

Presently, 20 states—Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttarakhand, and West Bengal—have expanded the reservation for women in their PRIs to 50%.

Political Representation

Women In some states, like Karnataka, women have even surpassed this threshold, with more than 50% representation in PRIs, indicating that women are now succeeding in electoral wards that were not specifically reserved for them. High engagement by women leaders in panchayat-related activities was noted in Kerala.

All-Women Panchayats

Some states have seen the emergence of all-women panchayats, such as the Manje Rai Panchayat at Indapur Tehsil and Ralegaon Shindhi in Ahmednagar district in Maharashtra, and the Kultikri Gram Panchayat under the Jhargram subdivision in West Bengal.

Mahila Gram Sabha

States like Karnataka, Odisha, Madhya Pradesh, Himachal Pradesh, and Rajasthan have introduced mahila (women) gram sabhas to strengthen women's participation.

Mahila Sabha

The concept of mahila gram sabhas originated in Maharashtra when self-help groups (SHGs) and female members of the community called a 'mahila sabha' (women's meeting) against alcoholism.

Skilled Leadership

Several states have also initiated various skills development programmes to enhance the leadership skills of women representatives in the panchayats. For instance, women's empowerment training under the Kudumbashree initiative, a programme for SHGs in Kerala, facilitated women to develop efficient leadership skills in local-level politics in the last two decades.

Impact of the Work of Elected Women Representatives (EWRs)

- **On Development and Policy Outcomes**
 - The reservation of seats for women paved the way for the greater political participation of women, while also demonstrating the efficient leadership and governance skills of women leaders in panchayat-level politics.
 - A 2010 study across 11 states found that women-led villages saw improved delivery of services with lower levels of corruption. Greater investments were made in services like water infrastructure, sanitation, education, and roads, which were important to the community, especially women.
- **On Citizen Participation and Inclusive Governance**
 - Women leaders have a positive impact on deliberative democracy and inclusive governance by improving participation in gram sabha meetings, which are organised at least twice a year to discuss local development issues.
 - Studies show that female citizens are more likely to participate and speak in meetings where the elected representative is a woman, as they believe that female leaders are more responsive to their concerns and priorities.
- **On Gender equality**
 - Women's entry into non-traditional spaces and their

ability to negotiate and influence decisions have impacted rigid gender norms.

- Many EWRs report a change in confidence levels, and in their status within their family and in the community after getting elected.
- They have also influenced the aspirations of families, as parents invest more in girls' education when there are female role models in politics.
- Additionally, EWRs are role models for other women in their communities and often spur women to participate in politics.

Challenges and Barriers to Elected Women Representatives (EWRs)

- **Rotation of Seats**
 - Many women have drawn attention to the policy of rotating reserved seats every five years as a barrier.
 - Rotation aims to bring in as many excluded groups and individuals as possible into the system.
 - This means that women candidates cannot gain from their experience from one term to the next, and many return to their care-giving roles at home after a single term.
- **Gender Biases in Perception and Interactions**
 - Most women representatives report facing gender-based discrimination and feeling ignored in the panchayat owing to their gender.

23RD MEETING OF SCO COUNCIL

Why in News: India recently attended the 23rd Meeting of the SCO Council of Heads of Government (CHG) in Islamabad hosted by Pakistan.

Key Details

- The CHG meeting was chaired by Pakistan's Prime Minister Shehbaz Sharif.
- India remained the only SCO member to not endorse China's Belt and Road Initiative.
- Jaishankar flagged India's concerns about China and Pakistan in veiled references.
- India extended its best wishes to Russia as it takes over the SCO CHG Presidency.
- **8 key takeaways from the Indian perspective:**
 - Developing a dialogue on the idea of One Earth, One Family, One Future.
 - Outcomes of Indian initiatives like SCO Startup Forum, SWG on Startups and Innovation and Traditional Medicine welcomed by SCO members.
 - DPI & Digital inclusion becoming part of SCO cooperation framework.
 - SCO taking inspiration from Mission LiFE to achieving UNSDGs.
 - Enhancing global food security and nutrition through promoting use of climate-resilient and nutritious grains such as millets.
 - Upholding fair and balanced connectivity projects in accordance with international law, the goals and principles of the UN Charter and SCO Charter.
 - Reemphasizing rules-based, non-discriminatory, open, fair, inclusive and transparent multilateral trading system with WTO at its core.
 - Opposing protectionist actions, unilateral sanctions, and trade restrictions that undermine the multilateral trading system and impede global sustainable development.

PRELIMS SPECIAL**Shanghai Cooperation Organization (SCO)**

- The Shanghai Cooperation Organization is a permanent intergovernmental international organization established on June 15, 2001 in Shanghai (PRC) by the Republic of

Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Russian Federation, the Republic of Tajikistan and the Republic of Uzbekistan.

- Its predecessor was the mechanism of the Shanghai Five.

Goals of SCO

- To strengthen mutual trust, friendship and good-neighborliness between the Member States.
- To encourage the effective cooperation between the Member States in such spheres as politics, trade, economy, science and technology, culture, education, energy, transport, tourism, environmental protection, etc.
- To jointly ensure and maintain peace, security and stability in the region
- To promote a new democratic, fair and rational international political and economic international order.

Council of Heads of State

- The SCO Heads of State Council is the supreme SCO body.
- It determines priorities and define major areas of activities of the Organisation, decide upon the fundamental issues of its internal arrangement and functioning and its interaction with other States and international organisations, as well as consider the most topical international issues.
- The Council holds its regular meetings once a year.
- A meeting of the Heads of State Council is chaired by the head of State organising this regular meeting.
- The venue of a regular meeting of the Council shall generally be determined in the Russian alphabetic order of names of the SCO member states.

Council of Heads of Government (Prime Ministers)

- The SCO Heads of Government Council approves the budget of the Organisation, consider and decide upon major issues related to particular, especially economic, spheres of interaction within the Organisation.
- The Council holds its regular meetings once a year.
- A meeting of the Heads of State Council is chaired by the head of State organising this regular meeting.
- The venue of a regular meeting of the Council is generally determined in the Russian alphabetic order of names of the SCO member states.
- The venue of a regular meeting of the Council is determined by prior agreement among heads of Government (Prime Ministers) of the member states.

Council of Ministers of Foreign Affairs

- The Council of Ministers of Foreign Affairs considers issues related to day-to-day activities of the Organisation, preparation of meetings of the Heads of State Council and holding of consultations on international problems within the Organisation.
- The Council may, as appropriate, make statements on behalf of SCO.
- The Council generally meets one month prior to a meeting of the Heads of State Council.
- Extraordinary meetings of the Council of Ministers of Foreign Affairs is convened on the initiative of at least two member states and upon consent of ministers of foreign affairs of all other member states.
- The venue of a regular or extraordinary meeting of the Council is determined by mutual agreement.
- The Council is chaired by the minister of foreign affairs of the member state on whose territory the regular meeting of the Heads of State Council takes place, during the period starting from the date of the last ordinary meeting of the Heads of State Council to the date of the next ordinary meeting of the Heads of State Council.
- The Chairman of the Council of Ministers of Foreign Affairs represents the Organisation in its external contacts, in accordance with the Rules of Procedure of the Council.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following countries

- | | |
|---------------|-----------------|
| 1. Kazakhstan | 2. Uzbekistan |
| 3. Tajikistan | 4. Turkmenistan |

How many of the above countries are full time members of Shanghai Cooperation Organization (SCO)?

- | | |
|----------------|--------------|
| (a) Only one | (b) Only two |
| (c) Only three | (d) All four |

Answer: (c) (1, 2 and 3 only)

Descriptive Question

Q. Discuss India's participation in the recent SCO Council of Heads of Government and key takeaways from it. [10 marks] [150 words]

ASEAN-INDIA SUMMIT

Why in News: Prime Minister participated in the 21st ASEAN-India Summit in Lao PDR.

Key Details

- Marking a decade of India's Act East Policy, Prime

Minister joined ASEAN leaders to review the progress of ASEAN-India Comprehensive Strategic Partnership and chart the future direction of cooperation. This was Prime Minister's 11th participation in the Summit.

- In keeping with the Chair's theme of **Enhancing Connectivity and Resilience**, PM announced a 10-point plan which includes:
 - Celebrating the year 2025 as ASEAN-India Year of Tourism for which India would make available USD 5 million towards joint activities.
 - To celebrate a decade of Act East Policy through several people centric activities including Youth Summit, Start-up Festival, Hackathon, Music Festival, ASEAN-India Network of Think Tanks and Delhi Dialogue.
 - To organise ASEAN-India Women Scientists Conclave under ASEAN-India Science and Technology Development Fund.
 - Doubling the number of scholarships at Nalanda University and provision of new scholarships for ASEAN students at Agricultural Universities in India.
 - Review of ASEAN-India Trade in Goods Agreement by 2025.
 - Enhancing Disaster Resilience for which India would make available USD 5 million.
 - Initiate a new Health Ministers' track towards building Health Resilience.
 - Initiate a regular mechanism of ASEAN-India Cyber Policy Dialogue towards strengthening Digital and Cyber Resilience.
 - Workshop on Green Hydrogen.
 - Invited ASEAN Leaders to join 'Plant a Tree for Mother' campaign towards building climate resilience.
- **Outcomes from the Summit**
 - Leaders agreed to create a new ASEAN-India Plan of Action (2026-2030) that will guide both sides in realizing the full potential of the ASEAN-India partnership.
 - Leaders adopted two joint statements:
 - ◆ Joint Statement on Strengthening ASEAN-India Comprehensive Strategic Partnership for Peace, Stability and Prosperity in the Region in the context of the ASEAN Outlook on the Indo-Pacific (AOIP) with the Support of India's Act East Policy (AEP).
 - ◆ ASEAN-India Joint Statement on Advancing Digital Transformation Leaders appreciated India's leadership in the field of digital transformation and welcomed partnership with India in digital public infrastructure.

PRELIMS SPECIAL

Association of Southeast Asian Nations (ASEAN)

- The Association of Southeast Asian Nations, or ASEAN, was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration) by the Founding Fathers of ASEAN: Indonesia, Malaysia, Philippines, Singapore and Thailand.
- Brunei Darussalam joined ASEAN on 7 January 1984, followed by Viet Nam on 28 July 1995, Lao PDR and Myanmar on 23 July 1997, and Cambodia on 30 April 1999, making up what is today the ten Member States of ASEAN.

ASEAN Summit

- The ASEAN Summit is the highest policy-making body in ASEAN comprising the Head of States or Government of ASEAN Member States.
- The ASEAN Summit is held twice annually at a time to be determined by the Chair of the ASEAN Summit in consultation with other ASEAN Member States.
- The summit is to be hosted by the ASEAN Member State holding the ASEAN Chairmanship.
- The First ASEAN Summit was held in Bali, Indonesia on 23-24 February 1976.

East Asia Summit (EAS)

- The East Asia Summit (EAS) process was initiated in 2005 with the convening of the 1st East Asia Summit in Kuala Lumpur, Malaysia.
- At its inception, the East Asia Summit comprised 16 participating countries, namely ASEAN Member States, Australia, China, India, Japan, New Zealand, and the Republic of Korea.
- The United States and Russian Federation joined at the 6th East Asia Summit in Bali, Indonesia on 19 November 2011.
- The East Asia Summit refers to the Meeting of Heads of States/Governments of the EAS participating countries which is convened annually.
- The Chair of the East Asia Summit is the incumbent ASEAN Chair and its rotation follows the ASEAN Chairmanship.
- For the period of January to December 2024, the Chair of the East Asia Summit is the Lao PDR who is the current ASEAN Chair.
- **19th EAS:** EAS leaders reaffirmed their commitment to further strengthening the EAS as a premier Leaders-led forum for dialogue and cooperation on broad strategic, political, and economic issues of common interest and concern with the aim of promoting peace, stability and economic prosperity in East Asia in line with the EAS fundamental documents and based on the established principles, objectives and modalities of the EAS.

• Areas of Cooperation

- Peace and Security
- Sustainable Development
- Climate, Environment and Energy Cooperation
- Education Cooperation
- Finance
- Global Health Issues and Pandemic Diseases
- Cooperation on Natural Disaster Management
- Cooperation on ASEAN Connectivity
- Economic Cooperation and Trade
- Poverty Alleviation
- Food Security
- Maritime Cooperation
- Tourism Cooperation
- Advancement and Empowerment of Women and Youth Participation

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following statements is/are correct regarding the Association of Southeast Asian Nations (ASEAN)?

1. The ASEAN Summit is held twice a year.
 2. The East Asia Summit (EAS) was initiated in 2005.
 3. The United States and Russian Federation joined the EAS in 2011.
- (a) 1 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2, and 3

(d) Answer

Descriptive Question

Q. Analyze the significance of India's Act East Policy in the context of the ASEAN-India Comprehensive Strategic Partnership. Critically examine the key initiatives announced by Prime Minister. [15 marks] [250 words]

INDIA - CANADA RELATIONS

Why in News: India has recently withdrawn High Commissioner & other 'targeted' diplomats from Canada.

Timeline of deteriorating relations between India and Canada

- The treaty was signed by Indian finance minister Nirmala Sitharaman and Uzbekistan's deputy prime minister Khodjayev Jamshid Abdukhakimovich at Tashkent.
- The BIT between India and Uzbekistan assures appropriate protection to Uzbekistan investors in India and Indian investors in the Republic of Uzbekistan, in light of relevant international precedents and practices.
- It will increase the comfort level and boost the confidence of investors by assuring a minimum standard of treatment and non-discrimination, while providing for an independent forum for dispute settlement through arbitration.
- The BIT also provides for protection to investments from expropriation, provides for transparency, transfers and compensation for losses.
- However, while providing such investor and investment protection, balance has been maintained with regard to the state's right to regulate and thereby provides adequate policy space.

PRELIMS SPECIAL

Brief on India-Uzbekistan Bilateral Relations

- India and Uzbekistan have relations that go back to ancient history. India was one of the first countries to recognize the state sovereignty of Uzbekistan after the latter's independence.
- The protocol on establishment of diplomatic relations between India and Uzbekistan was signed in Tashkent on 18 March 1992.
- India and Uzbekistan declared their Strategic Partnership in 2011.

Bilateral Trade and Investments

- India is among top 10 trade partners of Uzbekistan with bilateral trade USD 756.60 million (as per Uzbek statistics-2023) well below potential.
- The major items of India's exports are pharmaceutical products, mechanical equipment, vehicle parts, services, frozen buffalo meat, optical instruments and equipment and mobile phones.
- India's import from Uzbekistan consists largely of fruit and vegetable products, services, fertilizers, juice products and extracts, and lubricants.

Defence & Security Cooperation

- India has longstanding and wide-ranging cooperation with Uzbekistan in the field of defence. Bilateral defence cooperation is carried out through the Joint Working Group format, established in 2019 and the fourth JWG meeting was held in Uzbekistan in April 2024.
- India & Uzbekistan regularly participate in joint military exercises "DUSTLIK", with the fifth edition held in April 2024 and attended by COAS General Manoj Pande during his visit to Uzbekistan.

Multilateral engagement

- India and Uzbekistan cooperate closely at several multilateral platforms such as the UN, G20, BRICS & SCO. Both sides also

interact under the India-Central Asia framework in India-Central Asia Summit, India-Central Asia Dialogue at EAM level, Joint Working Group on Afghanistan and Central Asia Business Council.

- There is also India-Central Asia National Security Advisors' meeting. Uzbekistan has also been actively participating in Voice of Global South Summit (VGSS).

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following countries:

1. Kazakhstan
2. Tajikistan
3. Afghanistan
4. Turkmenistan
5. Kyrgyzstan

Which of the above have borders with Uzbekistan?

- (a) 1, 2, 3 and 5 only (b) 1, 2, 3 and 4 only
 (c) 1, 2 and 3 only (d) All 1, 2, 3, 4, 5

Answer: (d)

INDIA AND MALDIVES RELATION

Why in News: India and Maldives recently agreed to transform the bilateral relationship to a "Comprehensive Economic and Maritime Security Partnership".

Key Details

- Prime Minister of India underscored the importance attached by India to its relationship with Maldives under its 'Neighbourhood First' Policy and Vision SAGAR, and reaffirmed India's unwavering commitment to assist Maldives on its developmental journey and priorities.
- The President of Maldives thanked India for its timely emergency financial assistance, and acknowledged India's continued role as the 'First Responder' of Maldives in times of need, following India's earlier assistance in the last decade during the 2014 water crisis in Malé and the Covid-19 pandemic.
- Both the leaders agreed to chart a new framework for cooperation with an aim to comprehensively transform the bilateral relationship to a Comprehensive Economic and Maritime Security Partnership, which is people-centric, future-oriented and will act as an anchor of stability in the Indian Ocean Region.
 - Both the leaders also agreed to launch negotiations for a Free Trade Agreement and signed five pacts including the currency swap agreement, training of judicial officers, prevention of corruption, law enforcement training, sports and youth affairs.

- **Note:** The economic assistance will be significant since Maldives is looking at a debt default as its foreign exchange reserves have dropped to \$440m (£334m), just enough for one-and-a-half months of imports.

Turnaround in Maldives' Policy

- **Internal Dynamics:** India has amassed considerable goodwill and political capital within the country through extensive cooperation stretching to several decades. This was reflected in the pro-India constituency – and the people at large – exerting sufficient pressure on the government to seek a meaningful reconciliation with New Delhi.
- **Dissatisfaction with China:** expectations from China may not have been met sufficiently because the distance – and not just in geographic terms – really matters.
- **India's pragmatic handling of relations:** India's patient and pragmatic handling of the relationship in recent months and its studied refusal to respond to provocations by Maldives officials were noteworthy. Besides the PM's guidance, the leadership of the Ministry of External Affairs and the quiet but effective work done by our High Commission in Male deserve full credit for this achievement.
- **Advice from Quad members:** friendly advice and suggestions from India's Quad partners – the US, Japan, and Australia – seem to have convinced Maldives that diversified cooperation rather than overdependence on a single partner is the best way to protect and promote its interests
- **Persisting Challenges:** Maldives, with its vast Exclusive Economic Zone, is exposed to traditional and non-traditional maritime challenges including piracy, IUU (illegal, unreported and unregulated) fishing, drug smuggling and terrorism.
 - India agreed to support the Maldives in enhancing surveillance and monitoring capability of Maldives National Defence Force (MNDF) with the provisioning of radar systems and other equipment

Conclusion

India and Maldives share “common challenges in the Indian Ocean Region which have multi-dimensional implications for the security and development of both the countries. As natural partners, they resolve to work together in advancing maritime and security cooperation for the benefit of peoples of both India and Maldives as well as for the larger Indian Ocean Region.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Consider the following statements regarding Maldives:
1. Equator passes through Maldives.
 2. Maldives is the smallest Asian country by land area.
 3. Maldives is located at the north of Chagos islands.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

(c) Answer

INDIA FOR PERMANENT SEAT AT THE UNITED NATION

Why in News: Bhutan's Prime Minister recently supported India's candidature as permanent seat member at the UN Security Council.

Key Details

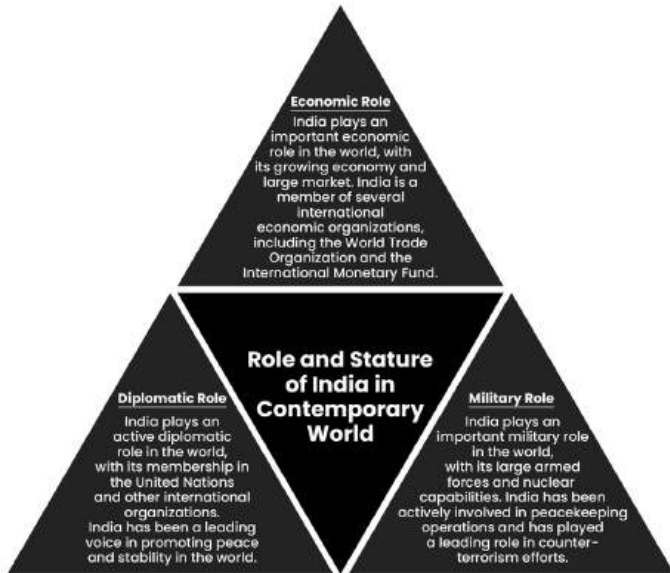
- India's bid for permanent membership in a reformed United Nations Security Council got support from Bhutan.
- During the high-level week, several UN Member states, including permanent members France, United Kingdom and the U.S. explicitly voiced support for India to become a permanent member in a reformed Security Council.
- He also voiced support for Japan, “a leading donor and peacebuilder”, to become a permanent UNSC member.

Why does India Deserve to be a permanent member of UNSC ?

- **Largest Democracy:** The Republic of India is the largest democracy on the face of the earth. More than sixty crore votes were cast during the general elections of 2019. In its 75 years of independent history, India always remained a democracy.
- **Largest population:** India has the 2nd largest population in the world. 17.5% of the world's population lives in India alone.
- **Net Security provider in the region:** India is also a major military power and naval power in the region and world stage.
- **Contributor to UN Peacekeeping:** India is among the largest contributors to the UN Peacekeeping forces.
- **Global contribution:** India's contribution to the world during the Covid-19 pandemic, whether in the face of vaccines or food grain supplies, is not unknown to the international community.
- **Can Contribute to world peace:** India is the only large nation, which maintains close ties with both the United States and Russia and hence can be crucial for the maintenance of world peace. Also, India can be a safe bid for the West, to counter the rising Chinese dominance and aggression.
- **Benefit Global South:** The global south faces common issues such as development finance, health, climate

change, technology, governance, energy, trade, youth empowerment, digital transformation, women-led development, capacity building, and human-centric sustainable development.

- It also has common threats such as terrorism, extremism and separatism to our societies, the emergence of new technology-related social and economic challenges, and the failure of global governance.
- India's democratic resilience, its contemporary rise and development, and its commitment towards the collective upliftment of humanity were greatly inspirational for countries of the Global South.



Future Challenges for India

- **Developmental Challenges** When reviewing India's challenges in the changing international scenario, it is not difficult to identify India's demists issues of poverty, education, health, water, climate change and environmental degradation and country has to overcome.
- The primary goal of all policy, whether domestic or external is the tram starvation of India into a developed and preserved society. Meeting external challenges ultimately depends on how successfully India deals with domestic challenges.
- **External Challenges: China challenge:** For India, the management of relations with China has been an important foreign policy challenge, not just on the economic front but in the politico–security domain because of unresolved border disputes as well as the China-Pakistan nexus.
- **The India-Pakistan conflict:** India has been involved in a long-standing conflict with Pakistan over the ownership and control of the region of Jammu and Kashmir. The conflict has led to several conflicts and tensions between India and Pakistan.
- **Economic challenges:** India's role in world affairs can also

pose economic challenges to the country. The economic competition with other countries can lead to an uneven distribution of resources and economic instability.

UNSC Reform Need of Hour

- **North-South Divide:** The permanent UNSC membership portrays the big North-South divide in the decision-making of security measures. For instance, there is no permanent member from Africa, despite the fact that 75% of its work is focused on that continent.
- **New Challenges:** Issues such as deepening economic interdependence, transnational threats, worsening environmental degradation also call for effective multilateral negotiations among the countries based on consensus.
- **Long Overdue:** The UNSC was expanded only once in 1963 to add 4 non-permanent members to the Council. Although the overall membership of the UN has increased from 113 to 193, there has been no change in the composition of the UNSC.
- **Inequitable economic and geographical representation:** While Europe is over-represented, Asia is underrepresented. Africa and South America have no representation at all.
- **Legitimacy and credibility:** Stalled reform agenda and various issues including its interventions in Libya and Syria in the name of responsibility have put questions on the credibility of the institution.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following continents:

- | | |
|-----------|------------------|
| 1. Africa | 2. South America |
| 3. Europe | 4. Asia |

How many of the above continents are represented in permanent membership of UNSC?

- | | |
|----------------|--------------|
| (a) Only one | (b) Only two |
| (c) Only three | (d) All four |

Answer: (b) 3 and 4 only

Descriptive Question

Q. Discuss India's case for UNSC permanent membership with reference to its global stature. Analyze the challenges India faces in maintaining its bid for permanent membership in UNSC. [15 marks] [250 words]

THE WILMINGTON DECLARATION: QUAD LEADERS' SUMMIT

Why in News: Prime Minister recently participated in the fourth Quad Leaders' Summit in Wilmington, Delaware, hosted by the President of the United States.

Key Details

The Leaders made the following announcements to address the development priorities of the Indo-Pacific region and of the global community as a whole:

- **Quad Cancer Moonshot:** A groundbreaking partnership to save lives in the Indo-Pacific region by combating cervical cancer.
- **Maritime Initiative for Training in the Indo-Pacific (MAITRI):** To enable Indo-Pacific partners to maximize tools provided through IPMDA and other Quad initiatives.
- First-ever **Quad-at-Sea Ship Observer Mission** in 2025 to improve interoperability and advance maritime safety.
- **Quad Ports of the Future Partnership:** To harness the Quad's collective expertise to support sustainable and resilient port infrastructure development across the Indo-Pacific.
- **Quad Principles for Development and Deployment of Digital Public Infrastructure** in the region and beyond.
- **Semiconductor Supply Chains Contingency Network Memorandum of Cooperation:** To enhance resilience of Quad's semiconductor supply chains.
- Collective Quad effort to boost energy efficiency, including deployment and manufacturing of high-efficiency affordable cooling systems in the Indo-Pacific region.
- India's establishment of a space-based web portal for Mauritius, to support the concept of open science for space-based monitoring of extreme weather events and climate impact.
- A new sub-category under the Quad STEM Fellowship, announced by India, for students of the Indo-Pacific region to pursue a 4-year bachelor's level engineering programme at a Government of India funded technical institute.
- The Leaders also agreed to reform the UN Security Council and recognised the urgent need to make it more representative and accountable through expansion in permanent and non-permanent categories of membership of the UN Security Council.

Various Dimensions and Present Areas of Working under Quad

- **Enduring Partners for Indo-Pacific**
 - Over the past four years, Quad Leaders have met six times, including twice virtually.
 - Quad Foreign Ministers have met eight times, most recently in Tokyo in July.
 - In the coming months, Quad Commerce and Industry ministers will meet for the first time.
 - The United States will host the 2025 Quad Foreign Ministers Meeting, and India will host the 2025 Quad Leaders Summit.

- Quad country representatives convene on a regular basis, at all levels, to consult one another, exchange ideas to advance shared priorities, and deliver benefits for partners across the Indo-Pacific region.
- All Quad governments have institutionalized the Quad at all levels and across a diverse array of departments and agencies.
- **Global Health and Health Security**
 - **Quad Cancer Moonshot:** The programme will focus on expanding cervical cancer screening; increasing vaccinations against the human papillomavirus, or HPV, a common sexually transmitted infection that is the primary cause of cervical cancer; and treating patients.
 - **Pandemic Preparedness:** Quad countries are committed to supporting health security and resiliency efforts across the region, including continued support for the Pandemic Fund.
 - **Mpox:** In response to the current clade I mpox outbreak, as well as the ongoing clade II mpox outbreak, the Quad plans to coordinate its efforts to promote equitable access to mpox vaccines.
- **Humanitarian Assistance and Disaster Relief (HADR)**
 - In 2022, Quad Foreign Ministers signed the Guidelines for the Quad Partnership on HADR in the Indo-Pacific.
 - In the coming months, Quad HADR experts will conduct a tabletop exercise to prepare for potential future disasters in the region.
- **Maritime Security**
 - Indo-Pacific Partnership for Maritime Domain Awareness and Maritime Training
 - ◆ Quad Leaders launched the Indo-Pacific Partnership for Maritime Domain Awareness (IPMDA) at the 2022 Quad Leaders' Summit in Tokyo.
 - ◆ Quad announced a new regional Maritime Initiative for Training in the Indo-Pacific (MAITRI) to enable our partners in the region Indo-Pacific partners to monitor and secure their waters.
 - **Indo-Pacific Logistics Network:** To support civilian response to natural disasters across the Indo-Pacific region.
 - **Coast Guard Cooperation:** U.S. Coast Guard, Japan Coast Guard, Australian Border Force, and Indian Coast Guard plan to launch a first-ever Quad-at-Sea Ship Observer Mission in 2025 in the Indo-Pacific to improve interoperability.
- **Quality Infrastructure**
 - **Quad Ports of the Future Partnership:** To support sustainable and resilient port infrastructure development across the Indo-Pacific, in collaboration with regional partners.

In 2025, Quad partners intend to hold the inaugural Regional Ports and Transportation Conference, hosted by India in Mumbai.

- **Quad Infrastructure Fellows:** It was announced at the 2023 Quad Leaders’ Summit to improve capacity and deepen professional networks across the region.
- **Undersea Cables and Digital Connectivity:**
 - ◆ Quad partners continue to support and strengthen quality undersea cable networks in the Indo-Pacific.

Critical and Emerging Technologies

Open Radio Access Network (RAN) and 5G

In 2023, Quad partners announced the first-ever Open RAN deployment in the Pacific, in Palau, to support a secure, resilient, and interconnected telecommunications ecosystem.

Artificial Intelligence (AI)

Through the Advancing Innovations for Empowering NextGen Agriculture (AI-ENGAGE) initiative announced at the 2023 Quad Leaders’ Summit.

Biotechnology

The Quad partners look forward to launching the Bio Explore Initiative – a joint effort supported by an initial \$2 million in funding to use AI technology.

Conclusion

Quad is important for India as due to its geographical location towards maintaining maritime security and ensuring freedom of navigation in the Indo-Pacific. It serves as a strategic counterbalance to China’s growing influence in the region. For India its participation in the Quad enhances economic cooperation, trade, and investment opportunities among the member countries.

PRELIMS SPECIAL

- The QUAD, known as the ‘Quadrilateral Security Dialogue’ (QSD), is an informal strategic forum of a diplomatic partnership between Australia, India, Japan, and the United States committed to supporting an open, stable and prosperous Indo-Pacific that is inclusive and resilient.
- Quad countries are home to a combined 1.9 billion people or 24% of the world’s population and represent 35% of the world’s GDP and 18% of global trade.
- The Quad’s origins date back to our collaboration in response to the December 2004 Indian Ocean tsunami.
- Quad partners engage regularly through Leaders, Foreign Ministers, Quad Sherpas, senior officials, and experts.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following countries:

- | | |
|-----------------------------|-----------|
| 1. United States of America | 2. France |
| 3. India | 4. Japan |
| 5. Australia | 6. Brazil |

Which of the above are members of the QUAD?

- | | |
|------------------------|------------------------|
| (a) 1, 2 and 3 only | (b) 1, 3, 4 and 5 only |
| (c) 1, 3, 5 and 6 only | (d) 1, 2, 3 and 4 only |

Answer: (b)

Descriptive Question

Q. What are the key initiatives announced at the 6th Quad Leaders Summit and how do they aim to address development in the Indo-Pacific region? [10 marks] [150 words].

POWER TRADE IN SOUTH ASIA

Why in News: Neighbouring countries such as Bhutan, Nepal, Myanmar, and Bangladesh can now buy or sell electricity through India’s real-time market.

Key Details

- Neighbouring countries such as Bhutan, Nepal, Myanmar, and Bangladesh can now buy or sell electricity through India’s real-time market as the Central Electricity Authority (CEA) has amended India’s Cross Border Electricity Trade (CBET) rules.
- Until now, the neighbouring countries were allowed to trade only in the day-ahead market (DAM) in the power exchanges. In DAM, the traded electricity is delivered only a day later.
- Data from Indian Energy Exchange Ltd (IEX) showed that ever since the CBET rules were notified in 2021, Nepal and Bhutan have traded 4.41 billion units of electricity so far in the Indian power exchange. Myanmar and Bangladesh have not yet started power trade in the bourses.
- **Bidding Process**
 - India has three power exchange platforms which are used by power utilities to procure short-term electricity.
 - Real time market (RTM) is a segment in the power exchanges that enables buyers and sellers to meet their energy requirement closer to real time operation.

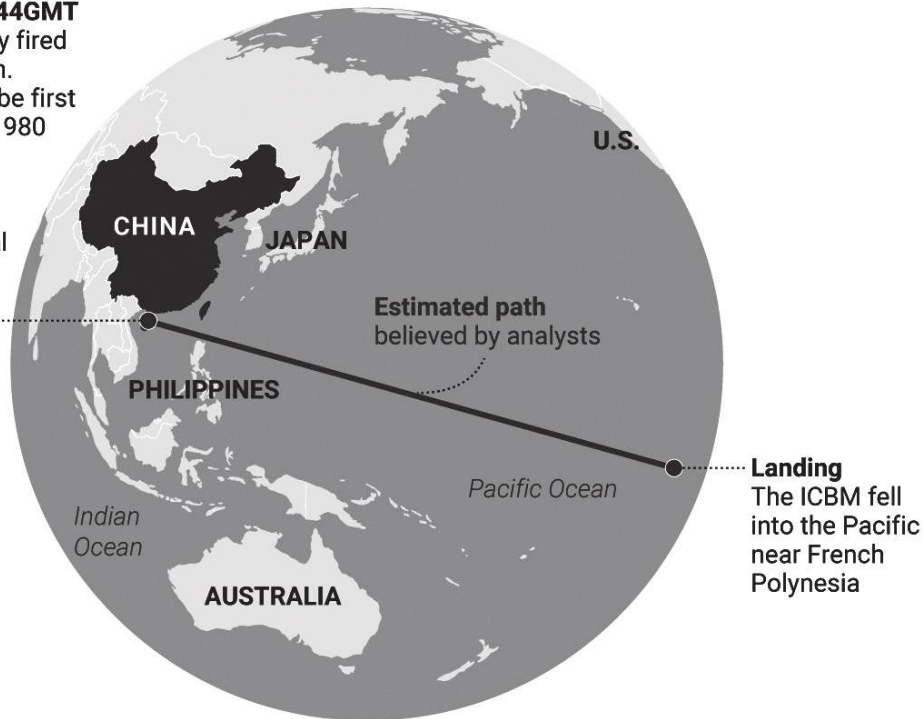
INTER CONTINENTAL BALLISTIC MISSILE

Why in News: China recently launched intercontinental ballistic missile (ICBM) from its territory deep into the Pacific Ocean, first such test since 1980

Key Details

Sep 25, 00:44GMT

Missile likely fired from Hainan. Believed to be first time since 1980 that China launched ICBM into international waters



- The missile splashed down near the exclusive economic zone of French Polynesia, not far from the Marquesas Islands.
- Importantly, this test came precisely ten years after the DF-31AG achieved its first launch on 25 September 2014. Symbolism and dates are important to the PLA, and at that time the then-new missile used a lofted trajectory to limit its ground range.
- However, this latest provocative test came at a time of heightened tensions with neighbours like Japan, the Philippines and Taiwan.

- Intermediate-range: between 3,000 and 5,500 kilometers (approximately 1,860-3,410 miles)
- Long-range: more than 5,500 kilometers (approximately 3,410 miles), also known as intercontinental or strategic ballistic missiles. Intercontinental ballistic missiles (ICBMs) can fly much further than the minimum range; for example.

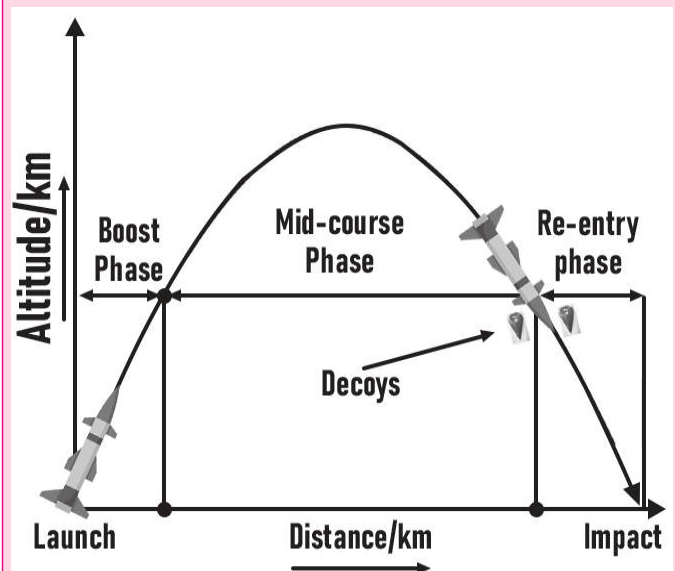
PRELIMS SPECIAL

Ballistic Missiles

They are powered initially by a rocket or series of rockets in stages, but then follow an unpowered trajectory that arches upwards before descending to reach its intended target. Ballistic missiles can carry either nuclear or conventional warheads.

There are four general classifications of ballistic missiles based on their range, or the maximum distance the missile can travel:

- Short-range: less than 1,000 kilometers (approximately 620 miles), also known as tactical ballistic missiles.
- Medium-range: between 1,000 and 3,000 kilometers (approximately 620-1,860 miles), also known as theater ballistic missiles.



About Intercontinental Ballistic Missile



- An intercontinental ballistic missile (ICBM) is a ballistic missile with a range greater than 5,500 kilometres (3,400 mi), primarily designed for nuclear weapons delivery (delivering one or more thermonuclear warheads).
- Conventional, chemical, and biological weapons can also be delivered with varying effectiveness, but have never been deployed on ICBMs.
- Most modern designs support multiple independently targetable reentry vehicles (MIRVs), allowing a single missile to carry several warheads, each of which can strike a different target.
- The United States, Russia, China, France, India, the United Kingdom, Israel, and North Korea are the only countries known to have operational ICBMs. Incidentally, Pakistan is the only nuclear-armed state that does not possess ICBMs.

Which of the above countries possess Inter Continental Ballistic Missile?

- (a) All 1, 2, 3, 4, 5 (b) 1, 2, 3 and 5 only
 (c) 1, 2, 3 and 4 only (d) 1, 2 and 3 only

Answer: (b)

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following countries

- | | |
|----------------|-------------|
| 1. Russia | 2. India |
| 3. China | 4. Pakistan |
| 5. North Korea | |

WORLD POST DAY

Why in News: Department of Posts unveils commemorative postage stamps on World Post Day.

Key Details

- On the occasion of World Post Day, the Department of Posts, Government of India, unveiled a special set of commemorative postage stamps celebrating the 150th anniversary of the Universal Postal Union (UPU).
- The set of three commemorative stamps reflects India's strong connection with the UPU and symbolizes the shared values of cooperation, innovation, and inclusivity.
- They highlight the essential role postal services play in bridging distances, facilitating communication, and connecting people across the globe.
- This year's observance of World Post Day is particularly

meaningful as India Post marks 170 years of service to the nation.

- From urban centers to remote villages, India Post has been integral in delivering essential services and connecting people across the country.
- India Post, with the world's largest postal network, continues to align with the UPU's mission, modernizing its services and supporting the development of postal infrastructure worldwide.

World Post Day

- World Post Day is celebrated each year on 9 October, the anniversary of the establishment of the Universal Postal Union in 1874 in the Swiss Capital, Bern.
- It was declared World Post Day by the UPU Congress held in Tokyo, Japan in 1969. Since then, countries across the world participate annually in the celebrations.
- The Posts in many countries use the event to introduce or promote new postal products and services.
- **2024 theme:** 150 years of enabling communication and empowering peoples across nation
- In 2024, the Universal Postal Union (UPU) celebrates its 150th anniversary.
- With the theme "150 years of enabling communication and empowering peoples across nations," this year's World Post Day recognizes the UPU's longstanding achievements and reinforces its commitment to serve all peoples for the decades and centuries to come.

PRELIMS SPECIAL

Universal Postal Union (UPU)

- Established in 1874, the Universal Postal Union (UPU), with its headquarters in the Swiss capital Berne, is the second oldest international organization worldwide.
- With its 192 member countries, the UPU is the primary forum for cooperation between postal sector players. It helps to ensure a truly universal network of up-to-date products and services.
- In this way, the organization fulfils an advisory, mediating and liaison role, and provides technical assistance where needed. It sets the rules for international mail exchanges and makes recommendations to stimulate growth in mail, parcel and financial services volumes and improve quality of service for customers.
- **Member Countries**
 - Any member country of the United Nations may become a member of the UPU.
 - Any non-member country of the United Nations may become a UPU member provided that its request is approved by at least two-thirds of the member countries of the UPU. The UPU has now 192 member countries.

UPU consists of 4 bodies

- **The Congress:** Congress is the supreme authority of the Universal Postal Union (UPU) and meets every four years.
- **The Council of Administration:** The Council ensures the continuity of the UPU's work between Congresses, supervises its activities and studies regulatory, administrative, legislative and legal issues.
- **The Postal Operations Council:** The Postal Operations Council (POC) is the technical and operational mind of the UPU and consists of 48 member countries, elected during Congress.
- **The International Bureau:** Fulfilling a secretariat function, the International Bureau provides logistical and technical support to the UPU's bodies.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to the Universal Postal Union (UPU) consider the following statements:

1. It's headquarter is located in Berne, Switzerland.
2. It is second oldest international organization worldwide.

Which of the statements given above are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (c)

PHILADELPHI CORRIDOR

Why in News: Israel has made control of the strip between Gaza and Egypt a condition in ceasefire negotiations.

What is the Philadelphi corridor?

- The Philadelphi corridor is a ribbon of land about nine miles (14km)s in length and 100 metres wide along Gaza's border with Egypt, including the Rafah crossing.
- It was designated as a demilitarised border zone after the withdrawal of Israeli settlements and troops from Gaza in 2005 and runs from the Mediterranean to the Kerem Shalom crossing with Israel.



Brief History of the Corridor

- Before 2005, Israel’s 1979 Camp David peace treaty with Egypt had allowed it to have a limited number of troops in the corridor but no heavy armour.
- After the Israeli withdrawal, it was the responsibility of Egypt and the Palestinian Authority, with 750 Egyptian police deployed to prevent smuggling, until Hamas took control of Gaza in 2007.
- It was seized by Israel in May this year as its Gaza ground offensive pushed into Rafah.
- Despite numerous anti-tunnel efforts on both sides of the Egypt-Gaza border, including flooding on the Egyptian side and Israeli airstrikes, cross-border smuggling via underground routes has persisted, and been exploited by Hamas to bring in weapons, although there is evidence that in recent years some arms smuggling has been conducted via the Mediterranean.
- Egypt continues to reject a heavy Israeli military presence directly on the border and has let it be known that any such presence would threaten the peace treaty.

What is the Issue?

- The Israeli Prime Minister has shown intends for Israeli troops to remain in control of the corridor, including the Rafah crossing, after its capture in May, to the alarm of Egypt.

- Both Egypt and Hamas vehemently oppose Israel’s control over the corridor.
- **Note:** Controlling the “Philadelphi Corridor” effectively severs the Gaza Strip’s only land connection to Egypt, potentially blocking subterranean movement between the two regions through a network of tunnels.
- Currently, the Israeli Defence Forces (IDF) oversees the northern and eastern borders and the western coast of the Gaza Strip.
- Gaining control of the southern border through the “Philadelphi Corridor” would complete the encirclement of the Gaza Strip, a strategic move with implications for the demilitarization of the region after the conflict.
- Hamas heavily relies on the “Philadelphi Corridor” for weapons smuggling via underground tunnels. Even with IDF control, the corridor is expected to remain a constant target for terrorist attacks.
- Despite Egypt’s opposition, it is anticipated that the country will eventually have to acquiesce to Israel’s position, particularly given the extensive weapons smuggling carried out by Hamas through the Corridor in recent years.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. The ‘Philadelphi Corridor’ often mentioned in news, refers to?
- (a) Trade route linking North America to Europe.
 - (b) Narrow stretch of land on Gaza’s border with Egypt.
 - (c) International sea route connecting Northern Africa to Southern Africa.
 - (d) None of The Above.

Answer: (b)

Descriptive Question

- Q. Discuss the issue of Philadelphi Corridor in the context of Israel-Palestine relations. [10 marks] [150 words]

ECONOMY & AGRICULTURE

ANNUAL SURVEY OF INDUSTRIES 2022-23

Why in News: Ministry of Statistics and Programme Implementation (MoSPI) has recently released the results of Annual Survey of Industries (ASI).

Key Highlights From the ASI 2022-23 Results

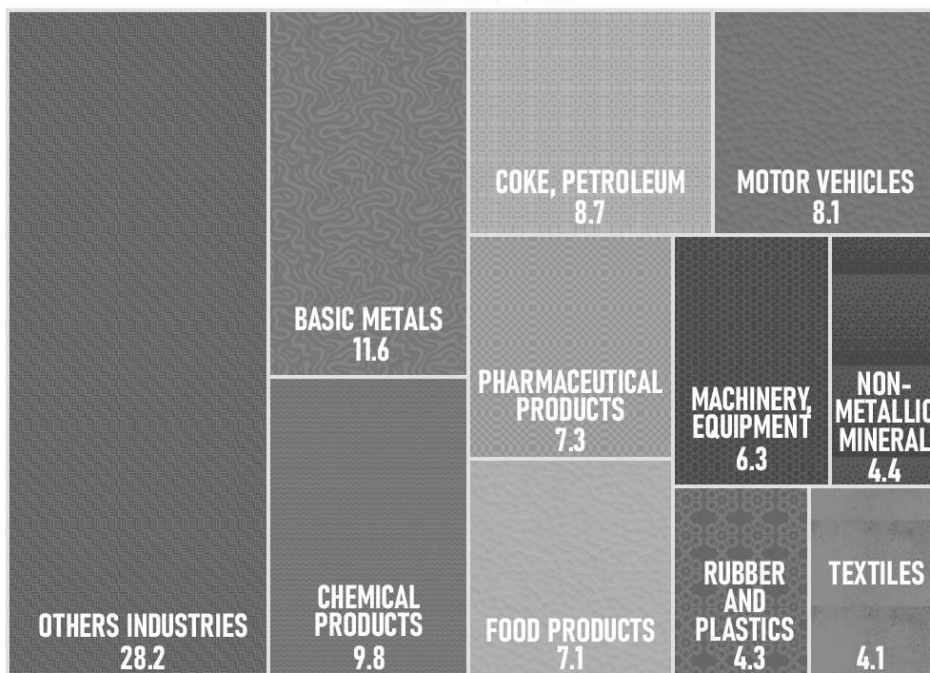
- The results show that the Gross Value Added (GVA) grew by 7.3% in current prices in the year 2022-23 over 2021-22. Increase in input was 24.4% while output grew by 21.5% in the sector in 2022-23 over 2021-22.
- The year 2022-23 witnessed a growth in this sector for the majority of the important economic parameters like invested capital, input, output, GVA, employment and wages and even surpassed the pre-pandemic level in absolute value terms.
- The main drivers of this growth in 2022-23 were industries like Manufacture of Basic metal, Coke & Refined Petroleum Products, Food Products, Chemical and Chemical products and Motor vehicles. These

industries, taken together, contributed about 58% of the total output of the sector and showed output growth of 24.5% and GVA growth of 2.6% in comparison to 2021-22.

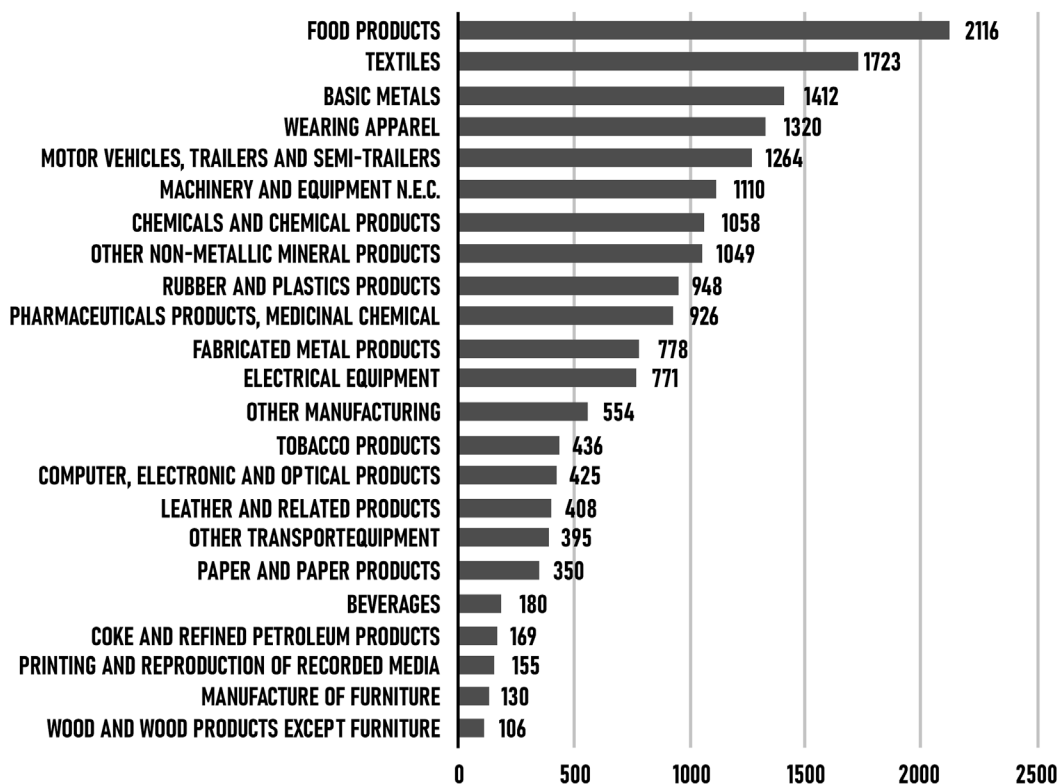
- The estimated number of persons engaged in this sector in 2022-23 has exceeded the pre-pandemic level (that is 2018-19) by more than 22.14 lakh. At the same time, average emoluments also registered an increase over previous year. Also, average emoluments per person engaged in this sector had gone up by 6.3% in 2022-23 in comparison to 2021-22.
- Among the major states, in terms of GVA, Maharashtra ranked first in 2022-23 followed by Gujarat, Tamil Nadu, Karnataka and Uttar Pradesh. The top five states, taken together, contributed more than 54% of the total manufacturing GVA of the country in 2022-23.
- The top five states employing the highest number of persons in this sector were Tamil Nadu, Maharashtra, Gujarat, Uttar Pradesh and Karnataka in ASI 2022-23. Taken together, these states contributed about 55% of total manufacturing employment in the year 2022-23.

Top 10 industries account for 72% of Manufacturing GVA

2022-23



TOTAL NUMBER OF PERSONS ENGAGED (in Thousand)



PRELIMS SPECIAL

About Annual Survey of Industries

The Annual Survey of Industries broadly covers the following:

- Factories registered under Sections 2m(i) and 2m(ii) of the Factories Act, 1948
- Bidi and cigar manufacturing establishments registered under the Bidi & Cigar Workers (Conditions of Employment) Act, 1966.
- Electricity undertakings engaged in generation, transmission and distribution of electricity, not registered with the Central Electricity Authority (CEA).
- Units with 100 or more employees registered in the Business Register of Establishments (BRE) prepared and maintained by the State Governments as and when such lists are shared by the respective State Governments.

ASI frame and its updation

- The ASI frame is based on the lists of registered factory / units maintained by the Chief Inspector of Factories (CIF) in each State and those maintained by registration authorities in respect of Bidi and Cigar establishments and electricity undertakings.
- The frame is being revised and updated periodically by the Regional Offices of the Field Operations Division of NSSO in consultation with the Chief Inspector of Factories in the State.

Data Collection Mechanism

- Data for ASI are collected from the selected factories under the Collection of Statistics Act 2008 as amended in 2017 and Rules framed there under in 2011.
- The entire survey is conducted through a dedicated web-portal without any paper schedule.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following states:

1. Karnataka
2. Kerala
3. Telangana
4. Maharashtra
5. Gujarat

How many of the above states come under the top five states in terms of Manufacturing Gross Value Added as per Annual Survey of Industries 2022-23?

- (a) Only two (b) Only three
 (c) Only four (d) All five

Answer: (b) (1, 4 and 5 only)

PERIODIC LABOUR FORCE SURVEY

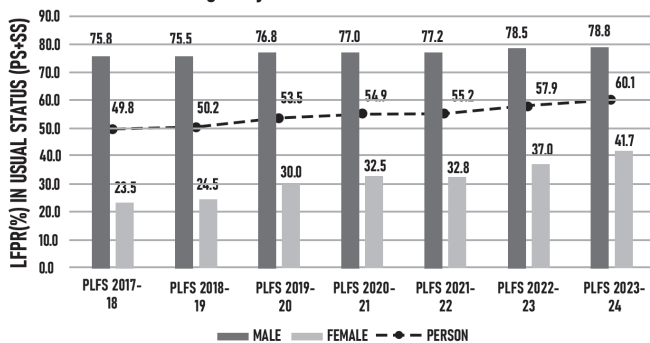
Why in News: Recently National Sample Survey Office (NSSO) released Periodic Labour Force Survey (PLFS) – Annual Report [July, 2023 – June, 2024]

Key Findings of the Survey

- Increasing Trend in Labour Force Participation Rate (LFPR) for persons of age 15 years and above:

- In rural areas, LFPR increased from 50.7% in 2017-18 to 63.7% in 2023-24 while for urban areas it increased from 47.6% to 52.0%. LFPR for male in India increased from 75.8% in 2017-18 to 78.8% in 2023-24 and corresponding increase in LFPR for female was from 23.3% to 41.7%.

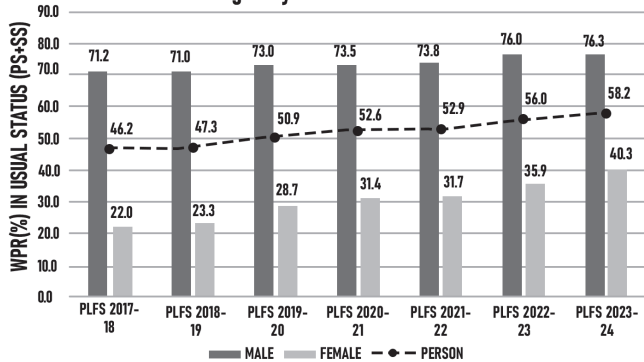
LFPR(%) in usual status (ps+ss) for persons of age 15 years and above from PLFS



- Increasing Trend in Worker Population Ratio (WPR) for persons of age 15 years and above:

- In rural areas, WPR increased from 48.1% in 2017-18 to 62.1% in 2023-24 while for urban areas it increased from 43.9% to 49.4%. WPR for male in India increased from 71.2% in 2017-18 to 76.3% in 2023-24 and corresponding increase in WPR for female was from 22.0% to 40.3%. Overall LFPR in usual status (ps+ss) for persons of age 15 years and above has increased from 57.9% during July 2022 – June 2023 to 60.1% during July 2023 – June 2024.

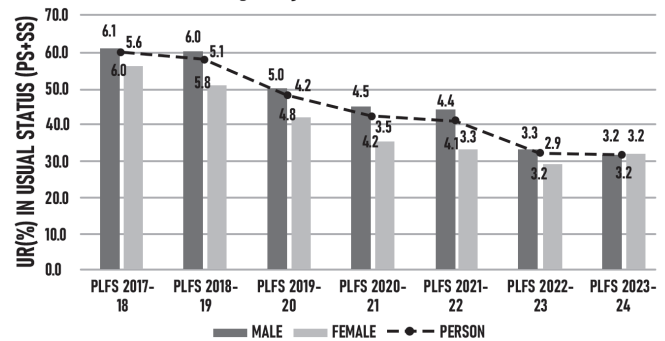
WPR(%) in usual status (ps+ss) for persons of age 15 years and above from PLFS



- Decreasing Trend in Unemployment Rate (UR) for persons of age 15 years and above.

- In rural areas, UR decreased from 5.3% in 2017-18 to 2.5% in 2023-24 while for urban areas it decreased from 7.7% to 5.1%. UR for male in India decreased from 6.1% in 2017-18 to 3.2% in 2023-24 and corresponding decrease for female was from 5.6% to 3.2%.

UR(%) in usual status (ps+ss) for persons of age 15 years and above from PLFS



About Periodic Labour Force Survey

- National Sample Survey Office (NSSO) launched Periodic Labour Force Survey (PLFS) in April 2017.

The objective of PLFS is primarily two fold:

- To estimate the key employment and unemployment indicators (viz. Worker Population Ratio, Labour Force Participation Rate, Unemployment Rate) in the short time interval of three months for the urban areas only in the 'Current Weekly Status' (CWS).
- To estimate employment and unemployment indicators in both 'Usual Status' (ps+ss) and CWS in both rural and urban areas annually.

PRELIMS SPECIAL

Key Definitions Associated with Periodic Labour Force Survey (PLFS)

- Labour Force Participation Rate (LFPR):** LFPR is defined as the percentage of persons in the labour force (i.e. working or seeking or available for work) in the population.
- Worker Population Ratio (WPR):** WPR is defined as the percentage of employed persons in the population.
- Unemployment Rate (UR):** UR is defined as the percentage of persons unemployed among the persons in the labour force.
- Activity Status- Usual Status:** The activity status of a person is determined on the basis of the activities pursued by the person during the specified reference period. When the activity status is determined on the basis of the reference period of last 365 days preceding the date of survey, it is known as the usual activity status of the person.
- Principal activity status (PS):** The activity status on which a person spent relatively long time (major time criterion) during 365 days preceding the date of survey, was considered the usual principal activity status of the person.

- **Subsidiary economic activity status (SS):** The activity status in which a person in addition to his/her usual principal status, performs some economic activity for 30 days or more for the reference period of 365 days preceding the date of survey, was considered the subsidiary economic activity status of the person.
- **Activity Status- Current Weekly Status (CWS):** The activity status determined on the basis of a reference period of last 7 days preceding the date of survey is known as the current weekly status (CWS) of the person.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Periodic Labour Force Survey:

1. There is increase in trend in Labour Force Participation Rate for persons of age 15 years and above for last 5 years.
2. There is increase in trend in Worker Population Ratio (WPR) for persons of age 15 years and above for last 5 years.
3. There is increase in trend in Unemployment Rate (UR) for persons of age of 15 years and above for last 5 years.

How many of the above statements are correct?

- (a) Only one (b) Only two
- (c) All three (d) None

Answer: (b) (1 and 2 only)

MINERAL SECURITY FINANCE NETWORK

Why in News: India joins US-led Mineral Security Network to secure critical minerals, fend off Chinese challenge.

Key Details

- India is now formally a part of the Minerals Security Finance Network, a US-led initiative aiming to strengthen cooperation among members to secure supply chains for critical minerals.
- The partnership includes 13 countries and the European Commission. These are the United States of America, Australia, Canada, Estonia, Finland, France, Germany, India, Italy, Japan, the Republic of Korea, Norway, Sweden, the United Kingdom, and the European Union (represented by the European Commission).
- India’s participation in this initiative is aimed at diversifying and securing its supply of critical minerals

from nations like Argentina, Chile, Australia, and select African countries. Kazakhstan, in Central Asia, is also being explored as a potential source for India’s mineral requirements.

- **The Minerals Security Finance Network (MSFN)** is a new initiative that stems from the Minerals Security Partnership (MSP), a framework established by the US in 2022.
 - MSFN seeks to promote collaboration between the Indo-Pacific region and Europe, ensuring a secure, sustainable, and diversified supply of critical minerals.

Significance

- Rare earth comprises 17 elements and are classified as light RE elements (LREE) and heavy RE elements (HREE).
- Some REs are available in India such as lanthanum, cerium, neodymium, praseodymium and samarium, while others such as dysprosium, terbium, europium that are classified as HREE are not available in Indian deposits in extractable quantities.
- Currently, there is an overwhelming dependence on countries such as China, which is one of the leading producers of RE with an estimated 70 per cent of the global production.

Conclusion

This partnership with the US-led network marks a critical step forward for India in its quest to reduce reliance on China for these minerals and build a robust, self-sustaining supply chain for its green energy initiatives.

PRELIMS SPECIAL

About Mineral Security Partnership

- The Minerals Security Partnership (MSP) is a transnational association whose members seek to secure a stable supply of raw materials for their economies.
- **Members** The MSP is composed of 14 countries and the EU: Australia, Canada, Estonia, Finland, France, Germany, India, Italy, Japan, Norway, South Korea, Sweden, the United Kingdom, the United States, and the European Union.
- Members profess a commitment to high Environmental, social, and corporate governance (ESG) standards.
- India was inducted to the MSP in June 2023.
- **Goal:** To ensure that critical minerals are produced, processed, and recycled in a manner that supports the ability of countries to realize the full economic development benefit of their geological endowments.
- The MSP grouping is focused on the supply chains of minerals such as cobalt, nickel, lithium and also the 17 “rare earth” minerals.

About Rare Earth Minerals

- Rare earth comprises 17 elements and are classified as light RE elements (LREE) and heavy RE elements (HREE).
- Some REs are available in India such as lanthanum, cerium,

neodymium, praseodymium and samarium, while others such as dysprosium, terbium, europium that are classified as HREE are not available in Indian deposits in extractable quantities.

- Currently, there is an overwhelming dependence on countries such as China for HREE, which is one of the leading producers of RE with an estimated 70 percent of the global production.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following countries:

- 1. Australia
- 2. Estonia
- 3. Norway
- 4. India

How many of the above countries are members of Mineral Security Partnership (MSP) association?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Answer: (d)

Descriptive Questions

Q. Examine the significance of India joining the US led Mineral Security Finance Network in reducing its reliance on China for rare earth elements. [10 marks] [150 words]

INDIAN AGENCY IN GLOBAL RATINGS SPACE

Why in News: CareEdge Ratings became the first Indian credit rating agency to join the Global Scale Ratings space with the launch of CareEdge Global IFSC Ltd.

Key Details

- CareEdge Global IFSC Ltd, a subsidiary of CARE Ratings Ltd, assigned a long-term foreign currency (LTFC) rating of CareEdge BBB+ to India, citing India’s resilient post-pandemic recovery and its focus on infrastructure investment.
- CareEdge has released its inaugural report on sovereign ratings, covering 39 global economies. With this, CareEdge became the first Indian credit rating agency to enter the global scale ratings space, including sovereign ratings.
- In its inaugural sovereign rating action, CareEdge Global has assigned:
 - AAA rating to Germany, Netherlands, Singapore, and Sweden
 - AA+ to Australia, Canada, and USA
 - AA- to France, Japan, Korea, UAE, and UK

- A+ to Portugal
- A to Spain and China
- A- to Chile, Malaysia, and Thailand
- BBB+ to India, Botswana, and Philippines
- BBB to Indonesia, Italy, and Mauritius
- BBB- to Mexico, Morocco, and Peru
- BB+ to Brazil, Colombia, Greece, and Vietnam
- BB to South Africa
- B+ to Turkey
- B to Nigeria
- B- to Ecuador and Egypt
- CCC+ to Bangladesh
- CCC to Argentina
- D to Ethiopia

Significance

- 1 India-based credit rating agency assigning sovereign ratings to the rest of the world can help reconstruct India’s narrative across the globe and influence investment decisions and borrowing costs.
- 2 Currently, global credit ratings are dominated by agencies from the developed world. These agencies assess the creditworthiness of governments, corporations and other entities, providing ratings that influence investment decisions and borrowing costs worldwide. Their assessments play a crucial role in the financial markets.
- 3 Foreign agencies were seen to be obstinate when it came to their views on India. Though India has consistently pitched for better ratings, agencies follow their own logic on fiscal math.
- 4 It is an important step for India as it marks a shift where we do not allow others to risk, reconstruct our narrative, instead it gives confidence to create a perception of our own.

BBB+ to India

- The rating given to India is based on the resilient post-pandemic rebound of the Indian economy and increased focus on infrastructure investment.
- India’s high foreign exchange reserves and low levels of external debt contribute to a favourable external position.
- These positives are balanced against high general government debt and weak debt affordability.
- The economy continues to lag in global competitiveness and has a low per capita income.
- Economic growth has remained healthy, rising by 8.2% in FY24 and is projected to remain around 6.5-7% over the next five years.
- Growth has been supported by strong capex push by the government with gross fixed capital formation rising to 30.8% of GDP in FY24 compared to 29.5% in FY19.
- The government’s continued focus on the development of infrastructure and resolving logistic bottlenecks bodes well for boosting the overall growth potential.
- India also enjoys a favourable demographic structure.

- Going ahead, there is a need to increase investment in human capital and create more employment opportunities to fully reap the demographic dividend.
- However, India faces challenges from a low per capita income at \$7638 (constant PPP terms) in 2023.

Sovereign Credit Ratings

- A sovereign credit rating is an assessment of a country's creditworthiness. It shows the level of risk associated with lending to a particular country since it is applied to all bonds issued by the government.
- Obtaining a good credit rating is important for a country that wants to access funding for development projects in the international bond market. Also, countries with a good credit rating can attract foreign direct investments.
- Sovereign credit ratings are important for countries that want to access funds in the international bond market.
- The SEBI (Credit Rating Agencies) Regulations, 1999 govern the credit rating agencies and provide for eligibility criteria for registration of credit rating agencies, monitoring and review of ratings, requirements for a proper rating process, avoidance of conflict of interest and inspection of rating agencies.

Factors that Determine Sovereign Credit Ratings

- **Per Capita Income**
 - A high per capita income increases the potential tax base of the government, which subsequently increases the government's ability to repay its debts.
- **GDP Growth**
 - Strong GDP growth means that a country will be able to meet its debt obligations since the growth in GDP results in higher tax revenues for the government.
- **Rate of Inflation**
 - Sovereign debts are susceptible to changes in the rate of inflation, and an increase in inflation will affect a country's ability to finance its debt.
 - A high inflation rate points to structural problems in a country's finances, and it is likely to cause political instability as the public becomes dissatisfied with the increasing inflation.
- **External Debt**
 - Increasing debt levels translate to a higher risk of default, which may affect its ability to access funding from international lenders.
- **Economic Development**
 - Usually, once a country has reached a certain level of development or per capita income, it is considered less likely to default on its debt obligations.
- **History of Defaults**
 - A country that defaulted on its debt obligations in the past is considered to have a high sovereign credit risk by rating agencies.

- It means that countries with a record of defaults receive low ratings, making them less attractive to investors looking for low-risk investments.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to the Sovereign Credit Ratings, What are the factors that determine Sovereign Credit Ratings of any country?

1. Per Capita Income
2. External Debt
3. History of defaults
4. GDP Growth

Which of the options given above are correct?

- (a) 1 and 2 only (b) 1, 2 and 3 only
 (c) 1, 2 and 4 only (d) 1, 2, 3 and 4

Answer: (d)

Descriptive Question

Q. How do sovereign credit ratings impact India's global economic standing? Discuss in light of CareEdge Global's recent rating action on India. [15 marks] [250 words]

INITIATIVES RELATED TO THE AGRICULTURAL AND ANIMAL HUSBANDRY PROJECTS

Why in News: Prime Minister laid foundation stone for the agricultural and animal husbandry sector in Washim, Maharashtra.

Key Details



PM-KISAN Samman Nidhi

- In line with the commitment of empowering farmers, the government disbursed the 18th installment of the PM-KISAN Samman Nidhi to around 9.4 crore farmers. With the 18th installment release.
- PM Kisan is a Central Sector scheme with 100% funding from Government of India.
- It has become operational from 1.12.2018.
- Under the scheme an income support of 6,000/- per year in three equal installments will be provided to all land holding farmer families.
- Definition of family for the scheme is husband, wife and minor children.
- State Government and UT administration will identify the farmer families which are eligible for support as per scheme guidelines.
- The fund will be directly transferred to the bank accounts of the beneficiaries.

Namo Shetkari Mahasanman Nidhi Yojana (NSMNY)

- Prime Minister launched the 5th installment of NaMo Shetkari Mahasanman Nidhi Yojana disbursing about Rs 2,000 crore.
- Scheme of Maharashtra government.
- Under this scheme an amount of Rs. 6000/- will be transferred annually in three equal instalments.
- Farmers are benefited through Direct Benefit Transfer (DBT).
- **Eligibility**
 - Cultivable land holding farmers families (comprising of husband, wife and minor children) having land holding on dated 01.02.2019 are eligible for both PM KISAN & NSMNY scheme.
 - Farmers which are eligible for PM Kisan Yojana will be eligible for the benefit of Nammo Shetkari Mahasanman Nidhi Yojana.
- **Exclusions**
 - Same as PM-KISAN including Non-Resident Indians (NRIs).

Agriculture Infrastructure Fund (AIF) Scheme

- Prime Minister dedicated to the nation under the Agriculture Infrastructure Fund (AIF).
- The major projects include custom hiring centers, primary processing units, warehouses, sorting and grading units, cold storage projects, and post-harvest management projects among others.
- AIF scheme was expanded in August 2024
- AIF scheme’s expansion aims to strengthen agricultural infrastructure nationwide and provide robust support to the farming community by broadening the scope of eligible projects, introducing additional supportive

measures, and fostering a more comprehensive agrarian infrastructure ecosystem.

Farmer Producer Organisation (FPO)

- Prime Minister dedicated Farmer Producer Organizations (FPOs)
- A Producer Organisation (PO) is a legal entity formed by primary producers, viz. farmers, milk producers, fishermen, weavers, rural artisans, craftsmen.
- Farmers Producer Organisation (FPO) is one type of PO where the members are farmers.

Unified Genomic Chip and Indigenous Sex Sorted Semen

- Prime Minister launched the Unified Genomic Chip for cattle and indigenous sex-sorted semen technology.
- **Indigenous Sex Sorted Semen**
 - Sex sorted semen is very effective in breed improvement and till now it was manufactured by multinational companies.
 - Under the Prime Minister’s ‘Make in India’ and ‘Atmanirbhar Bharat’ initiative, the National Dairy Development Board under the Department of Animal Husbandry and Dairying, has developed the indigenous technology of sex sorted semen worth Rs. 250.
 - This initiative aims to increase the availability of sex sorted semen at affordable prices to farmers and reduce the cost by around Rs 200 per dose.
- **Unified Genomic Chip**
 - Genomic chip is based on DNA which proves to be very effective in genetic improvement of the cattle.
 - Unified Genomic Chip, GAU CHIP for indigenous cattle and MAHISH CHIP for buffaloes, have been developed along with genotyping services.
 - This genomic chip will prove beneficial in the direction of genetic improvement of the livestock which will be beneficial for the farmers.
 - With the implementation of genomic selection, young high-quality bulls can be identified at an early age.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. With reference to PM KISAN Samman Nidhi, which of the following statements are correct?
1. PM Kisan is Central Sector Scheme.
 2. All person who paid income tax in last assessment year are not eligible.

3. It receives 100% funding from Government of India.

Which of the options given above are correct?

- (a) 2 and 3 only (b) 1 only
 (c) 1 and 2 only (d) 1, 2 and 3

(d) :Answer

Descriptive Question

Q. Discuss the significance of recent government initiatives like PM-KISAN, AIF and sex sorted semen technology in improving farmers welfare. [10 marks] [150 words]

INDIA'S FOREX RESERVES

Why in News: India becomes fourth nation to cross 700 billion dollar in forex reserves.

Key Details

- India has become the fourth economy in the world to surpass 700 billion US dollars in foreign reserves, joining China, Japan, and Switzerland.
- India's foreign exchange reserves surged by 12.588 billion dollars to touch a new all-time high of 704.885 billion dollars for the week ending September 27.
- India's forex reserve are estimated to be enough to cover about one year of projected imports.

Reasons for Increased Forex Reserves

- India has been boosting its forex reserves since 2013, when foreign investors pulled out due to weak macroeconomic fundamentals.
- Since then, stricter control on inflation, higher economic growth as well as narrower fiscal and current account deficits have helped draw in foreign funds, boosting reserves.
- Foreign inflows hit \$30 billion so far this year. The recent increase was spurred by \$4.8 billion in dollar purchases by the RBI, and \$7.8 billion in valuation gains.
- **Valuation Gains:** The valuation gains were due to the decline in U.S. Treasury yields, a weaker dollar and the rise in gold prices.
- **Low Volatility of Rupee:** For several months, the RBI has intervened on both sides of the market to keep the rupee in a narrow trading range, which has made it the least volatile among emerging market currencies.
- **Surplus Balance of Payment:** India's reserves could reach \$745 billion by March 2026, as the country's balance of payments is likely to remain in a comfortable surplus, estimated at around \$40-50 billion annually.

Significance of Forex Reserves

- The sharp increase in forex reserves strengthened India's ability to cushion against global economic uncertainties and provides greater stability to its currency in the face of volatile international markets.
- Adequate forex reserves **reduces currency volatility** since RBI has adequate firepower to intervene if needed.
- It **adds to investor confidence** which reduces the risk of sudden capital outflows.
- **Stability of the Rupee:** Forex reserves help maintain stability in the domestic currency by allowing the RBI to intervene in the foreign exchange market.
- **Trade Balance and Imports:** Countries engaging in international trade may experience trade imbalances or current account deficits. Forex reserves help cover these deficits by providing the necessary foreign currency to settle international transactions.
- **Speculative Attacks and Contingencies:** Forex reserves act as a deterrent against speculative attacks on a country's currency.
- **Debt Servicing:** Countries often borrow funds from international sources, and they need to make periodic payments on this debt. Forex reserves play a crucial role in meeting these external debt obligations.
- **Interest Rates and Inflation:**
 - Adequate forex reserves give the central bank flexibility in managing interest rates and controlling inflation.
 - Reserves allow the central bank to pursue independent monetary policies without the fear of external pressures.

Case Study: China's Forex Reserves

- China has the largest forex reserves in the world.
- China has accumulated its massive foreign exchange reserves over a long period of time, through double surpluses – current account surplus and capital account surplus.
- China's holdings of \$3.3 trillion in foreign exchange reserves far exceed the internationally recognised reserve adequacy requirement.
- **Reason:** China keeps such large reserves for taking care of needs in old age. China's population is aging and will eventually need support once working is no longer an option.

PRELIMS SPECIAL

- Items in India's Foreign Exchange Reserves (in decreasing order)
 - Foreign Currency Assets
 - Gold
 - SDRs
 - Reserve Position in the IMF

- **Foreign Currency Assets excludes:**
 - SDR holdings of the Reserve Bank, as they are included under the SDR holdings
 - investment in bonds issued by IIFC (UK)
 - amounts lent under the SAARC and ACU currency swap arrangements

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Arrange the Constituents of India’s Forex Reserves in decreasing order:

1. Foreign currency assets
2. Gold
3. Special Drawing Rights

Which of the options given above are correct?

- (a) 1, 2 and 3 (b) 1, 3 and 2
 (c) 2, 1 and 3 (d) 2, 3 and 1

Answer: (a)

Descriptive Questions

Q. Discuss the factors contributing to India’s rise in foreign exchange reserves and its significance for Indian economy. [10 marks] [150 words]

ALTERNATIVE INVESTMENT FUNDS

Why in News: The Securities and Exchange Board of India (Sebi) issued fresh guidelines on due diligence of investors in the alternative investment funds (AIFs) to prevent circumvention of norms and ever-greening of loans.

Key Details

- The market regulator has directed AIF managers to submit an undertaking by April 7, 2025 on the due-diligence. If the investments do not satisfy the due diligence, they will have to report such investments to custodians before the April 7, 2025 deadline.
- The due-diligence framework includes detailing investments in AIFs where the sponsor or manager is RBI regulated or has investors who are regulated by RBI and contribute 25 per cent or more of the corpus.
- If an investor of the scheme is an AIF, or a fund set up outside India or in International Financial Services Centres in India, then the criteria check for investor(s) regulated by RBI shall be carried out on a look through basis,” said Sebi.
- Further, to curb misuse of the QIB route, the market

watchdog has specified checks. These are to prevent AIFs from facilitating the benefits of QIBs to investors who otherwise are ineligible for the QIB status of their own.

- Due diligence has been mandated for schemes where investors from the same group contribute 50 per cent or more to the corpus before they avail the benefits of QIB status.
- Sebi has also specified due-diligence in case of schemes where 50 per cent or more corpus is from investors from countries bordering India or the beneficial owners are from land-bordering countries. If such an AIF scheme holds 10 per cent or more in equity or equity linked securities of an investee company, then that too will have to be reported to the custodians within 30 days of investments.
- Investors from land-bordering countries are allowed to invest only after the approval of the government.
- Additionally, custodians will have to compile the data and submit it to Sebi by May 7, 2025.

PRELIMS SPECIAL

Alternate Investment Funds

- Alternative Investment Fund is a special investment category that differs from conventional investment instruments. It is a privately pooled fund. Generally, institutions and HNIs invest in AIFs as substantial investments are required.
- These investment vehicles adhere to the SEBI (Alternative Investment Funds) Regulations, 2012. AIFs can be formed as a company, Limited Liability Partnership (LLP), trust, etc.

Categories of Alternative Investment Funds (AIFs) according to SEBI:

- Category I: Mainly invests in start-ups, SME’s or any other sector which Govt. considers economically and socially viable.
- Category II: These include Alternative Investment Funds such as private equity funds or debt funds for which no specific incentives or concessions are given by the government or any other Regulator
- Category III: Alternative Investment Funds such as hedge funds or funds which trade with a view to make short term returns or such other funds which are open ended and for which no specific incentives or concessions are given by the government or any other Regulator.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following pairs regarding Alternative Investment Funds

Category	Alternative Investment Funds
Category I	Mainly invests in Start-ups

Category II Mainly private equity funds or debt funds

Category III Mainly hedge funds

How many of the above pairs are correct?

(a) Only one (b) Only two

(c) All three (d) None

Answer: (c)

ALL INDIA RURAL FINANCIAL INCLUSION SURVEY - 2021-2022

Why in News: NABARD has published the findings from its second All India Rural Financial Inclusion Survey (NAFIS) for 2021-22, which offers primary data based on a survey of 1 lakh rural households, covering various economic and financial indicators in the post-COVID period.

About NAFIS 2021-22

- NABARD All-India Rural Financial Inclusion Survey (referred to as NAFIS 2021-22) is a national-level survey commissioned by the Department of Economic Analysis & Research (DEAR), National Bank for Agriculture & Rural Development (NABARD), Mumbai.
- The survey covered all States of the country and Union Territories of Jammu & Kashmir (J&K) and Ladakh.
- It offers a comprehensive overview of the status of rural population in terms of two distinct, yet interconnected themes including livelihood and financial inclusion.
- Access to financial products and services among poor and vulnerable groups has been recognised as an important aspect of inclusive growth. However, any programme targeting at inclusive growth would be incomplete without strengthening the livelihoods of the poor.
- NAFIS offers detailed information about aspects such as savings, credit, insurance and pension, remittances, and financial literacy.
- The survey also brings out some pertinent insights on factors influencing financial decisions of the households, and the level of financial knowledge, attitude and behaviour among adult members.

Strengthening Rural Population: Insights from the NAFIS 2021-22

- **Increase in Average Monthly Income**
 - The average monthly income of households saw a substantial rise of 57.6% over a five-year period.
 - For agricultural households, cultivation was the main income source, making up about one-third of their monthly earnings, followed by government or private services contributing one-fourth share, wage labor (16%), and other enterprises (15%).
- **Rise in Average Monthly Expenditure**
 - The average monthly expenditure of rural households rose significantly.
 - Agricultural households demonstrated both higher income and expenditure levels than non-agricultural households.
- **Increase in Financial Savings**
 - The annual average financial savings of households increased.
 - Agricultural households outperformed non-agricultural ones in terms of savings, with 71% of agricultural households reporting savings during the reference period, compared to 58% of non-agricultural households.
- **Kisan Credit Card (KCC)**
 - The Kisan Credit Card (KCC) has emerged as a key tool for promoting financial inclusion in the rural agricultural sector, showing substantial growth in coverage over the past five years.
 - 44% of agricultural households were found to possess a valid Kisan Credit Card (KCC).
- **Insurance Coverage**
 - The percentage of households with at least one member covered by any form of insurance increased significantly.
 - Agricultural households outperformed their non-agricultural counterparts by a margin of roughly 13 percentage points.
 - Among different types of insurance, vehicle insurance was the most prevalent, with 55% of households covered.
 - Life insurance coverage extended to 24% of households, with agricultural households showing slightly higher penetration (26%) compared to non-agricultural ones (20%).
- **Pension Coverage**
 - Pensions significantly enhance recipients' quality of life by offering financial support and reducing dependency on others, thereby boosting their self-worth and confidence.
 - The percentage of households with at least one member receiving any form of pension (such as old age, family, retirement, or disability) increased from 18.9% in 2016-17 to 23.5% in 2021-22.
- **Debt**
 - The proportion of households who reported to have outstanding.
 - The proportion of agricultural households that took loans from institutional sources only increased.
 - The proportion of Agri-households that took any loan from non-institutional sources only decreased.

Financial Literacy

- The percentage of respondents demonstrating good financial literacy increased by 17 percentage points.
- The share of food in the consumption basket of households declined.
- Average size of landholding declined from 1.08 hectare in 2016-17 to 0.74 hectare in 2021-22.

Significance

- The NAFIS 2021-22 results highlight the remarkable strides made in rural financial inclusion since the last survey in 2016-17.
- Rural households have experienced notable improvements in income, savings, insurance coverage, and financial literacy.
- The Government welfare schemes like Pradhan Mantri Kisan Samman Nidhi, Pradhan Mantri Kisan MaanDhan Yojana, Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Pradhan Mantri Awas Yojana-Gramin (PMAY-G), Pradhan Mantri Gram Sadak Yojana (PMGSY), Deendayal Antyodaya Yojana- National Rural Livelihoods Mission (DAY NRLM), Deendayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) have significantly contributed to improving the lives of the rural population.

Way Forward

As access to financial services continues to expand, there is a bright outlook for the economic empowerment of these households. The survey underscores the importance of ongoing support and investment in rural development, paving the way for a more prosperous and financially secure future for India’s rural population.

PRELIMS SPECIAL

About NABARD

- National Bank for Agriculture and Rural Development (NABARD) was established on 12 July 1982 by an Act of the Parliament.
- It is India’s apex development bank
- NABARD, as a Development Bank, is mandated for providing and regulating credit and other facilities for the promotion and development of agriculture, small scale industries, cottage and village industries, handicrafts and other rural crafts and other allied economic activities in rural areas with a view to promoting integrated rural development and securing prosperity of rural areas, and for matters connected therewith or incidental thereto.
- **Vision:** Development Bank of the Nation for Fostering Rural Prosperity.
- **Ownership:** NABARD is wholly owned by Government of India.

NOBEL PRIZE IN ECONOMIC SCIENCES 2024

Why in News: Nobel Prize in Economics 2024 is awarded to Daron Acemoglu, Simon Johnson and James A. Robinson.

Key Details

- The three economists “have demonstrated the importance of societal institutions for a country’s prosperity,”
- Societies with a poor rule of law and institutions that exploit the population do not generate growth or change for the better. The laureates’ research helps us understand why.
- Acemoglu and Johnson work at the Massachusetts Institute of Technology and Robinson conducts his research at the University of Chicago.

About the Research

- The researchers have argued that when Europeans colonised large parts of the globe, the institutions in those societies changed. This was sometimes dramatic, but did not occur in the same way everywhere.
- In some places the aim was to exploit the indigenous population and extract resources for the colonists’ benefit. In others, the colonisers formed inclusive political and economic systems for the long term benefit of European migrants.
- Reducing the vast differences in income between countries is one of our time’s greatest challenges. The laureates have demonstrated the importance of societal institutions for achieving this.
- The “institutions” that the laureates talk about as crucial to long-term economic prosperity are nothing but the various rules, which could be either explicit laws or implicit social norms that govern human interaction in society. Such institutions may also include laws that protect citizens from expropriation by the government.
 - For example, the rapid economic growth of China and India since their economic liberalisation in the late 1970s and the early 1990s, respectively, are good examples of countries prospering soon after a significant change in the nature of the institutions or the “rules of the game” that governed their economies.
 - Moreover, structural reforms that further improve the quality of institutions are thus crucial if these economies are to achieve living standards similar to those of high-income developed countries in the West.
 - However, the rise of illiberal democracies with protectionist economic policies in recent years shows that liberal institutions that work for the upliftment of the many and development not just for a few, are now under severe threat.

- A democracy driven by short-term populist policies can be as “extractive” as an autocracy that serves the interests of a narrow elite that is close to people in power.

About Nobel Prize in Economics

- The economics prize is formally known as the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel.
- The central bank established it in 1968 as a memorial to Nobel, the 19th-century Swedish businessman and chemist who invented dynamite and established the five Nobel Prizes.
- Though Nobel purists stress that the economics prize is technically not a Nobel Prize, it is always presented together with the others on December 10, the anniversary of Nobel’s death in 1896.
- The Nobel Prizes consist of a diploma, a gold medal and a one-million-dollar lump sum.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following economists:

1. Daron Acemoglu
2. Simon Johnson
3. James A. Robinson

How many of the above economists were awarded the Nobel Prize in Economics 2024 ?

- (a) Only one (b) Only two
(c) All three (d) None

Answer: (c)

THE FIFTH GLOBAL STANDARDS SYMPOSIUM

Why in News: The Fifth Global Standards Symposium (GSS-24) was recently held in New Delhi, first time in the Asia-Pacific region.

Key Details

- The Global Standards Symposium (GSS) provides a high-level forum for discussion and coordination open both to members and non-members.
- It was organized by the International Telecommunication Union (ITU), brought together about 1500 leading policymakers and experts including global ministers from across the globe.
- It aimed to discuss the future of digital transformation and the critical role of international standards in enabling the next wave of emerging technologies.

- **Theme of GSS-24:** Charting the Next Digital Wave: Emerging Technologies, Innovation, and International Standards
- ITU-GSS will set the stage for the **World Telecommunication Standardization Assembly (WTSA)**, taking place from 15 to 24 October 2024 in New Delhi, India. This event, organized by the International Telecommunication Union (ITU) and hosted by Department of Telecommunication (DoT) will be held for the first time in India and the Asia-Pacific.
- The symposium, addressed the critical need for a cohesive and forward-looking approach to the governance and standardization of emerging technologies.
- GSS serves as a high-level forum, offering a platform for discussion and coordination on the most pressing issues in technology and standardization.
- The symposium had a high-level segment that facilitated cooperation among industry leaders and ministers, focusing on the future of innovation and digital public infrastructure.
- The event called for robust international standards for AI governance.
- The symposium stressed the need to bridge the standards gap between developed and developing nations, ensuring equitable access to technology for all.
- The event also featured an **AI Standards Summit**, which highlighted how consensus-based standards can spark innovation across various sectors, enhancing technological advancements.

Key Outcomes from the Symposium

- **Driving Digital Transformation:** The Outcome Document underscores international standards as the cornerstone for digital transformation globally.
- **Uniting Global Leaders:** GSS-24 brought together industry giants and policymakers to discuss the impact of standards on cutting-edge technologies.
- **Innovation Through Standards:** The AI Standards Summit showcased how consensus-based standards can spark innovation across various sectors, enhancing technological advancements.
- **Bridging the Gap:** The symposium stressed the need to bridge the standards gap between developed and developing nations, ensuring equitable access to technology for all.
- **Harnessing AI and the Metaverse:** GSS-24 highlighted the transformative potential of AI and the metaverse in public services and urban planning, urging the ITU to strengthen initiatives like the Global Initiative on Virtual Worlds.
- **Accelerating SDGs:** The event underscored the vital role of international standards in achieving the UN Sustainable Development Goals, paving the way for sustainable digital transformation.

- **High-Level Dialogues:** An unprecedented high-level segment fostered collaboration among industry leaders and ministers, focusing on the future of innovation and digital public infrastructure.
- **Establishing AI Governance:** GSS-24 called for robust international standards for AI governance, encouraging initiatives like AI for Good and the AI for Skills Coalition.
- **Empowering Open Source:** The symposium recognized the critical role of open-source software in driving innovation, advocating for collaboration with developers to create a more inclusive tech ecosystem.
- **Celebrating Smart Cities:** GSS-24 acknowledged cities excelling in smart and sustainable initiatives, reinforcing the commitment to the United for Smart Sustainable Cities (U4SSC) initiative, led by the ITU, UNECE, and UN-Habitat.

PRELIMS SPECIAL

International Telecommunication Union (ITU)

- ITU is the **United Nations specialized agency** for information and communication technologies (ICTs).
- The Organization is made up of a membership of 194 Member States and more than 1000 companies, universities and international and regional organizations.
- **Headquartered in Geneva**, Switzerland, and with regional offices on every continent,
- ITU is the **oldest agency in the UN family** – connecting the world since the dawn of the telegraph in 1865.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. The 5th Global Standards Symposium was recently held in New Delhi, It was organized by?
- International Telecommunication Union
 - World Health Organization
 - World Economic Forum
 - None of the Above

Answer: (a)

USE OF ARTIFICIAL INTELLIGENCE (AI) IN THE FINANCIAL SECTOR

Why in News: RBI Governor cautioned that heavy reliance on artificial intelligence (AI) could lead to concentration risks in the financial sector.

Key Details

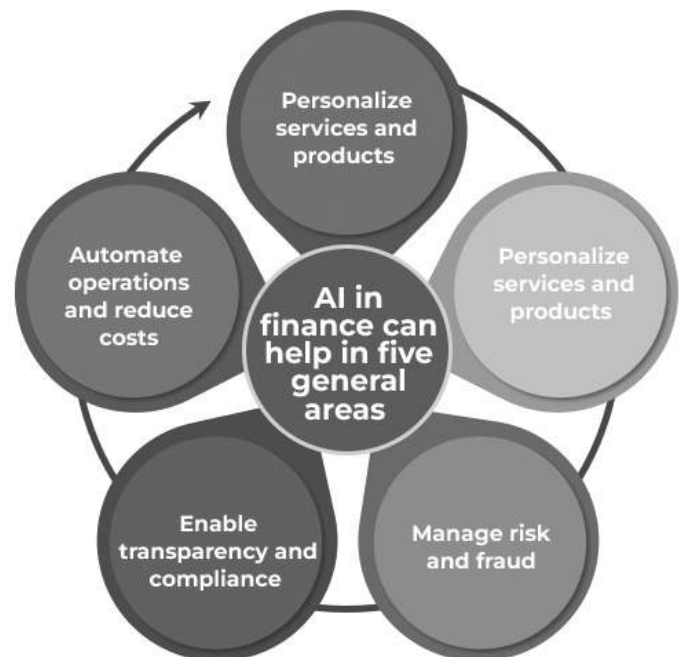
- AI and machine learning are increasingly being integrated into financial services, enhancing efficiency but also raising concerns about cybersecurity, transparency, and regulatory oversight.

- He expressed concern that the growing use of AI could enable a few technology providers to dominate the market, creating systemic vulnerabilities.
- The heavy reliance on AI can lead to concentration risks, especially when a small number of tech providers dominate the market.
- AI introduces new vulnerabilities, including increased susceptibility to cyberattacks and data breaches.
- The opacity of AI systems further complicates matters, making it difficult to audit or interpret the algorithms driving financial decisions.
- AI and Big Tech offer significant advantages, financial institutions must ensure they do not become overly dependent on these technologies.
- He urged financial institutions to remain vigilant, highlighting the need for a balanced approach in leveraging AI's potential while addressing its inherent risks.
- With the rapid advancements in technology, the RBI is focused on ensuring that the financial sector remains resilient to both traditional risks and the emerging risks posed by AI and Big Tech.

Artificial Intelligence (AI) in Finance

- Artificial intelligence (AI) in finance helps drive insights for data analytics, performance measurement, predictions and forecasting, real-time calculations, customer servicing, intelligent data retrieval, and more.
- It is a set of technologies that enables financial services organizations to better understand markets and customers, analyze and learn from digital journeys, and engage in a way that mimics human intelligence and interactions at scale.

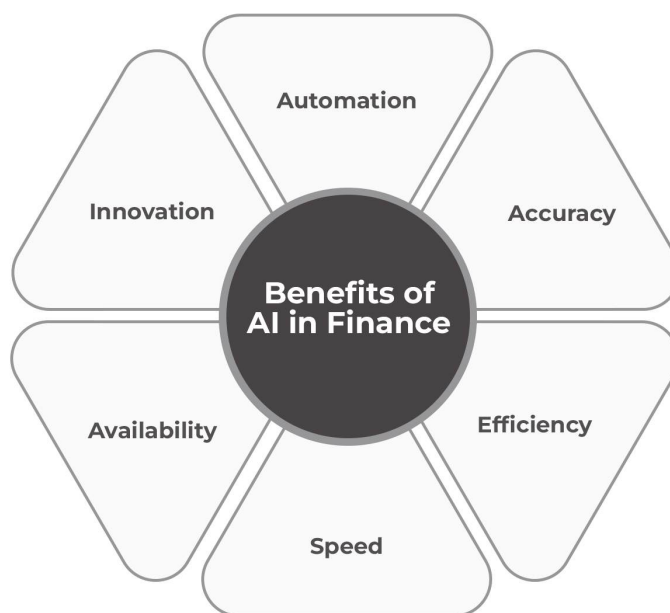
Use of AI in Financial Sector



Applications: How AI can Solve Real Challenges in Financial Services?

- **Speech recognition:** Convert speech to text to improve your service with insights from customer interactions, such as contact center sales calls, and drive better customer service experiences.
- **Sentiment analysis:** Identify sentiment in a given text with prevailing emotional opinion using natural language AI, such as investment research, chat data sentiment, and more.
- **Anomaly detection:** Detect anomalies, such as fraudulent transactions, financial crime, spoofing in trading, and cyber threats.
- **Recommendations:** Deliver highly personalized recommendations for financial products and services, such as investment advice or banking offers, based on customer journeys, peer interactions, risk preferences, and financial goals.
- **Translation:** Make your content, such as financial news, and apps multilingual with fast, dynamic machine translation at scale to enhance customer interactions and reach more audiences wherever they are.
- **Document processing:** Extract structured and unstructured data from documents and analyze, search and store this data for document-extensive processes, such as loan servicing, and investment opportunity discovery.
- **Image recognition:** Derive insights from images and videos to accelerate insurance claims processing by assessing damage to property such as real estate or vehicles, or expedite customer onboarding with KYC-compliant identity document verification.
- **Conversations:** Delight your customers with human-like AI-powered contact center experiences, such as banking concierge or customer center, to lower costs, and free up your human agents' time. Transform personal finance and give customers more ways to manage their money by bringing smart, intuitive experiences to your apps, websites, digital platforms, and virtual tools.
- **Data science and analytics:** Access a complete suite of data management, analytics, and machine learning tools to generate insights and unlock value from data for business intelligence and decision making.
- **Predictive modeling:** Use data customer, risk, transaction, trading or other data insights to predict specific future outcomes with high degree of precision. These capabilities can be helpful in fraud detection, risk reduction, and customer future needs' prediction.
- **Cybersecurity:** Automate aspects of cybersecurity by continuously monitoring and analyzing network traffic to detect, prevent, and respond to cyberattacks and threats.
- **Generative AI:** Build new AI-powered search and conversational experiences by creating, recommending, synthesizing, analyzing, and engaging in a natural and

responsible way. Watch this demo to see how a financial services firm is transforming the search experience for employees.



Way Forward: The Future of AI in Financial Services

- AI will help drive financial services growth.
- Many organizations have gone digital and learned new ways to sell, add efficiencies, and focus on their data.
- Going forward, they will need to personalize relationship-based customer engagement at scale.
- AI plays a key role in helping drive tailored customer responses, make safer and more accountable product and service recommendations, and earn trust by broadening concierge services that are available when customers need them the most.
- In addition, financial institutions will need to build strong and unique permission-based digital customer profiles; however, the data they need may exist in silos.
- By breaking down these silos, applying an AI layer, and leveraging human engagement in a seamless way, financial institutions can create experiences that address the unique needs of their customers while scaling efficiently.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Consider the following statements regarding use of Artificial Intelligence in the financial sector:
1. Making personalized services and products
 2. Automate operations and reduce costs
 3. Enable transparency and compliance

How many of the above statements are correct?
 (a) Only one (b) Only two
 (c) All three (d) None
 Answer: (c)

- The Responsible Capitalism Ecosystem employees, suppliers, partners, communities, shareholders, executives and customers together comprise the ecosystem in which a company operates.
- Attending to the needs of each and every one of these groups creates a virtuous circle in which all stakeholders benefit.

RESPONSIBLE CAPITALISM

Why in News: Recently, Finance Minister Nirmala Sitharaman emphasises the need for responsible capitalism and highlights India’s progress towards becoming a developed country by 2047.






Key Details

- She stated that challenges for large economies are not just to achieve and sustain high growth but also to bridge gaps and create opportunities for all.
- She also highlighted India’s recently-announced centres of excellence in artificial intelligence in healthcare, agriculture and sustainable cities as potential areas of bilateral collaboration.

About Responsible Capitalism

- Leading and managing companies in a manner that is sustainable for the benefit of all stakeholders: employees, suppliers, partners, customers, and the wider communities in which they operate as well as for the benefit of shareholders and executives.

Need for Responsible Capitalism

<p>Responsibility is the missing third leg: Market share and financial profit are the two main pillars of today’s version of capitalism. ‘Social Responsibility’, the third leg of our theoretical stool, exists but it is weak.</p>	
<p>Tax has become optional: The secondary assumption behind today’s form of capitalism appears to be that tax is optional. Multinationals have been enjoying an unprecedented game of tax arbitrage - playing one nation’s tax regime off against another to minimise overall tax and avoiding national corporate tax in the process.</p>	
<p>Government and business have ignored those left behind by globalisation: Globalisation has decimated traditional Western manufacturing communities and generations of governments have either let it happen or their efforts to assist have been inadequate. The result of this has been a wave of anti-capitalist sentiment and the rise of both protectionist and socialist politicians.</p>	
<p>AI and Automation will make globalisation look like a picnic: Many academics and industry pundits have forecast that half of today’s jobs will be replaced by machines within the next 10-20 years.</p>	
<p>Increase in Wealth Gap: Over the last few decades, the rich have become richer while an increasing proportion of the population has become poorer. The gap is now dangerously and unconscionably high.</p>	

Difference between Financial Capitalism and Responsible Capitalism

What will it take to make capitalism responsible?

Financial capitalism		Responsible capitalism
<i>according to Milton Friedman</i>		
Making a profit	Purpose of the company	Social above all, creating value for employees, clients, communities, civil society
Only if they do not interfere with business	Social and environmental issues	They are the only way to make capitalism sustainable
The short term, the goal is growth	Global	The long term, to respond to social, ecological, and economic needs
Only one priority: to not inhibit growth	Rules and regulations	Adapt legislation to environmental and social issues

LIFESTYLE FOR ENVIRONMENT INITIATIVE

Why in News: Ministry of Environment, Forest and Climate Change has recently notified Ecomark Rules under Lifestyle for Environment initiative.

Key Details

- In alignment with the 'LiFE' (Lifestyle for Environment) Mission announced in 2021, the new Ecomark Rules replaces the Ecomark scheme of 1991.
- The scheme will encourage the demand for environment-friendly products aligning with the principles of 'LiFE', promote lower energy consumption, resource efficiency and circular economy.
- The scheme seeks to ensure accurate labelling and prevent misleading information about products.
- Products accredited under the Ecomark Scheme will adhere to specific environmental criteria, ensuring minimal environmental impact. It will build consumer awareness of environmental issues and encourage sustainable consumption. It will also motivate manufacturers to shift towards environmentally friendly production.
- The scheme will be implemented by the Central Pollution Control Board (CPCB) in partnership with the Bureau of Indian Standards (BIS).
- It aligns with global sustainability goals and reflects the government's commitment to conservation and protection of the environment.

Criteria of Ecomark

- The criteria are based on the cradle-to-grave approach, i.e. from raw material extraction to manufacturing and to disposal.
- The basic criteria cover broad environmental levels and aspects, but are specific at the product level.
- A product is examined in terms of the following main environmental impacts :
 - that they have substantially less potential for pollution than other comparable products in production, usage and disposal.
 - that they are recycled, recyclable, made from recycled products or bio- degradable, where comparable products are not;

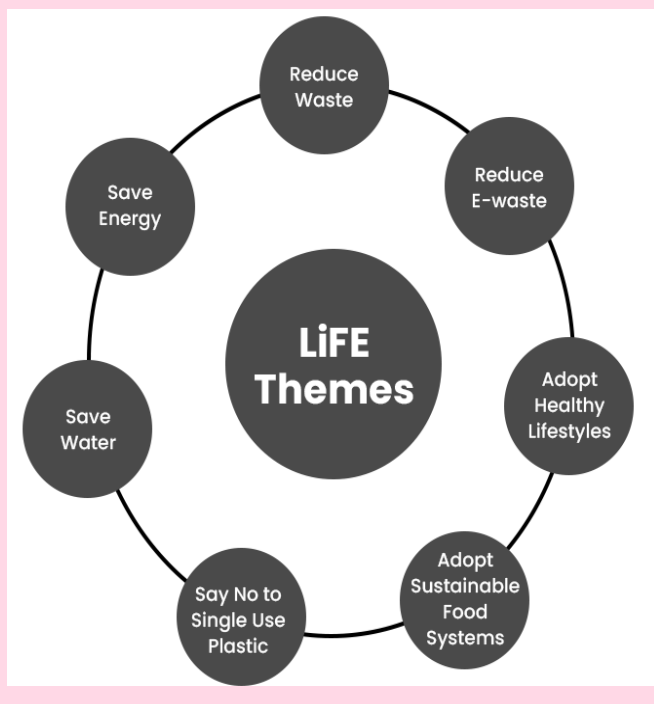
- that they make significant contribution to saving non-renewable resources including non-renewable energy sources and natural resources compared with comparable products;
- that the product must contribute to a reduction of the adverse primary criteria which has the highest environmental impact associated with the use of the product, and which will be specifically set for each of the product categories.
- Ecomark Criteria of the Product Categories covered under the scheme.
 - Soaps & Detergents
 - Paper
 - Food Items
 - Lubricating Oils
 - Packaging Materials
 - Architectural Paints and Powder Coatings
 - Batteries
 - Electrical/Electronic Goods
 - Food Additives
 - Wood Substitutes
 - Cosmetics
 - Aerosol Propellants
 - Plastic Products
 - Textiles
 - Fire-extinguisher
 - Leather

Objectives of Eco Mark

- To provide incentives for importers and manufacturers to reduce the adverse environmental impact of products.
- To reward companies for their initiatives taken under this scheme.
- To provide information to consumers, take account of environmental factors in their purchase decisions and become environmentally responsible in their daily lives.
- To encourage citizens to purchase products with less harmful environmental impacts
- To promote the sustainable management of resources and improve the quality of the environment.

Mission LiFE

- LiFE is a public movement to mobilize individuals to become Pro-Planet People.
- An India-led global mass movement to nudge individual and community action to protect and preserve the environment.
- Mission Lifestyle for Environment recognises that Indian culture and living traditions are inherently sustainable.
- The importance of conserving our precious natural resources and living in harmony with nature are emphasised in our ancient scriptures.
- The need of the hour is to tap into that ancient wisdom and spread the message to as many people as possible.
- Mission LiFE seeks to channel the efforts of individuals and communities into a global mass movement of positive behavioural change.



Descriptive Question

Q. Discuss the key features and criteria of the recently notified Ecomark Rules under LiFE initiative. [10 marks] [150 words]

RISING TEMPERATURES IN ANTARCTIC PENINSULA

Why in News: Plants cover across the Antarctic Peninsula has increased more than 10 times over since 1986 due to rising temperatures.

Key Details

- Plant cover across the Antarctic Peninsula, a long, mountainous extension of Antarctica that points north towards South America, has increased more than 10 times over the past few decades due to rising temperatures, a new study says.
- The analysis, published in the journal *Nature Geoscience*, was carried out by researchers at the universities of Exeter and Hertfordshire in England, and the British Antarctic Survey.

How quickly is Antarctica warming?

- A 2023 study published in the journal *Nature Climate Change* found that the continent is warming twice as fast as the global average, at a rate of between 0.22 degrees Celsius and 0.32 degrees Celsius per decade currently.
- The Intergovernmental Panel on Climate Change (IPCC), the United Nations body that advances scientific knowledge about climate change, has estimated that the Earth as a whole is warming at the rate of 0.14-0.18 degrees Celsius per decade.
- The situation in the Antarctic Peninsula is worse than in the rest of Antarctica — it is warming five times faster than the global average. The Antarctic Peninsula is now almost 3 degrees Celsius warmer on average than in 1950.
- Antarctica has also been experiencing record-breaking heatwaves, especially during the height of its winter season (which is summer in the northern hemisphere).
- In March 2022, Antarctica experienced its most intense heatwave — temperatures in East Antarctica soared to 39 degrees Celsius above normal.

What has the study found?

- **Increased Vegetation:** Researchers used satellite imagery and data to conclude that the extent of vegetation in the Antarctic Peninsula has increased 14 times in just 35 years.
- **Rapid decrease in Sea Ice:** Rising temperatures in Antarctica have also resulted in a rapid decrease in the extent of sea ice — the 2024 extent was the second smallest of the satellite record, only slightly more than the record low set in 2023, the US National Oceanic and

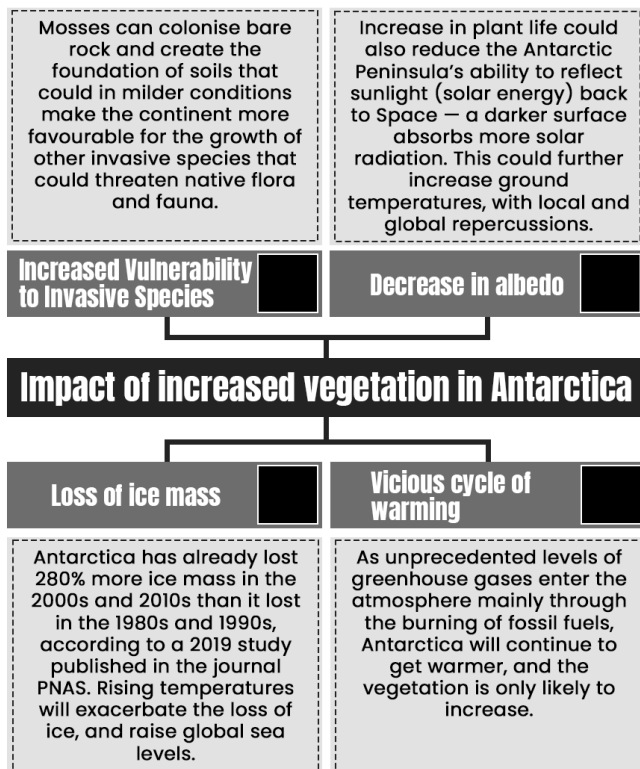
EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. What is the main objective of Mission LiFE?
- Promoting technological innovation in space sector.
 - Promoting global trade of Pharmaceutical products.
 - Creating Pro-Planet people through sustainable actions.
 - None of the above.

Answer: (c)

Atmospheric Administration (NOAA) said on Tuesday. Warmer open seas may be leading to wetter conditions that favour plant growth, according to the study.



EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. What could be the impact of rising temperatures in the Antarctic Peninsula?
1. Increased vegetation in Antarctic Peninsula.
 2. Rapid decrease in sea rise.
 3. Decrease in albedo.

Choose the correct option from following

- (a) 1 and 2 only (b) 2 and 3 only
 (c) 2 only (d) 1, 2 and 3

(d) :Answer

Descriptive Question

Q. Examine the causes and implications of rising temperatures in the Antarctic Peninsula. [10 marks] [150 words]

GREENWASHING

Why in News: Recently, Central Consumer Protection Authority (CCPA) has issued guidelines for Prevention and Regulation of Greenwashing and Misleading Environmental Claims to address the issue of greenwashing and misleading environmental claims.

Key Details

- The new norms would complement the existing Guidelines for Prevention of Misleading Advertisements and Endorsement for Misleading Advertisements, framed in 2022, which deal with false or exaggerated claims in advertisements in general.
- These Guidelines seek to foster truthful practices where environmental claims are both truthful and meaningful, thus enhancing consumer trust and encouraging sustainable business practices.
- Based on the recommendations of the committee the Department placed the Draft Guidelines for Greenwashing for public comments on 20th February 2024.
- The guidelines will apply to all environmental claims made by manufacturers, service providers or traders whose goods, products or services is the subject of an advertisement, or to an advertising agency or endorser whose service is availed for the advertisement of such goods, products or services.
- The notable suggestions include:

- Clear Definitions:** This provide clear definitions of terms related to greenwashing and environmental claims, ensuring that both businesses and consumers have a common understanding.
- Transparency Requirements:** Manufacturers and service providers are required to substantiate their environmental claims with credible evidence. This includes providing detailed information on the methodology and data used to support such claims.
- Prohibition of Misleading Terms:** The use of vague or misleading terms such as "eco-friendly," "green," and "sustainable" without proper substantiation is sought to be prohibited.
- Third-Party Certifications:** Third-Party Certifications are also accepted in substantiation of environmental claims.
- Adequate Disclosures:** The companies are required to provide clear and accessible disclosures of material information.

- **Objectives:**
 - The objective of these guidelines is to enhance consumer trust and encourage sustainable business practice for fostering truthful practices where environmental claims are both truthful and meaningful.
 - The guidelines are yet another step forward by the government to protect consumer interest. They explain what greenwashing means, as well as the dos and don'ts with respect to it.

PRELIMS SPECIAL

About Greenwashing

- It is a term that plays on the word "whitewashing" and refers to the marketing tactic where companies falsely claim or exaggerate the environmental benefits of their products or services, often using vague or unsubstantiated terms such as "natural," "eco-friendly," or "green."

About Central Consumer Protection Authority:	
Formation	2019
Type	Regulatory Body
Legal status	set up under Section 10(1) of the Consumer Protection Act, 2019
Headquarters	New Delhi
Owner	Ministry of Consumer Affairs, Government of India

- (c) Ignoring the disastrous ecological consequences while undertaking infrastructure development.
 - (d) Making mandatory provisions for environmental costs in a government project.
- Answer: (a)

THE MUDUMALAI TIGER RESERVE

Why in News: A survey of herpetofauna within the Mudumalai Tiger Reserve (MTR), led to the identification of 33 reptiles and 36 amphibians that were recorded from the region for the first time.

Key Details

- This initiative marked the first extensive herpetofauna survey in the park, leading to the discovery of numerous species previously unrecorded in the reserve
- Combined with previous studies, the total number of reptiles within MTR now stands at 55 species, while 39 amphibians species have been identified so far.
- The survey also recorded a healthy population of Mugger crocodiles within the reserve.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which one of the following best describes the term “greenwashing”?

- (a) A Conveying a false impression that a company’s products are eco-friendly and environmentally sound.
- (b) Non-inclusion of ecological/ environmental costs in the Annual Financial Statements of a country.

Species Recorded

Amphibians	Reptiles
Indraneil’s Night Frog (<i>Nyctibatrachus indraneili</i>)	Striped Coral Snake (<i>Calliophis nigrescens</i>)
Cave Dancing Frog (<i>Micrixalus spelunca</i>)	King Cobra (<i>Ophiophagus hannah</i>)
Star-eyed Bush Frog (<i>Raorchestes signatus</i>)	Malabar Pit Viper (<i>Craspedocephalus malabaricus</i>)
Coonore Bushfrog (<i>Raorchestes coonoorensis</i>)	Calamaria Reed Snake (<i>Liopeltis calamaria</i>)
Nilgiri Bush Frog (<i>Raorchestes tinniens</i>)	Nilgiri Burrowing Snake (<i>Plectrurus perrotetii</i>)
Nilgiris wart frog (<i>Minervarya nilagirica</i>)	Perrotet’s Mountain Snake (<i>Xylophis perrotetti</i>)
Beddome’s Leaping Frog (<i>Indirana beddomii</i>)	Nilgiri Dwarf Gecko
Suganthagiri Leaping Frog (<i>Indirana paramakri</i>)	Graceful Day Gecko
	Two-lined ground skink

PRELIMS SPECIAL

About Herpetofauna

- Amphibians and reptiles are conveniently known as “herpetofauna” for research purposes, although they are not closely related in biological evolution.
- The main difference between amphibians and reptiles is the amniotic egg. The lack of this feature determines the dependence of amphibians to water (or environmental humidity) at least during part of their development.
- On the other hand, protective membranes in the egg provide reptiles more independence from water.
- In any case, numerous “herps” have evolved remarkable

ecological and morphological adaptations to thrive in aquatic environments for at least some part of their lives.

Mudumalai National Park and Tiger Reserve

- Nestled in the Northwestern part of the Nilgiri Mountains in the Nilgiri district of the Southern state of **Tamil Nadu**, the Mudumalai National Park covers an area of 321 sq. km at an altitude of 850 to 1,250 m sharing boundaries with the states of Karnataka and Kerala.
- The Word ‘Mudumalai’ is a Tamil word with ‘Mudu’ meaning ancient or old and ‘Malai’ meaning Hill or Mountain.
- The National Park has been part of India’s first Biosphere Reserve, i.e. Nilgiri Biosphere Reserve since 1986 which is

also one of the most important parts of the Nilgiri Biosphere wildlife corridors and was declared a Tiger Reserve in the year 2007 with a buffer zone of approximately 368 sq. km.

- Also referred to as the Mudumalai Tiger Reserve, there are more than 110 tigers that are allowed to roam freely inside the reserve without any restriction.
- **Species:** The Reserve houses not only Asian Elephants and Tigers but also home to countless other endangered wildlife species like Leopard, Indian Giant Squirrel, Striped Hyena, Flying Lizard, Golden Jackal, Leopard Cat, Bonnet Macaque, Jungle Cat, Great Indian Rock Python, Grey Langur, Bee Species, Beetle Species, Indian Muntjac, Dholes, and many more.
- Mudumalai National Park connects the Eastern and Western Ghats.
- The **Moyar River** runs through the national park.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Moyar River flows through which of the following National Park?

- (a) Mudumalai National Park
- (b) Papikonda National Park
- (c) Sri Venkateswara National Park
- (d) Bandipur National Park

Answer: (a)

BARAK BHUBAN WILDLIFE SANCTUARY

Why in News: The National Green Tribunal's (NGT) eastern bench of Kolkata stays construction of road inside Assam's Barak Bhuban Wildlife Sanctuary in favour of a plea alleged that the work was carried out without due permissions under the Van (Sanrakshan Evam Samvardhan) Adhinyam 1980.

Key Details

- The order stated that unless and until there is sanction from the central government as required under Section 2 of Forest (Conservation) Act 1980, no construction shall be permitted within the Barak Bhuban Wildlife Sanctuary during the pendency of the present original application.

About Barak Bhuban Wildlife Sanctuary

- Spread over an area of 320 sq km between the Barak and Sonai rivers, the Assam government had approved creation of the Barak Bhuban Wildlife Sanctuary in July 2022.
- The sanctuary has eight recorded species of primates (slow loris, rhesus macaque, pig-tailed macaque, stump-

tailed macaque, Assamese macaque, capped langur, phayre's leaf monkey and hoolock gibbon) and is an important habitat for the king cobra snake.

National Green Tribunal

- The National Green Tribunal, established in 2010, is a specialised judicial body equipped with expertise solely for the purpose of adjudicating environmental cases in the country.
- Recognising that most environment cases involve multi-disciplinary issues which are better addressed in a specialised forum, the Tribunal was setup as per recommendations of the Supreme Court, Law Commission and India's international law obligations to develop national laws on environment and implement them effectively.
- The Tribunal is tasked with providing effective and expeditious remedy in cases relating to environmental protection, conservation of forests and other natural resources and enforcement of any legal right relating to environment.
- The Tribunal's orders are binding and it has power to grant relief in the form of compensation and damages to affected persons.

Composition of the Tribunal

- The Tribunal has a presence in five zones- North, Central, East, South and West. The Principal Bench is situated in the North Zone, headquartered in Delhi.
- The Central zone bench is situated in Bhopal, East zone in Kolkata, South zone in Chennai and West zone in Pune.
- The Tribunal is headed by the Chairperson who sits in the Principal Bench and has at least ten but not more than twenty judicial members and at least ten but not more than twenty expert members.

Jurisdiction

- Any person seeking relief and compensation for environmental damage involving subjects in the legislations mentioned in Schedule I of the National Green Tribunal Act, 2010 may approach the Tribunal.
- **The statutes in Schedule I are:**
 - The Water (Prevention and Control of Pollution) Act, 1974;
 - The Water (Prevention and Control of Pollution) Cess Act, 1977;
 - The Forest (Conservation) Act, 1980;
 - The Air (Prevention and Control of Pollution) Act, 1981;
 - The Environment (Protection) Act, 1986;
 - The Public Liability Insurance Act, 1991;
 - The Biological Diversity Act, 2002.
- Decisions of the Tribunal are binding. The Tribunal's orders are enforceable as the powers vested are the same as in a civil court under the Code of Civil Procedure, 1908.

- The Tribunal has powers to review its own decisions. If this fails, the decision can be challenged before the Supreme Court within ninety days.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Barak Bhuvan Wildlife Sanctuary is located in?

- (a) Sikkim
- (b) West Bengal
- (c) Assam
- (d) Meghalaya

(c) :Answer

Descriptive Question

Q. Discuss the role and significance of the National Green Tribunal (NGT) in environmental protection in India. [10 marks] [150 words]

KAIMUR WILDLIFE SANCTUARY

Why in News: The central government has given its in-principle approval for Bihar’s second tiger reserve in Kaimur district.

Key Details

- This decision follows a proposal from the Bihar government to develop the Kaimur Wildlife Sanctuary (KWLS) into a tiger reserve.
- The National Tiger Conservation Authority’s (NTCA) centre and technical committee gave its in principle approval.
- Valmiki Tiger Reserve (VTR) in Bihar’s West Champaran district was the only one till now.
- The decision came in response to the growing tiger population at VTR, which is now exceeding its capacity. The reserve is currently home to 54 tigers, surpassing its capacity of 45.
- Some tigers from VTR will be relocated to the forthcoming Kaimur Tiger Reserve to ensure sustainable management and an eco-friendly atmosphere in both reserves.
- Plans for the Kaimur Tiger Reserve include a buffer zone encompassing the Shergarh Fort, a major tourist attraction and 58 villages, which have been excluded from the core zone.
- Kaimur’s forests, covering an area of 1,134 square kilometres, are the largest in Bihar and boast the highest green cover in the state at 34%.
- These forests also connect to adjoining wildlife corridors in Jharkhand, Uttar Pradesh and Madhya Pradesh, further enhancing their significance as a tiger habitat.
- Kaimur Wildlife Sanctuary (KWLS) supports sizable populations of leopard, sloth bear, chital, sambar, wild pig, nilgai, and chowsingha, besides about 70 species of birds.

Kaimur Hills Region and Kaimur Wildlife Sanctuary (KWLS)

- The Kaimur Wildlife Sanctuary (WLS), located in southwestern Bihar, spans over 1500 km² and holds immense historical, cultural, socio-economic, and biodiversity significance.

- This sanctuary is a plateau situated between the Son River, bordering Jharkhand to the south, and the Karmanasa River, bordering Uttar Pradesh to the west.

- The Kaimur Hills, known for their invincibility, are home to two forts and the ancient **Mundeshwari Temple**, one of the oldest Hindu temples in India.

- The **Oraon tribe** is believed to have originated from this plateau.

- Kaimur Hills are renowned for their limestone, sandstone, and shales.

- The terrain of the Kaimur Wildlife Sanctuary is characterized by a large plateau intersected by seasonal streams that form narrow, elongated gorges, cliffs, and waterfalls.

- Perennial and seasonal streams originate from the Kaimur Hills, with large rocks dotting the landscape.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following protected area is home to the ancient Mundeshwari Temple?

- (a) Dudhwa National Park
- (b) Kaimur Wildlife Sanctuary
- (c) Manas National Park
- (d) None of the above

(b) :Answer

ETURNAGARAM WILDLIFE SANCTUARY

Why in News: According to recent reports, a rare weather event in Telangana’s Eturnagaram Wildlife Sanctuary resulted in the uprooting of over 1,00,000 trees.

Key Details

- According to forest officials, trees like neem, banyan, peepal and others bore the brunt of nature’s fury. Leopards have been spotted in the sanctuary spread over 81,200 hectares though they seldom venture to this area.
- This is a very rare incident and very unlikely in a state like Telangana. This is probably the result of high winds and cloudburst.

PRELIMS SPECIAL

About Eturnagaram Wildlife Sanctuary

- Eturnagaram Wildlife Sanctuary is a wildlife sanctuary located in Eturnagaram village in Mulugu district in Telangana, India. It is located 100 km (62 mi) from Warangal and 250 km (160 mi) from Hyderabad.

- The sanctuary is located near the Maharashtra, Chhattisgarh and Telangana borders. It is one of the oldest sanctuaries of Telangana.
- On 30 January 1952, the erstwhile Hyderabad Government declared it as a sanctuary because of its rich biodiversity.
- The land is undulating from steep slopes to gentle slopes from west to east. Three-quarters of the area consists of a plain while the rest is hilly with many streams and springs.
- The Godavari River passes through the sanctuary. The vegetation here is tropical dry deciduous with teak and other trees of good quality standing 60 ft (18 m) and above. The biennial festival of Sannakka Saralamma Jatara is held in the sanctuary.

KARAKORAM WILDLIFE SANCTUARY

Why in News: The standing committee of the National Board for Wildlife (NBWL) has cleared road stretches passing through the Karakoram Wildlife Sanctuary along the Line of Actual Control (LAC).

Key Details

- It including on a route to Daulat Beg Oldie (DBO), the country's northernmost military outpost in Ladakh and location of its highest airstrip.
- The NBWL cleared these stretches with conditions that the animal passage plans to safeguard wildlife in the Karakoram sanctuary should be implemented and that the Ministry of Defence, which is implementing the project, should also obtain the requisite permissions for forest land diversion, if applicable.
- The 5.8-km long Chushul-Lukung to Thakung post road upgradation is part of the India-China Border Roads (ICBR)-III project and will pass through the Changthang cold desert sanctuary.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Eturnagaram Wildlife Sanctuary is located in?

- (a) Telangana (b) Andhra Pradesh
(c) Kerala (d) Karnataka

Answer: (a)

PRELIMS SPECIAL



About Karakoram Wildlife Sanctuary

The Karakoram Wildlife Sanctuary, also known as the Karakoram (Nubra Shyok) Wildlife Sanctuary or the Karakoram (Siachen Shyok) Wildlife Sanctuary is a high altitude wildlife sanctuary

located in the easternmost reaches of the Karakoram range in Leh district, in the Indian union territory of Ladakh.

- It was established in 1987 and covers an area of about 5,000 square kilometers (500,000 ha).

- The Karakoram sanctuary is home to a variety of wildlife such as Tibetan antelope, Tibetan wolves, snow leopard, bharal, ibex, red fox, common otters and woolly hares.

About Changthang Wildlife sanctuary

- The Changthang Wildlife Sanctuary (or the Changthang Cold Desert Wildlife Sanctuary) is a high-altitude wildlife sanctuary located in the Ladakhi adjunct of the Changthang plateau in the Changthang District of the union territory of Ladakh.
- It is important as one of the few places in India with a population of the Kiang or Tibetan Wild Ass, as well as the rare Black-necked Crane.
- Changthang Wildlife Sanctuary covers an area of 4000 km².

About National Board for Wildlife (NBWL)

- Statutory body established in 2003 under the Wild Life (Protection) Act, 1972.
- Replaced the Indian Board for Wildlife (1952).
- Chaired by the Prime Minister; advises the government on wildlife conservation policies.
- Acts as the apex body for reviewing wildlife-related issues and approving projects around national parks and sanctuaries.
- The Standing Committee, chaired by the Minister of Environment, Forest, and Climate Change, approves projects within or near protected wildlife areas (within 10 km).

INDIAN WILD ASS

Why in News: According to a Census, Indian Wild Ass population rises by 26% to 7,672 in Gujarat.

Key Details



- The population of Indian Wild Ass (Equus hemionus khur), found only in Gujarat, has risen from 6,082 in 2020 to 7,672 in 2024, an increase of about 26.14%, according to the latest population census released by Gujarat forest and environment minister Mulubhai Bera in Gandhinagar on Monday.
- They are primarily found in the Little Rann of Kutch (LRK) in Gujarat, in a protected area called the Wild Ass

Sanctuary. The LRK has dual characteristics- that of a wetland and a desert. From June to September, the entire desert gets submerged in rainwater as well as seawater, attracting a large number of migratory birds.

- The Wild Ass Population Estimation (WAPE) is carried out once in every four years in Gujarat.
- The Asiatic wild ass (Equus hemionus), also known as the onager, comprises five subspecies, one of which is the Indian Wild Ass, referred to as 'Ghudkhar' in Gujarat.
- The survey was conducted over an area of approximately 15,510 sq km using the direct count method.
- Within these forest and sanctuary areas, the population includes 2,569 females, 1,114 males, 584 juveniles, and 2,206 unclassified individuals. In the revenue areas, there are 558 females, 190 males, 168 juveniles, and 283 unclassified wild asses.
- Habitat loss as a consequence of developmental activities is impacting Indian wild ass in its native habitats, ex-situ conservation is a part of the strategies that can help in ensuring sustained survival of the species in its natural habitat.

PRELIMS SPECIAL

Species Information

- The species is widely distributed across India, inhabiting open dry deciduous forests. It is solitary and shy animal, present in low densities across its distribution range. The species is identified by the presence of four horns present only in adult males. They are primarily browsers preferring nutrient rich forage.
- The International Union for Conservation of Nature (IUCN) lists the Indian wild ass as Near Threatened.
- CITES status: Appendix II.
- Wildlife Protection Act (1972): Schedule-I.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Wild Ass sanctuary is located in?
- | | |
|--------------------|---------------|
| (a) Madhya Pradesh | (b) Gujrat |
| (c) Andhra Pradesh | (d) Rajasthan |
- (b) Answer

WOMEN IN SPACE LEADERSHIP PROGRAMME

Why in News: Women in Space Leadership Programme (WiSLP) was recently launched by Department of Science and Technology (DST) in collaboration with the British Council as part of the UK-India Education and Research Initiative (UKIERI).

Key Details

- The initiative focuses on supporting institutions in strengthening gender-inclusive practices to foster women's leadership in space sciences by developing a strategic leadership framework. Coventry University is the delivery partner in this initiative.
- This programme is a significant step towards creating a gender-inclusive environment in space sciences. By building a robust leadership framework, we can empower women to contribute meaningfully to scientific research and innovation.
- The programme aims to build the leadership capacity of 250 early career researchers, equipping them with the tools to navigate gender biases and build a sustainable support network.
- Participants in the workshop, including academics and policymakers, discussed the national and global contexts for promoting gender equity in space sciences.
- The programme would involve building sustainable mentoring networks and enhancing scientific innovation by integrating a gender perspective into critical areas such as astrophysics and telecommunications.

Women of ISRO: Pioneers who shaped India's space journey

- **Lalitha Ramachandran** - Lalitha Ramachandran was just 22 when she joined the Space Science and Technology Centre – Vikram Sarabhai Space Centre (VSSC) was earlier known – as a technical assistant in 1969. She could, perhaps, be described as the first female Malayali chemical engineer ISRO recruited.
- **Radhika Ramachandran:** Joined ISRO in 1984 and served in various roles, including technical liaison officer at ISRO's New Delhi office and director of the Space Physics Laboratory. She highlights the merit-based culture and the support for open discussions and suggestions.

- **T S Ramadevi:** Joined ISRO in 1970 after completing her B.Tech from CET, Thiruvananthapuram. She was part of the communications unit and contributed to the growth of ISRO's transmission technologies. She retired as deputy director of management systems.
- **Athula Devi:** Joined ISRO in 1987 and retired in January, having been part of the team that developed base software systems for the Gaganyaan launch. She emphasizes ISRO's growth through failures and the team's dedication to projects above personal recognition.
- **Ritu Karidhal Shrivastava:** known as the "Rocket Woman of India," was the Mission Director of Chandrayaan-2 mission. She is an Indian scientist and aerospace engineer working in the Indian Space Research Organisation (ISRO). She was also a Deputy Operations Director for India's Mars orbital mission, Mangalyaan.
- **Dr. Tessy Thomas: India's Missile Woman:** Dr. Tessy Thomas, often referred to as the "Missile Woman of India," has been a key figure in India's defence and space sectors. As the Director General of Aeronautical Systems at the Defence Research and Development Organisation (DRDO), she played a vital role in the Agni missile program.

Indian Origin Women in Space



Kalpana Chawla

(Born in Karnal, Haryana), Kalpana Chawla was the first woman of Indian origin in space. She flew on NASA's two Space Shuttle missions, including STS-87 in 1997. Tragically, she lost her life during the re-entry of the Space Shuttle Columbia in 2003.



Sunita Williams

An American astronaut of Indian-Slovenian descent, Sunita Williams is the former record holder for most spacewalks by a woman (seven) and most spacewalk time for a woman (50 hours, 40 minutes). She has logged over 322 days in space across multiple missions.



Sunita Williams

An aeronautical engineer and Vice President at Virgin Galactic, Sirisha Bandla became the second India-born woman to travel to space on the Virgin Galactic Unity 22 mission in 2021.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Lalitha Ramachandran, T S Ramadevi, Dr Tessy Thomas are:

- (a) Biotechnologist (b) Space scientists
- (c) Entrepreneurs (d) Medical Researchers.

Answer (b)

THE DIFFERENTIAL ROTATION OF THE SUN'S CHROMOSPHERE

Why in News: Astronomers map the differential rotation of the Sun's chromosphere using 100 years of data from the Kodaikanal Solar Observatory.

Key Details

- **Research:** Astronomers have succeeded in mapping the variation in the rotation speed of the Sun's chromosphere, from the equator right up to its polar regions.
- **Significance:** The research can help give a complete picture of the Sun's inner workings.

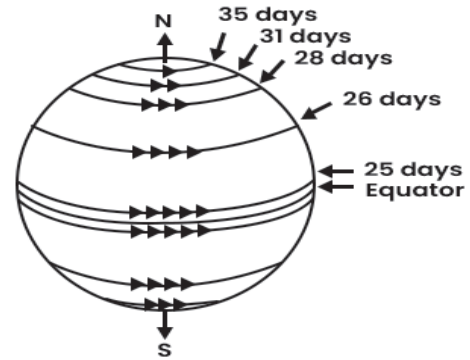
About Chromosphere

- The chromosphere is a thin layer of plasma that lies between the Sun's visible surface (the photosphere) and the corona (the Sun's upper atmosphere).
- It extends for at least 2,000 km (1,200 mi.) above the surface.
- It is an irregular layer above the photosphere where the temperature rises from 6000°C to about 20,000°C.

Differential Rotation of Sun

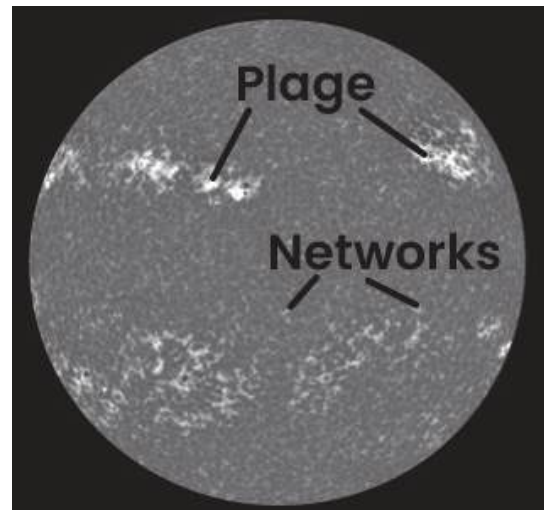
- Earth spins like a rigid ball, completing a full rotation every 24 hours.
 - This rotation is the same everywhere on Earth.
- But, as it is a giant ball of plasma, different parts of the Sun rotate at different speeds, depending on their latitude.
 - It has been known for a long time that the Sun's equator spins much faster than its poles.
 - It takes the equatorial region only about 25 days to complete one rotation, while the poles take a leisurely 35 days.
 - This difference in rotation speed is called **differential rotation**.
- Understanding the intricacies of the variation in rotation speed, as a function of latitude as well as time, is crucial to understand the Sun itself. This is because the interaction of differential rotation with the Sun's magnetic field is what is behind the solar dynamo, the 11 year solar cycle,

and its periods of intense activity that even produce magnetic storms on Earth.



Solar Plages and Network Features

- Plages, unlike sunspots, are brighter regions with weaker magnetic fields.
- They reside in the chromosphere, and are significantly larger than sunspots, ranging from 3 to 10 times the size of sunspots.
- Network features, on the other hand, are embedded with weaker magnetic fields and are about 30,000 km across – slightly larger than individual sunspots but smaller than sunspot groups.
- Unlike sunspots, both plages and networks are continuously present across the Sun's surface throughout the solar cycle, allowing the scientists to probe the rotation rate even at the poles.



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about Sun's Chromosphere.

1. It is the outermost layer of the sun lying immediately above Corona.

2. The chromosphere has a characteristic red colour due to electromagnetic emissions.
3. Chromospheres have also been observed on stars other than the Sun.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None of them

Answer (b) 2 and 3 Only

VENUS ORBITER MISSION

Why in News: The Union Cabinet has recently approved India's Venus Orbiter Mission which is planned to be launched in March 2028

Key Details

- The Union Cabinet of the Government of India has accorded approval the Venus Orbiter Mission (VOM) to study different facets of Venus including its surface and atmosphere

About Venus Orbiter Mission (VOM)

- The Venus Orbiter Mission will explore the planet's atmosphere, surface, and its interaction with the Sun.
- **Objectives:** Key scientific objectives include examining dust in the Venusian atmosphere, mapping its surface topography in high resolution, studying the solar X-ray spectrum near Venus, analyzing Venusian airglow, and investigating sub-surface characteristics. Additionally, the mission will serve as a technology demonstration for ISRO, testing aerobraking and thermal management techniques in the harsh Venusian environment.
- **Payloads:** For the Venus Orbiter mission (VOM), sixteen Indian payloads, two Indian and international collaborative payloads, and one international payload have been recommended by Experts Review Committee under well-defined broad science themes viz., surface/subsurface, atmosphere, ionosphere and solar wind Interaction with an aim to explicate the outstanding science questions as well as the gap areas which need further investigations.
- **Launch Details:** India's Venus Orbiter Mission is planned to be launched in March 2028.
- **Other Expected Outcomes:** This ambitious mission is expected to create significant employment opportunities, foster skill development, and drive technological advancements in India. To ensure broad engagement and collaboration, ISRO has organized national-level discussions involving scientists, academics, and research students from across the country.

Earlier Space Missions on Venus

- Despite sending several space missions globally, Venus retains its enigma. Early missions in the 1960s and 1970s by NASA and the Soviet Union revealed Venus's scorching surface temperature and dense atmosphere. These missions provided initial insights into the planet's atmospheric composition, surface features, and magnetic environment.
- Later missions in the 1970s and 1980s, such as Pioneer Venus and Vega, expanded our understanding of Venus's atmosphere, including its composition, circulation, and interaction with the Sun. These missions also collected data on the planet's surface and its geological history.
- More recent missions, like Venus Express and Akatsuki, have focused on studying the planet's atmospheric dynamics, climate evolution, and surface features. These missions have provided valuable information on the planet's unique characteristics and its potential for habitability in the past.
- However, these missions to Venus had limited and narrow spatial coverage either in the South-polar region or in the equatorial belt. Hence it is difficult to build global maps of many phenomena, including winds, waves, and chemical abundances. Venus Orbiter Mission would provide uniform coverage of Venus, thus providing a unique global dataset for future science missions.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Mariner, Vega, Venera, Akatsuki are space missions to:

- (a) Mars (b) Saturn
 (c) Venus (d) Jupiter

Answer (c)

CHARON: PLUTO'S LARGEST MOON

Why in News: James Webb telescope recently detected carbon dioxide, hydrogen peroxide on surface of Pluto's largest moon, Charon. Pluto was demoted to a dwarf planet in 2006 by the International Astronomical Union (IAU).

Key Details

- Webb for the first time detected carbon dioxide and hydrogen peroxide - both frozen as solids - on the surface of Charon, a spherical body about 750 miles (1,200 km) in diameter.
- The Webb observations build on data obtained when NASA's New Horizons spacecraft flew by Charon during its visit to the Pluto system in 2015.
- The presence of hydrogen peroxide speaks to the irradiation processes Charon has experienced over time, while the carbon dioxide is probably an original component dating to this moon's formation about 4.5 billion years ago.

- The hydrogen peroxide, formed as the water ice on Charon's surface was chemically altered by the perpetual onslaught of ultraviolet radiation from the sun as well as energetic particles from the solar wind and from galactic cosmic rays that traverse the universe.
- Carbon dioxide observed by Webb was probably buried underneath the surface and exposed by impacts on Charon. The carbon dioxide, is likely to have been part of the primordial material from which both Charon and Pluto originally formed.
- The new observations of Charon help tell a broader story about the celestial bodies populating our solar system.
- The researchers used a Webb instrument called the Near-Infrared Spectrograph to make four observations in 2022 and 2023, getting full coverage of Charon's northern hemisphere.

PRELIMS SPECIAL

Charon

- The largest of Pluto's five moons, Charon discovered in 1978 is actually half the size of its parent planet at about 754 miles wide. The relationship between their relatively similar sizes is unusual, according to NASA, so Pluto and Charon together are sometimes referred to as a **double dwarf planet system**.
- It is about half the diameter and an eighth the mass of Pluto, a dwarf planet that resides in a frigid region of the outer Solar System called the Kuiper Belt, beyond the most distant planet Neptune.
- The distance between Charon and Pluto is about 12,200 miles (19,640 km), compared to the 238,855 miles (384,400 km) on average separating Earth from its moon.
- Charon, Pluto's largest moon, stands unique as the only mid-sized **Trans Neptunian Object (TNO)** i.e., with a diameter between 500 and 1700km for which geological mapping is available, thanks to measurements returned by the New Horizons mission.
- Unlike larger TNOs (e.g., Pluto, Eris, and Makemake), Charon's surface is not obscured by hyper-volatile ices, such as methane (CH₄), with the possible exception toward the poles.
- As a result, Charon serves as an excellent candidate for retrieving valuable insights into processes such as differentiation, radiation exposure, and cratering within the Kuiper Belt.
- Most of Charon's surface is **gray**, with reddish-brown regions around its poles composed of organic materials.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Charon recently seen in news is
- (a) A Goldilocks zone celestial body.
 - (b) An Incoming meteor towards Earth.

- (c) Saturn's newly discovered moon.
- (d) Pluto's largest moon.

(d) ANSWER

JIANGMEN UNDERGROUND NEUTRINO OBSERVATORY

Why in News: The Jiangmen Underground Neutrino Observatory (JUNO) is an experiment under construction in China with the primary goal of determining the neutrino mass hierarchy (MH) with reactor anti-neutrinos.

Key Details

- The JUNO detector system consists of a central detector, an active veto system and a calibration system.
- Due to its unprecedented scale and precision, JUNO will be an exceptional multipurpose detector with a rich physics program in neutrino oscillation, geo-neutrinos, astrophysical neutrinos and the search for physics beyond the Standard Model (sterile neutrinos, dark matter, proton decay and others).

About Neutrinos

- Neutrinos are the most abundant particles that have mass in the universe.
- Every time atomic nuclei come together (like in the sun) or break apart (like in a fission reactor or particle accelerator), they produce neutrinos.
- Once produced, these particles almost never interact with other matter.
- Tens of trillions of neutrinos from the sun stream through your body every second, but you can't feel them.

PRELIMS SPECIAL

About India-based Neutrino Observatory (INO)

- The India-based Neutrino Observatory (INO) Project is a multi-institutional effort aimed at building a world-class underground laboratory with a rock cover of approx. 1200 m for non-accelerator based high energy and nuclear physics research in India.
- INO is now in the feasibility study stage.
- More than 50 scientists from about 15 Institutes and Universities in India have come together to form the National Neutrino Collaboration group (NNCG).
 - This group has the task of detailing various aspects related to INO activity and come up with a proposal for an underground neutrino laboratory.
- **Site:** Bodi West Hills (BWH) region near Pottipuram village in Theni district of Tamil Nadu.

Rashtriya Vigyan Puraskar 2024

- On August 22, 2024, the inaugural Rashtriya Vigyan Puraskar ceremony was held at Gantantra Mandap, Rashtrapati Bhavan, with President Smt. Droupadi Murmu presenting the awards to 33 distinguished scientists across the four categories.
- Rashtriya Vigyan Puraskar is awarded in four distinct categories:**
 - Vigyan Ratna (VR) Award:** This is the highest honor, awarded for lifetime achievements in any field of science and technology.
 - Vigyan Shri (VS) Award:** Recognizes distinguished contributions in any field of science and technology.
 - Vigyan Yuva-Shanti Swarup Bhatnagar (VY-SSB) Award:** Honors young scientists who have made exceptional contributions in science and technology.
 - Vigyan Team (VT) Award:** Given to a team of three or more scientists/researchers/innovators who have made significant contributions in their field through collaborative work.
- Objective of the Rashtriya Vigyan Puraskar**
 - The primary objective of the Rashtriya Vigyan Puraskar is to recognize and celebrate the outstanding work of individuals and teams in various fields of science, technology, and innovation.
 - This prestigious award is open to scientists, technologists, and innovators working in government and private sectors, as well as independent researchers and Indian-origin professionals abroad.
 - The award seeks to acknowledge those who have made exceptional contributions in their respective fields, particularly those whose work has a significant impact on Indian society and the global scientific community.
- Eligibility Criteria**
 - The Rashtriya Vigyan Puraskar is open to all scientists, technologists, and innovators working in any field of science, technology, or innovation.
 - This includes professionals in government or private sector organizations, as well as individuals working independently.
 - Additionally, scientists of Indian origin residing abroad who have made significant contributions that benefit Indian communities or society are also eligible.

Domain Fields			
The awards cover a wide range of scientific fields.			
1	Physics	Engineering Sciences	7
2	Chemistry	Agricultural Science	8
3	Biological Sciences	Environmental Science	9
4	Mathematics & Computer Science	Technology & Innovation	10
5	Earth Science	Atomic Energy	11
6	Medicine	Space Science and Technology	12

Nomination

- Nominations for the Rashtriya Vigyan Puraskar open annually from January 14 to February 28.
- The nominations are submitted online through the Rashtriya Puraskar Portal.
- Both self-nominations and nominations by others are accepted, making the process inclusive and accessible.

Inaugural Vigyan Ratna Award

- Field:** Biological Sciences
- Awardee:** Prof. Govindarajan Padmanabhan
- NASI Honorary Scientist & Professor, Indian Institute Of Science, Bangalore: Prof. Padmanabhan has been instrumental in creating the Biotechnology Industry Assistance Council, New Delhi that supports 1800 incubatees and generating more than 800 products in the area of Biotechnology.
- Prof. Padmanabhan elucidated the heme-bio synthetic pathway of plasmodium causing malaria and pioneered several molecular biology / biotech research efforts in the country.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. India based Neutrino Observatory is located in?

- (a) Andhra Pradesh (b) Tamil Nadu
(c) Telanagna (d) Kerala

(b) Answer

Descriptive Question

Q. Discuss the significance of international projects like Jiangmen Underground Neutrino Observatory (JUNO) and the India-based Neutrino Observatory (INO) in study of Neutrinos. [15 marks] [250 words]

SARTHI: SMART REEFER TRANSPORTATION TO CURB POST-HARVEST LOSSES

Why in News: National Institute of Food Technology Entrepreneurship and Management, Kundli (NIFTEM-K), has introduced Solar Assisted Reefer Transportation with Hybrid Controls and Intelligence (SARTHI).

About SARTHI

- Solar Assisted Reefer Transportation with Hybrid Controls and Intelligence (SARTHI) integrates IoT, sensors, and solar power to revolutionize the transport of fruits and vegetables, is an innovative solution to reduce post-harvest losses in perishable food transportation.

- SARTHI acts as a true companion for farmers, retailers, food processors, and entrepreneurs by reducing wastage in perishables.
- This technology allows transporters to make informed decisions, potentially rerouting produce to closer markets if spoilage is detected, cutting energy waste and reducing carbon footprints.
- It has the ability to monitor quality remotely and make real-time decisions during transportation, thus minimizing spoilage.
- SARTHI features dual compartments designed to store fruits and vegetables at different temperatures, addressing their unique storage needs.
 - Fruits are kept between 0-5°C, while vegetables are stored at 7-12°C.
 - Additionally, a compartment can maintain temperatures as low as -10°C for specific produce.
 - This design helps extend shelf life and reduces losses due to chilling injury or moisture loss.
- The system also includes a solar-powered air handling unit that ensures temperature control during halts.
 - This sustainable feature enhances SARTHI's ability to maintain the quality of perishable goods during transport.

Note: National Institute of Food Technology, Entrepreneurship and Management (NIFTEM-K), Kundli, Haryana', under the administrative control of Ministry of Food Processing Industries.

Other Initiatives

- Department of Agriculture & Farmers Welfare is implementing Mission for Integrated Development of Horticulture (MIDH) under which financial assistance is provided for various horticulture activities including construction/Expansion/Modernization of cold storages of capacity up to 5000 MT.
- National Horticulture Board (NHB) is implementing a scheme namely "Capital Investment Subsidy for Construction/Expansion /Modernization of Cold Storages and Storages for Horticulture Products".
- Ministry of Food Processing Industries (MoFPI) implements a Scheme for Integrated Cold Chain, Food Processing and Preservation Infrastructure as one of the components of Pradhan Mantri Kisan Sampada Yojana (PMKSY) with the objective of reducing post-harvest losses of horticulture and non-horticulture produce and providing remunerative price to farmers for their produce.
- Government has launched Agriculture Infrastructure Funds (AIF) of Rs. 1.00 lakh crore. Under AIF, there is provision for collateral free term loan upto Rs. 2.00 crore and interest subvention of 3% on the term loan availed for creation of post-harvest infrastructure including establishment of cold storages.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Within reference to the 'SARTHI: Smart Reefer Transportation to Curb Post-Harvest Losses' consider the following statements

1. It is introduced by National Institute of Food Technology Entrepreneurship and Management.
2. It aims to integrate IoT, Sensors and solar power to revolutionize the transport of fruits and vegetables.
3. It aims to reduce wastages in perishables.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 and 3 only
 (c) 1 and 3 only (d) 1, 2 and 3

(d) Answer

Descriptive Question

Q. Discuss the role of technological innovations like SARTHI in addressing post-harvest losses for the agriculture sector. [10 marks] [150 words]

NOBEL PRIZE IN PHYSICS 2024

Why in News: Nobel Prize in Physics 2024 is awarded to John J. Hopfield and Geoffrey E. Hinton for foundational discoveries and inventions that enable machine learning with artificial neural networks.

Key Details

Contribution of John Hopfield

- John Hopfield invented a network that uses a method for saving and recreating patterns.
- The Hopfield network utilises physics that describes a material's characteristics due to its atomic spin – a property that makes each atom a tiny magnet.
- The network as a whole is described in a manner equivalent to the energy in the spin system found in physics, and is trained by finding values for the connections between the nodes so that the saved images have low energy.
- When the Hopfield network is fed a distorted or incomplete image, it methodically works through the nodes and updates their values so the network's energy falls.
- The network thus works stepwise to find the saved image that is most like the imperfect one it was fed with.

Contribution of Geoffrey Hinton

- Geoffrey Hinton used the Hopfield network as the foundation for a new network that uses a different method: the Boltzmann machine.
- This can learn to recognise characteristic elements in a given type of data.
- Hinton used tools from statistical physics, the science of systems built from many similar components.
- The machine is trained by feeding it examples that are very likely to arise when the machine is run.
- The Boltzmann machine can be used to classify images or create new examples of the type of pattern on which it was trained.
- Hinton has built upon this work, helping initiate the current explosive development of machine learning.

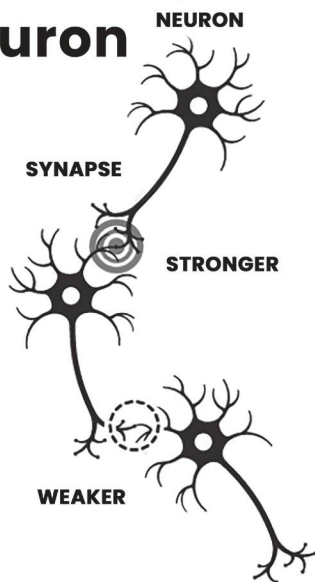
- They have used tools from physics to develop methods that are the foundation of today's powerful machine learning.
- John Hopfield created an associative memory that can

store and reconstruct images and other types of patterns in data.

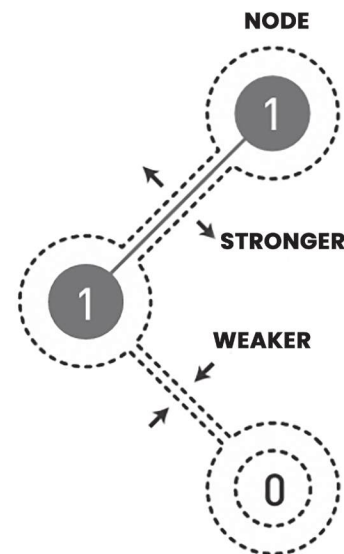
- Geoffrey Hinton invented a method that can autonomously find properties in data, and so perform tasks such as identifying specific elements in pictures.

Natural and Artificial Neuron

The brain's neural network is built from living cells, neurons, with advanced internal machinery. They can send signals to each other through the synapses. When we learn things, the connections between some neurons gets stronger, while others get weaker.

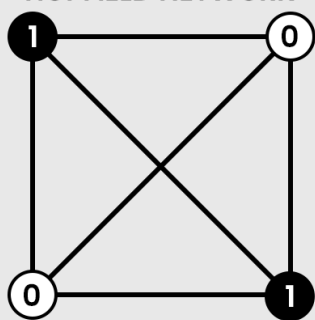


Artificial neural networks are built from nodes that are coded with a value. The nodes are connected to each other and, when the network is trained, the connections between nodes that are active at the same time get stronger, otherwise they get weaker.



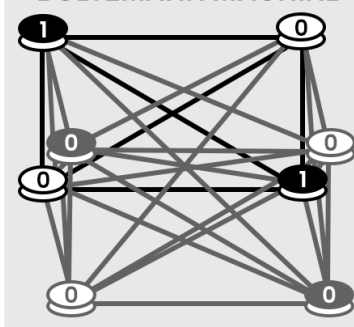
DIFFERENT TYPES OF NETWORK

HOPFIELD NETWORK



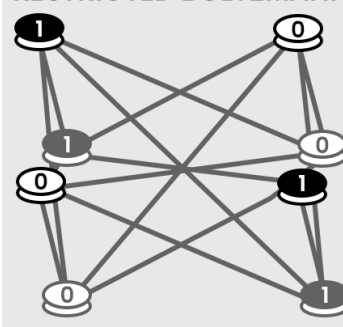
John Hopfield's associative memory is built so that all the nodes are connected to each other. Information is fed in and read out from all the nodes.

BOLTZMANN MACHINE



Geoffrey Hinton's Boltzmann machine is often constructed in two layers, where information is fed in and read out using a layer of visible nodes. They are connected to hidden nodes, which affect how the network functions in its entirety.

RESTRICTED BOLTZMANN

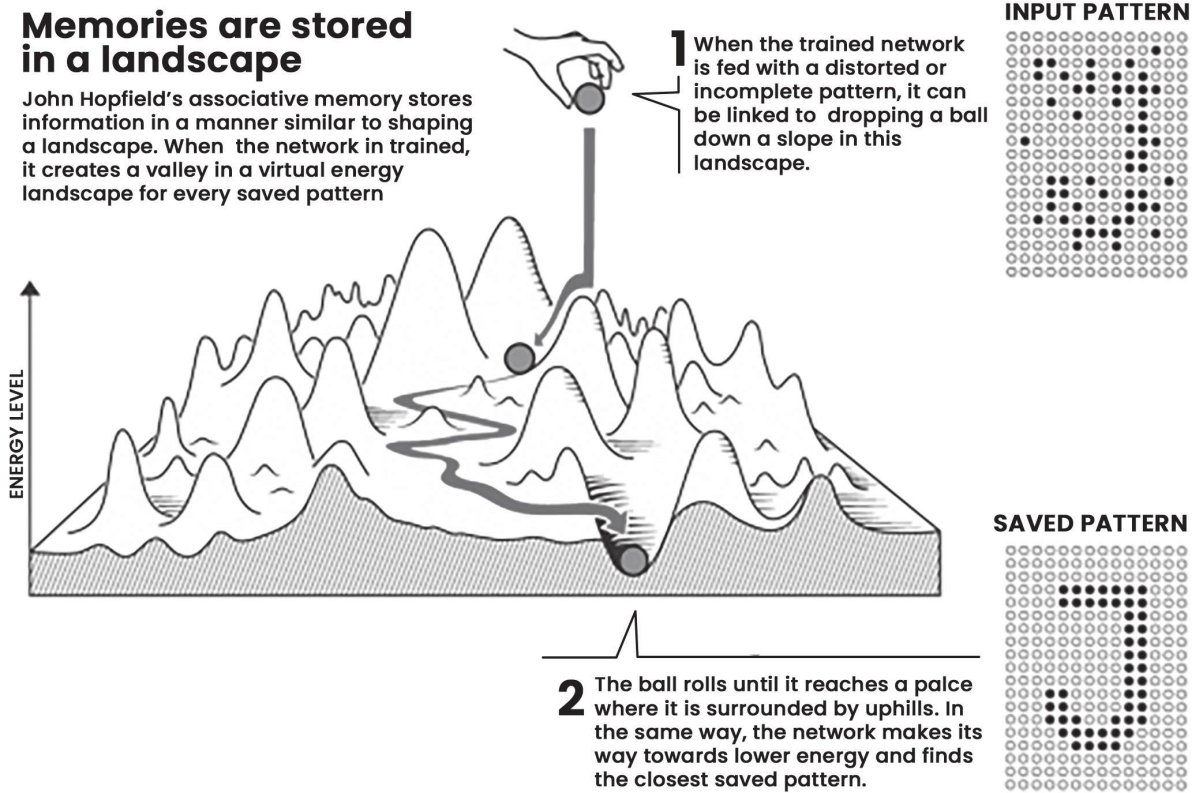


In a restricted Boltzmann machine, there are no connections between nodes in the same layer. The machines are frequently used in a chain, one after the other. After training the first restricted Boltzmann machine, the content of the hidden nodes is used to train the next machine, and so on.



Memories are stored in a landscape

John Hopfield's associative memory stores information in a manner similar to shaping a landscape. When the network is trained, it creates a valley in a virtual energy landscape for every saved pattern



EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about the Nobel Prize in Physics 2024:

1. The prize was awarded foundational discoveries and innovations that enable machine learning with artificial neural networks.
2. It was awarded to John J. Hopfield and Geoffrey E. Hinton.

Which of the statements given above is/are correct?

- (a) 1 Only (b) 2 Only
(c) Both 1 and 2 (d) Neither 1 nor 2

Answer: (c)

NOBEL PRIZE IN CHEMISTRY 2024

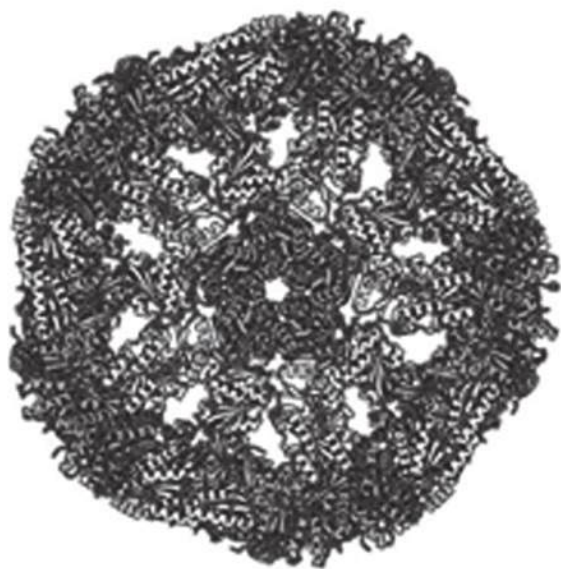
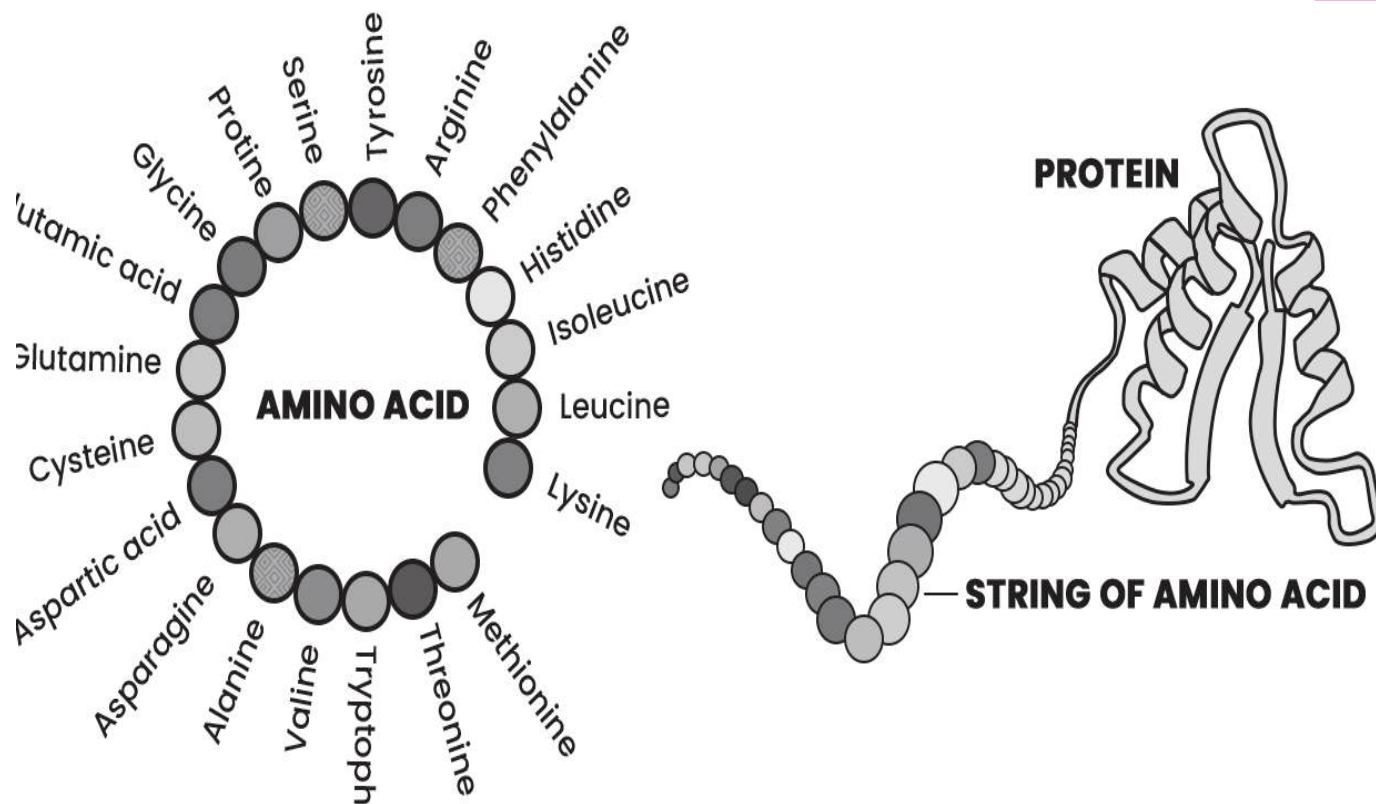
Why in News: The Nobel Prize Chemistry 2024 was divided, one half awarded to David Baker “for computational protein design”, the other half jointly to Demis Hassabis and John M. Jumper “for protein structure prediction”.

Key Details

They have revealed proteins' secrets through computing and artificial intelligence.

Why is work on proteins important?

- Proteins are fundamental to almost all biological processes, or as the Nobel Prize website poetically says, to “the exuberant chemistry of life”.
- In human bodies, for example, the protein haemoglobin transports oxygen, insulin helps absorption of glucose from blood, etc. Thus, anything that impacts protein production can have consequences for human health.
- Given their central importance, proteins have been extensively studied for a long time. There was even a competition about predicting protein structures running from 1994 (called Critical Assessment of Protein Structure Prediction, or CASP), which ended only after Jumper’s contributions to Hassabis’s work helped them win it decisively in 2020. Baker, separately, had participated in the competition in 1998.
- Hassabis, had been working in the field of AI, and had co-founded DeepMind, which built AI models for board games and was later sold to Google. In 2018, he entered the CASP. His team built an AI model called AlphaFold, which displayed around 60 per cent accuracy in predicting protein structures.
- While impressive at the time, this accuracy rate was not good enough. Research on AlphaFold continued, but saw a breakthrough only after Jumper joined Google DeepMind.
- Baker developed Rosetta, a software to predict protein structures. Baker and his team today can create in labs, a variety of new proteins with various functions.



2016: New nanomaterials where up to 120 proteins spontaneously link together.



2017: Proteins that bind to an opioid called fentanyl (purple). These could be used to detect fentanyl in the environment



2021: Nanoparticles (yellow) with proteins imitating influenza virus on the surface (green) that can be used as a vaccine for influenza. Successful in animal models.



2022: Proteins that function as a type of molecular rotor.



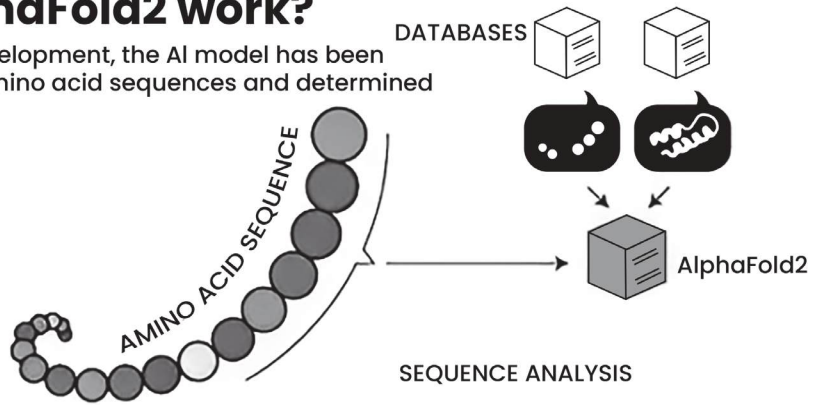
2024: Geometrically shaped proteins that can change their shape due to external influences. Could be used for producing tiny sensors.

How does AlphaFold2 work?

As part of AlphaFold2's development, the AI model has been trained on all the known amino acid sequences and determined protein structures

1. DATA ENTRY AND DATABASE SEARCHES

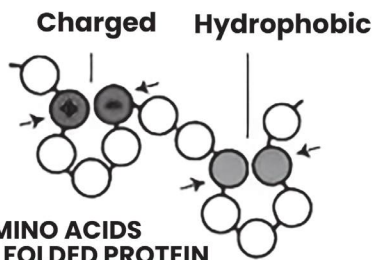
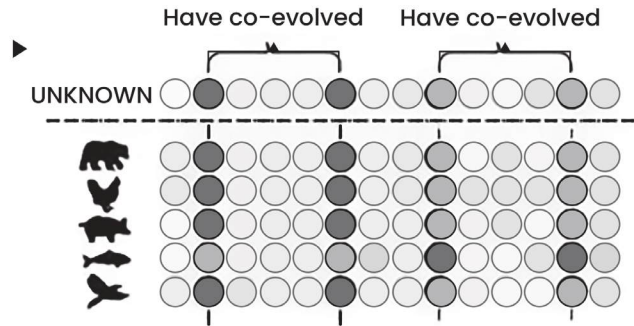
An amino acid sequence with unknown structure is fed into AlphaFold2, which searches databases for similar amino acid sequences and protein structures.



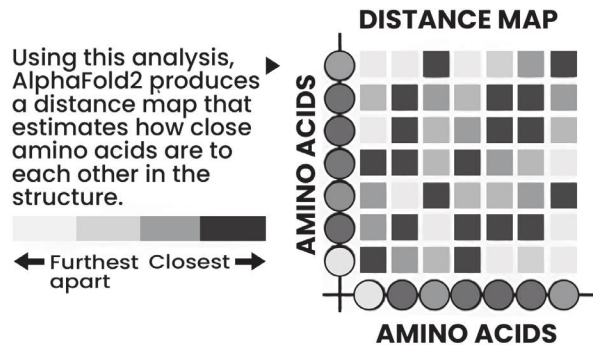
2. SEQUENCE ANALYSIS

The AI model aligns all the similar amino acid sequences often from different species—and investigates which parts have been preserved during evolution.

In the next step, AlphaFold2 explores which amino acids could interact with each other in the three-dimensional protein structure. Interacting amino acids co-evolve. If one is charged, the other has the opposite charge, so they are attracted to each other. If one is replaced by a water-repellent (hydrophobic) amino acid, the other also becomes hydrophobic.



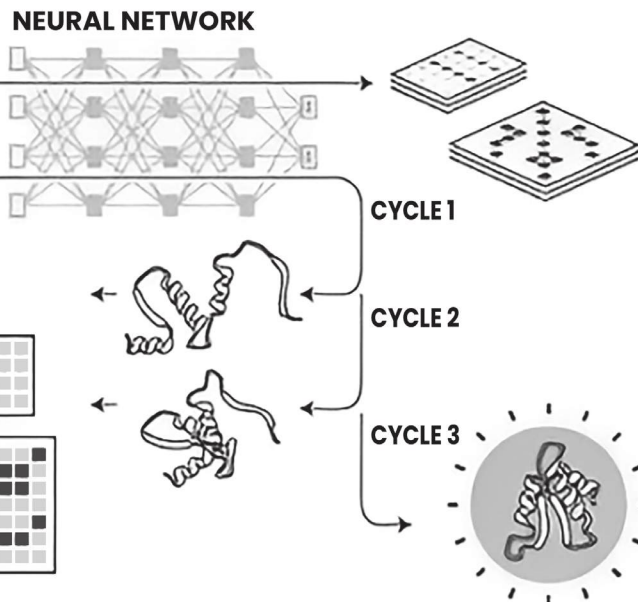
AMINO ACIDS IN FOLDED PROTEIN STRUCTURE



Using this analysis, AlphaFold2 produces a distance map that estimates how close amino acids are to each other in the structure.

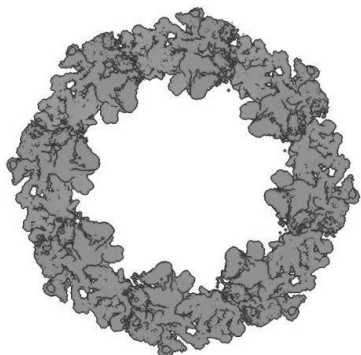
3. AI ANALYSIS

Using an iterative process, AlphaFold2 refines the sequence analysis and distance map. The AI model uses neural networks called transformers, which have a great capacity to identify important elements to focus on. Data about other protein structures—if they were found in step 1—is also utilised.



4. HYPOTHETICAL STRUCTURE

AlphaFold2 puts together a puzzle of all the amino acids and tests pathways to produce a hypothetical protein structure. This is re-run through step 3. After three cycles, AlphaFold2 arrives at a particular structure. The AI model calculates the probability that different parts of this structure correspond to reality



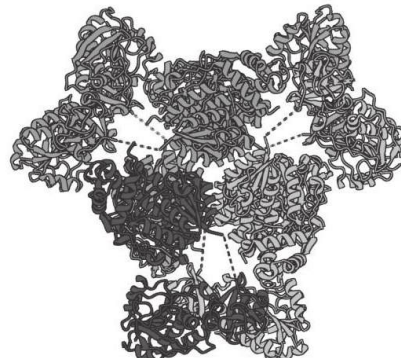
2022

Part of a huge molecular structure in the human body. More than a thousand proteins form a pore through the membrane surrounding the cell nucleus.



2022

Natural enzymes that can decompose plastic. The aim is to design proteins that can be used to recycle plastic.



2023

A bacterial enzyme that causes antibiotic resistance. The structure is important for discovering ways of preventing antibiotic resistance.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Why is the study of proteins considered fundamental to biological processes?

- (a) They are responsible for the movement of molecules in the body.
- (b) They play a crucial role in almost all biological processes, as they are involved in vital functions such as oxygen transport and glucose absorption.
- (c) They are the only components of cells that can replicate.
- (d) They provide the genetic blueprint for organisms.

Answer: (b)

- Every cell contains the same chromosomes, so every cell contains exactly the same set of genes and exactly the same set of instructions. Yet, different cell types, such as muscle and nerve cells, have very distinct characteristics.
- Gene regulation allows each cell to select only the relevant instructions. This ensures that only the correct set of genes is active in each cell type.
- Victor Ambros and Gary Ruvkun were interested in how different cell types develop. They discovered microRNA, a new class of tiny RNA molecules that play a crucial role in gene regulation.
- Their groundbreaking discovery revealed a completely new principle of gene regulation that turned out to be essential for multicellular organisms, including humans.
- It is now known that the human genome codes for over one thousand microRNAs. Their surprising discovery revealed an entirely new dimension to gene regulation.
- MicroRNAs are proving to be fundamentally important for how organisms develop and function.

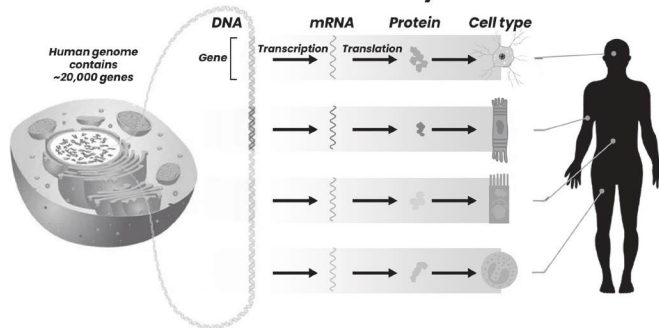
NOBEL PRIZE IN PHYSIOLOGY OR MEDICINE 2024

Why in News: The 2024 Nobel Prize in Physiology or Medicine was awarded to Victor Ambros and Gary Ruvkun.

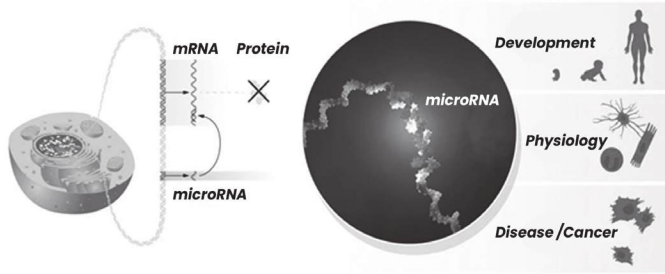
Key Details

- The Nobel Assembly at Karolinska Institutet has decided to award the 2024 Nobel Prize in Physiology or Medicine for the discovery of microRNA and its role in post-transcriptional gene regulation.
- This year's Nobel Prize honors two scientists for their discovery of a fundamental principle governing how gene activity is regulated.
- The information stored within our chromosomes can be likened to an instruction manual for all cells in our body.

Genes control cell diversity and function



The flow of genetic information from DNA to mRNA to proteins. The identical genetic information is stored in DNA of all cells in our bodies. This requires precise regulation of gene activity so that only the correct set of genes is active in each specific cell type.



- (c) Rosalind Franklin and Maurice Wilkins for their contributions to the understanding of DNA.
- (d) Charles Darwin and Gregor Mendel for their work on evolution and inheritance.

Answer: (b)

The seminal discovery of micro RNAs was unexpected and revealed a new dimension of gene regulation.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. The 2024 Nobel Prize in Physiology or Medicine was awarded to which two scientists, and for what significant discovery?
- (a) James Watson and Francis Crick for the discovery of DNA structure.
 - (b) Victor Ambros and Gary Ruvkun for the discovery of microRNA and its role in post-transcriptional gene regulation.

HYPERUNIFORMITY

Why in News: Researchers have explored the mechanism behind the emerging property of recently discovered exotic disordered state of matter, known as “hyperuniformity”.

About Hyperuniformity

- Hyperuniformity is a property of certain heterogeneous media in which density fluctuations in the long-wavelength range decay to zero. Hyperuniform disordered materials have been observed in a variety of settings, such as in quasicrystals, large-scale structures of the universe, soft and biological emulsions and colloids, etc.
- The mechanism responsible for the suppressed fluctuations in the hyperuniform systems explains the emerging properties of a recently discovered exotic disordered state of matter, known as “hyperuniformity”.

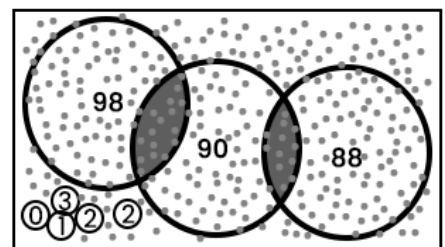
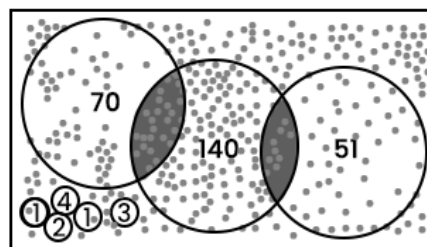
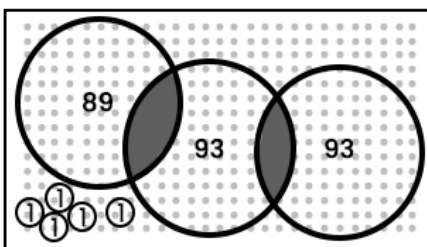
FINDING HIDDEN ORDER

Imagine repeatedly tossing a ring onto a field of dots and counting the number of whole dots inside the ring each time it lands.

The number of enclosed dots per ring toss varies more for large rings than for small rings. This is because all the variation occurs along the ring's edge and so is proportional to the ring's perimeter.

The variation in the number of enclosed dots is proportional to the ring's area, since the density of dots varies throughout the ring. This means the variation can become extreme on large scales.

For small rings, the variation is similar to that of a random distribution. But the variation is proportional to the ring's perimeter rather than its area, so for large rings, the variation resembles that of a lattice.

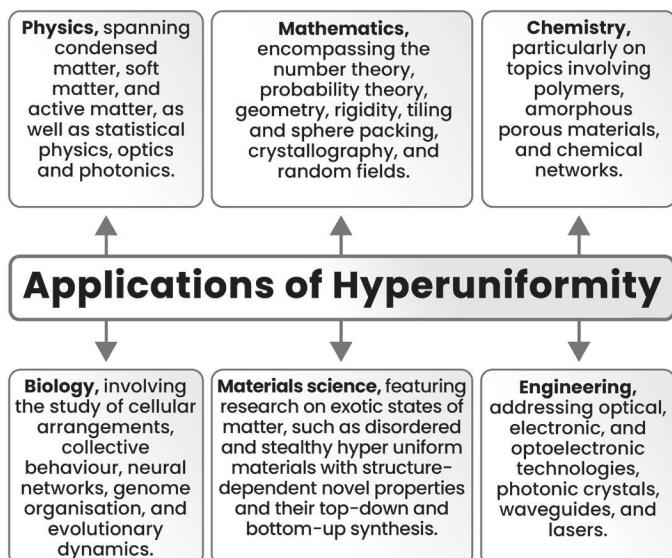


Similar variance per small ring toss

Similar variance in number of dots per large ring toss

Features of Hyperuniformity

- One of the most striking characteristics of such a state is that mass fluctuations are greatly suppressed as the system size grows. Indeed, it is strikingly opposite to what typically happens at the critical point of liquids
- A hyperuniform matter near criticality, is one that falls somewhere between a perfect crystal, an amorphous solid and a liquid.



EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to principle of Hyperuniformity, consider the following statement:

1. It can be applied in making of amorphous porous materials.
2. It can be applied in evolutionary dynamics studies.
3. It can be applied in making of optoelectronic technologies.

Which of the statements given above are correct?

- (a) 1 only (b) 1 and 3 only
 (c) 2 only (d) 1, 2 and 3

Answer: (d)

Descriptive Question

Q. Discuss the concept of hyperuniformity and its unique properties. How can its applications across various streams contribute to advancement in technology? [10 marks] [150 words]

THE LUNAR POLAR EXPLORATION MISSION

Why in News: The National Space Commission, India’s apex body on space missions, cleared the fifth lunar mission, the Lunar Polar Exploration Mission or LupeX.

Key Details

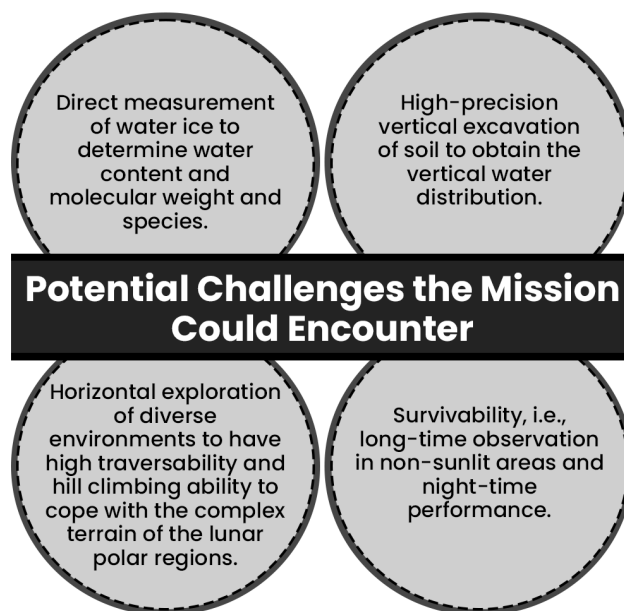
- A collaborative effort between the Indian Space Research Organisation (ISRO) and Japan Aerospace Exploration Agency (JAXA), LupeX is part of India’s larger lunar

roadmap that ultimately envisions sending an astronaut to the Moon and bringing them safely back.

- The mission could live for up to 100 days on the lunar surface, a stay that would be over five times the duration of Chandrayaan-3’s mission life.

LUPEX Mission

- **Aim:** The LUPEX project is an initiative aimed at exploring the Moon for water and other resources and gaining expertise in exploring the surface of the Moon.
- **Collaboration:** The LUPEX project is an international cooperative project, with JAXA in charge of the lunar rover and ISRO responsible for the lander that will carry the rover; observation instruments from NASA and the European Space Agency (ESA) will also be mounted on the rover.
- The LUPEX project will investigate the quantity and quality of water on the Moon.
- **Rover:** The rover being developed by JAXA will drive on its own to search for areas where water is likely to be present and sample the soil by digging into the ground with a drill. The plan is to acquire data by analyzing the collected samples in detail with observation equipment mounted on the rover.
 - The rover will be equipped with instruments for measuring the water content of regolith (lunar sand), drilling and sampling, as well as with other world-first and world-leading technologies for the driving system and batteries.
- ISRO has advanced technological capabilities that it has applied to operating lunar orbiters and developing lunar landers and rovers, and the LUPEX project will have to build a larger lunar rover than ISRO has developed to date.
- The LUPEX project is currently scheduled for launch in 2025.



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. What is the primary aim of the Lunar Polar Exploration Mission (LUPEX) as developed collaboratively by ISRO and JAXA?

- (a) To send astronauts to Mars and back safely.
- (b) To explore the Moon for water and other resources.
- (c) To establish a permanent lunar base for future missions.
- (d) To launch a satellite for communication purposes.

Answer: (b)

MAJOR ATMOSPHERIC CHERENKOV EXPERIMENT (MACE) OBSERVATORY

Why in News: The Department of Atomic Energy (DAE) inaugurated the Major Atmospheric Cherenkov Experiment (MACE) Observatory, the largest imaging Cherenkov telescope in Asia and the highest of its kind in the world, in Hanle, Ladakh.

Key Details



- The telescope is indigenously built by Bhabha Atomic Research Centre (BARC) with support from Electronics Corporation of India Limited (ECIL) and other Indian industry partners.

- The MACE telescope will observe high-energy gamma rays, contributing to global efforts to understand the most energetic phenomena in the universe, such as supernovae, black holes, and gamma-ray bursts.
- This facility will also complement global observatories, strengthening India’s position in the field of multi-messenger astronomy.
- Looking ahead, the MACE project aims to foster international collaborations, advancing India’s contributions to space research and bolstering India’s position in the global scientific community.
- The observatory will also serve as a beacon of inspiration for future generations of Indian scientists, encouraging them to explore new frontiers in astrophysics.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Recently, The Department of Atomic Energy (DAE) inaugurated the Major Atmospheric Cherenkov Experiment (MACE) Observatory. Consider the following statements about MACE.

1. It is a telescope indigenously built by Bhabha Atomic Research Centre (BARC).
2. It is the largest imaging Cherenkov telescope in Asia and the highest of its kind in the world.
3. The observatory is located in Deosthali in Uttarakhand.

Which of the above statements are correct?

- (a) 1 only
- (b) 1, 2 and 3
- (c) 2 and 3 only
- (d) 1 and 2 only

Answer: (d)

AURORAS

Why in News: Auroras were captured at India’s highest observatory in Hanle, Ladakh.

Key Details

- A spectacular display of auroras lit up the skies over Leh, India, as a severe geomagnetic storm struck Earth on October 10, 2024.
- The auroras were captured at India’s highest observatory in Hanle.
- This event was triggered by a powerful coronal mass ejection (CME) from the Sun, which reached Earth earlier today. The CME originated from an X1.8 solar flare that occurred on October 9, and it travelled at speeds exceeding 1.5 million miles per hour.
- The National Oceanic and Atmospheric Administration

DEFENCE & SECURITY

GREY ZONE WARFARE

Why in News: Indian Army Chief General has recently warned against China's "Grey Zone" tactics along the Line of Actual Control.

About Grey Zone Warfare

- Gray zone warfare has increasingly been the strategy selected by states that are determined to influence change without the risk of major escalation to outright military war.
 - Generally, gray-zone warfare are considered gradualist campaigns by state and non-state actors that combine non-military and quasi-military tools and fall below the threshold of armed conflict.
 - They aim to thwart, destabilize, weaken, or attack an adversary, and they are often tailored toward the vulnerabilities of the target state.
 - Activities can include political and election meddling, cyber threats and attacks, economic coercion, use of proxies, and many other measures.
 - ◆ For example, a worrying Chinese Grey-Zone Operations (CGZO) incident occurred in March 2021, when around 220 Chinese fishing boats bearing the Chinese ensign anchored off the Whitsun Reef - part of the contested Spratly Islands in the Philippines' Exclusive Economic Zone in the South China Sea.
 - Similarly, the complexity in the India-China gray zone is multi-dimensional, stemming from an intricate web of interconnected disputes that go beyond simple border disagreements.
 - ◆ These disputes involve a range of issues from territorial claims to resource rights, such as the sharing of water from rivers that originate in the Tibetan plateau—an area under Chinese control but considered vital to India's water security.

India's Preparedness against Grey-zone Warfare

- **Establishing theatre commands and border infrastructure:** the Army Chief highlighted the significance of theatre commands and border model villages under the Vibrant Villages Programme, a key initiative to develop remote areas along the frontier to prepare against Chinese Grey - Zone warfare.

- **Self-reliance in Defence Manufacturing:** Promoting it with the help of initiatives like Defence Procurement Procedure (DAP) 2020, etc.
- **Chief of Defence Staff:** Coordinate the working of the three Services (Indian Army, Air Force and Navy).
- **Cooperation with like-minded countries:** E.g. India has signed agreements like the General Security of Military Information Agreement (GSOMIA) with US.
- **Other:** Establishment of Indian Computer Emergency Response Team (CERT-In), etc.

EXPECTED QUESTION FOR UPSC CSE**Prelims MCQ**

Q. Which of the following disputes come under Grey Zone warfare:

1. Territorial claims
2. Sharing of water from rivers
3. Cyber attacks

Select the correct answer using code given below:

- | | |
|------------------|----------------|
| (a) 1 and 2 only | (b) 1 only |
| (c) 3 only | (d) 1, 2 and 3 |

Answer: (d)

ROBOTICS IN WARFARE

Why in News: The Indian Army has recently procured and has inducted 100 robotic MULES (Multi-Utility Legged Equipment) under the fourth tranche of emergency procurements.

Key Details

- Since the 2020 standoff with China in Eastern Ladakh, the Army has been looking for a series of technological innovations especially for high altitudes for a range of functions.
- The robotic mule is a high-endurance, agile and durable all-weather ground robot for use in a broad range of unstructured urban and natural environments for defence applications.

- The robotic mule can climb stairs, steep hills and other hurdles and can operate in extreme temperatures, ranging from -40 to +55 degrees Celsius and carry a payload of 15kg.
- It will decrease Army's dependency on animal transport for delivering supplies to soldiers at forward posts in border areas.
 - ◆ The Army anticipates that by 2030, animal transport usage could be reduced by 50–60%.
- In addition, these robots can offer strategic advantages by improving situational awareness and providing real-time data through high-resolution cameras and sensors.
- **Other Features:**
 - It has a payload capacity of 12 kg, and the equipment can be used on Wi-Fi or Long-Term Evolution (LTE).
 - For short ranges, Wi-Fi can be used, whereas LTE can be used for distances up to 10 km from a remote location.
 - The MULE is an analog-faced machine that is controlled by an easy-to-operate remote control.
 - It also has a firing platform can also be integrated into it.
 - Pre-fed missions can be uploaded on the system to convey what mission is to be completed, be it through waypoints or recorded missions.
 - It can navigate its trek through all terrains — be it snow-clad ground or rugged mountains.
 - It can climb mountains which may present upto 45 degrees incline/climb and also climb steps as high as 18 cm.

PRELIMS SPECIAL

Advantages of Robotics in Warfare

- **Sustainability:** Militaries around the world are offloading their hazardous and exhausting tasks to robots. Humans lose effectiveness after ten to twelve hours. They simply wear down physically and psychologically from doing the same task that long. ~ Unmanned systems, in contrast, do not need sleep, food or recreation. Certain battlefield tasks require incredibly high concentration, which is difficult for humans to sustain for long periods of time.
- **Need lesser breaks:** Robots need to take breaks only for recharging or refuelling, and the repetitive nature of complex, dangerous activities does not affect their efficiency or efficacy.
- **Operate in diverse climate:** Robotic systems can also operate in environments contaminated by biological, chemical or radiological weapons, where a human would have to wear a bulky suit and protective gear. They can sustain extremes of operating situations, like high 'G' turns that can render aircraft pilots inoperative. Faster Unmanned systems can fly faster and turn harder.

- **Under-water:** This is equally true at sea, and not just in underwater operations, where humans have to worry about small matters like breathing or suffering ruptured organs from water pressure. For example, small robotic boats have already operated in 'sea-state six', which is when the ocean is so rough that waves are eighteen feet high or more, and human sailors would suffer serious physical injury from all the tossing about.

Disadvantages of Robotics in Warfare

- **May perpetuate wars:** Eliminating the human element may inadvertently escalate both the size and frequency of wars. Without real risk and the correlated political pressure, the chances of them coming to an end would lessen.
- **Enemy differentiation:** There's also a potential issue when it comes to target differentiation. It's believed a robot could make mistakes in determining combatants from noncombatants, and increase civilian deaths as a result, not that this doesn't happen already.
- **Can be cyber hacked:** Finally, as advanced as a military robot may come to be, it's ultimately a computer, and as both movies and reality have shown us, they can be taken over. The concern here is that an enemy military or terrorist group could reverse-engineer the robotics technology and use it against us.

Conclusion

The geopolitical tensions between China and India have prompted the Indian Army to follow suit, incorporating AI and robotics into its strategic framework. This move aims to bolster operational efficiency, ensure personnel safety, and maintain a competitive edge in modern warfare.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following statements about the recent induction of robotic mules in the Indian army is / are correct?
1. Robotic mules can perform tasks that are dull, dirty or dangerous.
 2. Robotic mules can replace human soldiers in all combat roles.
 3. Robotic mules can perform tasks with greater accuracy and efficiency compared to humans.

Select the correct answer using the code below:

- (a) 1 and 2 only (b) 1 and 3 only
 (c) 3 only (d) 1, 2 and 3

Answer: (b)

Descriptive Question

- Q. Discuss the advantages and potential risks of using robotic systems in modern warfare. [10 marks] [150 words]

NATIONAL SECURITY STRATEGIES CONFERENCE

Why in News: The Union Home Minister has recently inaugurated the 7th National Security Strategies Conference 2024 in New Delhi.

Key Details

- The idea of National Security Strategies Conference was conceived by the Prime Minister during the DGsP/IGsP Conference with the objective of finding solutions to major National Security challenges through discussions amongst a unique mix of senior police leadership managing national security challenges, young police officers working at the cutting-edge level and domain experts of specialised fields.
- During the Conference, home minister proposed a detailed strategy to augment counter-terrorism efforts, including cooperation with international agencies and enhance capacities to prevent terror financing.
- He also emphasised the need for increased cooperation and coordination between National Investigation Agency (NIA) and State Anti-Terrorist Squad (ATs) to strengthen the counter-terrorism architecture.
- Home minister called upon all DGsP to strengthen the internal security architecture by embracing a multi-dimensional approach, data analytics and new techniques.
- Home Minister urged DGsP to ensure utilisation by the cutting-edge level of databases being maintained by central agencies.
- There is a need to identify emerging national security challenges, including narcotics, rogue drones and online fraud and tackle them before they became major challenges.

Challenges to India's Internal Security

- Insurgency:** Since its independence, India has witnessed numerous insurgencies in different parts of the country, particularly in Jammu and Kashmir, the North East and Central India, Khalistan.
- Cross-border infiltration
- Terrorism
- Organised crime
- Trafficking:** drug trafficking and human trafficking,
- Refugees:** Inflow of refugees and internal displacement
- Natural disasters
- Disease and Pandemic
- Propaganda and disinformation campaigns
- New age challenges:** Today, the rise of social media, dark net, crypto currency has given rise to new challenges.

External Security Environment and Internal Security

- India's external security environment is dynamic. The

external environment has a salutary impact on India's internal security.

- External factors are usually not in India's control. These need to be dealt through better intelligence, improved capabilities and focussed international cooperation.
- Examples**
 - Cross-border terrorism, radicalization
 - Illegal migrations and refugees (i.e. Sri Lanka, Bangladesh, Myanmar etc.)
 - Drugs and arms smuggling (Af-Pak)
 - Cyber space (Dark net)
 - Illegal activities on the high seas- proliferation, fishing.
 - Instability in the neighbourhood (Pakistan, Afghanistan, Myanmar etc.)

National Power

- In present time, national power is not limited to only military prowess, it also includes economic resilience, technological prowess, political stability-cum-diplomatic acumen and soft power capabilities.
 - The digital age has elevated the importance of cyberspace and cognitive space as a domain of power.

Components of National Power in 21st Century

Military Power (Hard Power) <ul style="list-style-type: none"> Traditional military power and strength remains the principle component of national power. It includes the size and capability of a nation's armed forces, technological advancements in defence systems, its threats, preparedness and its force projection capability. 	Soft Power <ul style="list-style-type: none"> It represents a nation's ability to influence others through cultural, educational, and diplomatic means rather than coercion. It includes the appeal of a country's political values, cultural exports, educational institutions, and international diplomatic influence.
Economic Power <ul style="list-style-type: none"> It is a critical pillar of national power as a robust economy provides the resources necessary for military capabilities, infrastructure development, and social programmes. 	Environmental Sustainability <ul style="list-style-type: none"> Environmental sustainability contributes to a nation's soft power capacity and long-term stability.
Technological Power <ul style="list-style-type: none"> Technology has become a tool of strategic competition and power play. Technology drives economic, political, diplomatic, and military power. Fiscal funding and human resource are vital for technological development. 	Human Capital <ul style="list-style-type: none"> Quality of a nation's workforce, education system, and healthcare infrastructure are vital components of national power. Human resource and human capital contributes to economic productivity and technological advancement.
Information Power <ul style="list-style-type: none"> In the era of different forms of media control and manipulation of information have become integral to national power. Countries that excel in information warfare, media influence, and strategic communication can shape narratives, influence public opinion, and gain an advantage in the global information landscape. 	Energy Security <ul style="list-style-type: none"> Energy is vital for economy of a nation and for day to day activities of its population. Therefore securing a stable and diverse energy supply is crucial for national power. Countries with diverse and sustainable energy sources reduce vulnerability to external disruptions and geopolitical tensions.
Diplomatic Power <ul style="list-style-type: none"> Diplomatic influence involves a nation's ability to build alliances, negotiate favourable agreements, and navigate international relations effectively. Skilled diplomacy enhances a country's standing in the global community and promotes its national interests. 	Resilience and Adaptability <ul style="list-style-type: none"> In the era of climate change effective adaptation to environmental changes and natural disasters is critical. Adaptation to shocks (economic, environmental, or geopolitical), exhibit the resilience power.

Way Forward: Recommendations

- National Security Strategy:** A well-defined 'India First' national security policy and strategy is imperative for a coherent pre-emptive and proactive strategic response.
- Enhancing Military Capabilities:** Investing in modernising the armed forces, with a focus on advanced technology, intelligence capabilities, and multi-domain joint force capability is imperative.

- **Counterterrorism and Intelligence Cooperation:** Strengthen counterterrorism efforts by enhancing intelligence capabilities and collaborating with international partners.
- **Diversify Energy Sources:** Promoting and adapting renewable energy and reducing the reliance on fossil fuels.
- **Cyber Resilience**
 - Strengthening cyber-domain to protect critical infrastructure, sensitive information, and financial systems.
 - Developing a robust cyber offensive and defensive strategy that includes pre-emptive, proactive and preventive measures, and effective response mechanisms.
- **Strategic Diplomacy:** Active participation in diplomatic initiatives to fortify multiple partnerships, and contribute to resolving regional and global challenges.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Recently, the 7th National Security Strategies Conference, 2024 was held in ?

- (a) Hyderabad (b) Chandigarh
(c) Delhi (d) Chennai

Answer: (c)

Descriptive Question

Q. Discuss the key challenges to India's internal security and suggest measures to enhance India's national security architecture. [15 marks] [250 words]

AKASHTER SYSTEM

Why in News: Indian Army has completed the acquisition of 100 Akashteer Air Defence Systems.

Key Details

- Amid heightened global security concerns, the Indian Army has significantly enhanced its air defence capabilities with the acquisition of 100 Akashteer air defence systems.
- Developed by Bharat Electronics Limited (BEL), these advanced Air Defence Control and Reporting Systems (ADCRS) will serve as a critical asset in safeguarding the country from aerial threats, including missile and rocket attacks.
- The successful delivery of these systems underscores India's commitment to bolstering its military's self-reliance and modernising its defence infrastructure.

Milestone in Indigenous Defence Manufacturing

- The journey toward acquiring these 100 Akashteer systems began in March 2023, when the Ministry of Defence contracted BEL, a government undertaking, for their production.
- The contract was part of India's broader push towards indigenization and enhancing the country's defence capabilities.
- In March 2024, BEL delivered the first Akashteer system to the Indian Army. By September 30, 2024, all 100 units had been successfully handed over, meeting the Army's critical operational timelines.

Role of Akashteer in Air Defence

- **Integrated system:** Akashteer is more than just an air defence system—it is a sophisticated, integrated control and reporting system designed to neutralize enemy threats swiftly. The system is capable of managing all aspects of air defence for the Army, integrating multiple radar systems, sensors, and communication technologies into a single operational framework.
- **Real-time battlefield view:** The Akashteer system provides a real-time battlefield view, allowing military personnel to detect, track, and engage aerial threats such as incoming missiles or enemy aircraft. It brings together various surveillance assets, radar systems, and communication nodes, enabling precise coordination of air defence operations. This enhances the Indian Army's ability to monitor airspace and deliver timely responses to any imminent threats.
- **Use in diverse roles:** The system's versatility makes it suitable for a wide range of operational environments. Whether deployed along contested borders or in strategic urban areas, Akashteer strengthens the Army's capability to protect key assets and infrastructure from aerial attacks.

Importance in the Broader National Security Context

- **As robust air defence system:** The integration of 100 Akashteer systems into the Indian Army's defence architecture is critical, especially in the context of evolving global threats.
 - The recent missile attacks in regions like Israel highlight the importance of having robust air defence systems capable of responding to advanced and high-speed missile threats. In this regard, Akashteer offers India the ability to monitor and respond to such attacks in real-time, reducing the risk of damage to strategic assets and military installations.
- **Increasing tensions with neighbours:** Additionally, this acquisition comes at a time when regional security concerns, including tensions with neighbouring countries, have underscored the need for India to upgrade its defence systems.
 - With the successful induction of Akashteer, the Indian Army has further fortified its defence against

- **South Korea** and **Serbia** have also reportedly developed thermobaric systems, further illustrating the global proliferation of this technology.

1	2	3
The use of thermobaric weapons has been the subject of significant ethical and legal debate.	In 1980, an effort was made to ban thermobaric weapons under the United Nations Convention on Certain Conventional Weapons, but it failed to gain sufficient support.	Their devastating effects on both infrastructure and human bodies have led to calls for regulation and, in some cases, outright bans.

Ethical and Legal Controversies

4	5	6
Critics argue that thermobaric bombs should be classified as weapons of mass destruction, especially when used in populated areas.	However, many nations maintain that thermobaric weapons are a necessary tool for specific military objectives, particularly in environments where fortified positions or tunnels make conventional explosives less effective.	The intense blast and vacuum effects can lead to horrific civilian casualties, particularly in urban warfare.

The Future of Thermobaric Weapons

- Despite the ethical concerns, thermobaric weapons remain a key component of military arsenals around the world.
- Their ability to destroy hardened targets and fortifications with fewer resources makes them a valuable asset in modern warfare.
- In urban combat, where enemy forces often hide in buildings or underground, thermobaric bombs provide a unique capability to flush out or eliminate entrenched positions.
- The continued development and proliferation of these weapons suggest that they will remain a fixture in global conflicts for the foreseeable future.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about thermobaric weapons:

1. They are also known as fuel-air explosives (FAEs).

2. They are banned under the Geneva Convention.

Which of the above statements is/are correct?

- (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2

Answer: (a)

MQ-9B DRONES

Why in News: Cabinet Committee on Security clears deals for 31 MQ-9B predator drones from US and two Indigenous Nuclear Attack Submarines.

Key Details

- The Cabinet Committee on Security approved high-profile deals for the purchase of 31 MQ-9B High Altitude Long Endurance (HALE) Unmanned Aerial Vehicles (UAV) from General Atomics of the U.S. as well indigenous construction of two Nuclear Attack Submarines (SSN).
- Approval from CCS is the final step and the MQ-9B deal now awaits formal conclusion.
- As part of the deal, General Atomics is scheduled to establish a Global Maintenance, Repair and Overhaul (MRO) facility in India which would count towards offset obligations.
- The first MQ-9B is to be delivered in 51 months and the last by 72 months, from the date of signing of contract and first payment.
 - The Indian armed forces will receive the MQ-9B armed High Altitude Long Endurance (HALE) Remotely Piloted Aircraft Systems (RPAS), manufactured by General Atomics, between 2029 and 2030.

Significance:

- It will bolster India's capability to meet current and future threats by enabling unmanned surveillance and reconnaissance patrols in sea lanes of operation.
- Further, it will also work in tandem with the US-origin P-8I long range maritime patrol aircraft significantly enhancing the Indian Navy's surveillance over the Indian Ocean Region.
- Further moreover, it will improve the security of a major defence partner, which continues to be an important force for political stability, peace, and economic progress in the Indo-Pacific and South Asia region.

- **Note:** BIS level 6 jackets, weighing 9.3 kg, offer protection to security personnel against sniper bullets with less than 25 mm, as well as against AK-47 rifles

DRDO Industry Academia Centre of Excellence (DIA-CoE)

- The DIA-CoE was formed by modifying the Joint Advanced Technology Center of DRDO at IIT Delhi in 2022 to involve Industry and Academia for defence R&D.
- It has been actively pursuing various projects on advanced technologies, involving DRDO scientists, academic researchers & industry partners.

EXERCISE MALABAR 2024

Why in News: The Opening Ceremony of MALABAR 2024 under the aegis of Eastern Naval Command was held recently onboard Indian Naval Ship Satpura at Visakhapatnam.

Key Details

- The multinational maritime exercise was initiated in 1992 as a bilateral exercise between India and the US, gained further traction as a significant maritime engagement, with Japan and Australia joining in subsequently.
- The 28th edition of exercise will be conducted in two distinct phases both at Harbour and at Sea. MALABAR 2024 will witness live weapon firings, complex surface, anti-air and anti-submarine warfare drills and joint manoeuvres.
- It has witnessed participation by destroyers, frigates, corvettes and fleet support ships along with long range maritime patrol aircraft, jet aircraft, integral helicopters and submarine assets.
- **Note:** The Malabar planning and exercise lead rotates each year among participating nations, along with the exercise location to demonstrate the combined ability to exercise across the entire Western Pacific and Indian Ocean.

SIGNIFICANCE

The Malabar Naval exercise brings together like-minded nations to further enhance the ability to train and operate jointly, towards establishing the synergy critical to achieve shared objectives.

The exercises highlight the convergence of views among the participating countries on maritime issues and their shared commitment to an open, inclusive Indo-Pacific and a rules-based international order.

The exercise is aligned with the Indian Government's vision of Security & Growth for All in the Region (SAGAR) and reflects India's growing engagement with like-minded nations.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following countries:

- | | |
|----------|--------------|
| 1. India | 2. USA |
| 3. Japan | 4. Australia |

How many of the above countries are participants of Exercise Malabar 2024?

- | | |
|----------------|--------------|
| (a) Only one | (b) Only two |
| (c) Only three | (d) All four |

(d) Answer

HELLFIRE MISSILES

Why in News: India has recently finalized a major deal with the United States for the procurement of 170 AGM-114R Hellfire missiles, marking a significant upgrade in its defence capabilities.

About Hellfire Missiles

- The 31 MQ-9B Remotely Piloted Aircraft or 'SeaGuardian' drones that India would be buying from the US will come loaded with 170 AGM-114R Hellfire missiles.
- The AGM-114 Hellfire is an American missile developed for anti-armor use, later developed for precision drone strikes against other target types, especially high-value targets.
- It has a multi-mission, multi-target precision-strike ability and can be launched from multiple air, sea, and ground platforms, including the MQ-1 Predator and MQ-9 Reaper.
- Most variants are laser-guided, with one variant, the AGM-114L "Longbow Hellfire", being radar-guided.
- It will offer enhanced guidance, capable of destroying hard, soft, and enclosed targets from higher altitudes.

Key Features of the Hellfire Missile:

- **Dimensions:** Length: 1.62 meters; Diameter: 17.7 centimeters; Wingspan: 0.71 meters
- **Weight:** between 45.4 kg and 49 kg
- **Propulsion System:** Powered by a single-stage solid-propellant rocket motor
- **Velocity:** The missile can reach speeds of up to 950 mph (approximately 1,530 km/h), allowing for rapid deployment and precision targeting in high-stakes combat environments.
- **Range:** With an effective operational range between 7 to 11 kilometers, the Hellfire missile provides tactical flexibility, allowing it to engage a variety of targets from a safe distance.
- **Guidance:** Semi-active laser / Millimeter-wave radar guidance

NON-KINETIC WARFARE

Why in News: The Parliamentary Standing Committee on Defence to study India's preparedness to deal with Non-Kinetic Warfare.

Key Details

- Indian armed forces' preparedness to deal with "hybrid warfare" is one of the 17 subjects that the Parliamentary Standing Committee on Defence has narrowed down for deliberations for the year.
- A member of the committee, spoke extensively on the growing danger of "non-kinetic warfare" citing the examples of ongoing Russia-Ukraine and Israel-Palestine conflicts, where these methods have been deployed.
- Members contended that the future wars will be fought using these tools and urged chairman and BJP MP Radha Mohan Singh, at the committee's first meeting on October 15, to ensure that the parliamentary panel closely investigates the Army's preparedness to face these threats.
- Several other members concurred with the view, citing the recent spate of pager blasts in Lebanon, as an example of a "non-kinetic warfare".

About Non Kinetic Warfare

- Kinetic warfare typically means military means employing a range of weapons. Non-kinetic warfare is an evolving concept, it goes beyond the usual military tactics and can involve electronic warfare, cyber, information, psychological and economic among others. Importantly, it can involve non-military stakeholders too.
- With technological progress, many believe that the non-kinetic warfare can turn out to be deadlier than the traditional methods and conflicts may be won by non-kinetic means even before a bullet is fired.
- For example, a massive cyber or malware attack on critical infrastructure of a country such as power grids and hospitals can cripple a nation. Such cyberattacks have been seen globally.

About Hybrid Warfare

- It is a theory of military strategy, first proposed by Frank Hoffman, Which employs political warfare and blends conventional warfare, irregular warfare, and cyberwarfare with other influencing methods, such as fake news, diplomacy, lawfare, regime change, and foreign electoral intervention.

- By combining kinetic operations with subversive efforts, the aggressor intends to avoid attribution or retribution.



PRELIMS SPECIAL

About the Standing Committee on Defence

Composition of the Committee:

- The Committee consist of 31 Members; 21 Members from Lok Sabha, nominated by the Speaker, Lok Sabha and 10 from Rajya Sabha nominated by the Chairman, Rajya Sabha.
- The Chairperson of the Committee is appointed by the Speaker from amongst the Members of the Committee from Lok Sabha.
- The term of office of the Members of the Committee does not exceed one year.

Functions of the Committee:

- To consider the Demands for Grants of the Ministry of Defence, make reports on the same and present them to the Parliament.
- To examine such Bills pertaining to the Ministry of Defence as are referred to the Committee by the Speaker, Lok Sabha or the Chairman, Rajya Sabha as the case may be, and make reports thereon.
- To consider Annual Report of the Ministry of Defence and make reports thereon.
- To consider National Basic Long-Term Policy Documents presented to the Houses, if referred to the Committee by the Speaker, Lok Sabha or the Chairman, Rajya Sabha as the case may be, and make reports thereon.

STRENGTHENING POCSO ACT, 2012

Why in News: Recently, the Supreme Court expanded the scope of POCSO act regarding child pornography.

Key Details

- The Supreme Court recently ruled that watching or possessing sexually explicit material involving minors which include photography, video, digital or computer-generated image, is illegal under the Protection of Children from Sexual Offences (POCSO) Act.
- The ruling came in response to an appeal by NGO Just Right for Children Alliance, challenging a 2021 Madras High Court decision.
 - It overturned a controversial Madras high court order, and urged the Union government to promote sex education in the country and to change the legal definition of “child pornography” to “Child Sexual Exploitative and Abuse Material (CSEAM)” to reflect the true gravity of such crimes.
 - ◆ The Supreme Court ruled that storing or viewing child pornography on digital devices can be an offence under the Protection of Children from Sexual Offences (Pocso) Act, 2012, if there is an intention to gain or benefit from it.
 - ◆ The Court clarified that for an Act to constitute a crime under Section 15 of the Pocso Act, there must be evidence of intent to distribute, transmit, or otherwise facilitate the sharing of such material.
- It emphasised that the consumption of sexually explicit content involving minors is not just an act of personal vice but a severe criminal offence that perpetuates the cycle of child abuse.
- The term ‘child sexual exploitative and abuse material’ or ‘CSEAM’ more accurately reflects the reality that these images and videos are not merely pornographic but are records of incidents, where a child has either been sexually exploited and abused or where any abuse of children has been portrayed through any self-generated visual depiction.

About POCSO

The Protection of Children from Sexual Offences Act (POCSO for short) was passed in 2012 to comprehensively deal with the issue of sexual offences against children.

- POCSO not only spells out the punishments for offences, but also sets out a system for support of victims and improved methods for catching offenders.
- Under POCSO ‘child’ means any person below the age of 18 years. The child could be male or female. The offender too could be male or female.
- The POCSO Act specifies a variety of offences under which an accused can be punished. It recognizes forms of penetration other than penile-vaginal penetration and criminalises acts of immodesty against children too.

Offences Under the Act Include

Penetrative Sexual Assault: Insertion of penis/object/another body part in child’s vagina/urethra/anus/mouth, or asking the child to do so with them or some other person

- **Sexual Assault:** When a person touches the child with sexual intent, or makes the child touch them or someone else
- **Sexual Harassment:** passing sexually cultured remark, sexual gesture/noise, repeatedly following, flashing, etc.
- Child Pornography
- **Aggravated Penetrative Sexual Assault/ Aggravated Sexual Assault**

Contention around implementation of POCSO

- **Definition of child :** The Act defines a child as a person under the age of 18 years. However, this definition is a purely biological one, and does not take into account people who live with intellectual and psycho-social disability.
- **Criminalization of consensual relationships:** The law presumes that all sexual acts with children under the age of 18 is a sexual offence, this also includes sexual acts where both the individuals are under the age of 18. Therefore, two adolescents who engage in consensual sexual act will also be punished under this law,
- **Mandatory reporting:** According to the Act, every crime of child sexual abuse should be reported. If a person who has information of any abuse fails to report, they may face imprisonment up to six months or may be fined or both
- Contradiction with the Medical Termination of Pregnancy Act, 1971
- Under this Act, if any girl under 18 is seeking abortion the service provider is compelled to register a complaint of sexual assault with the police. However, under the Medical Termination of Pregnancy Act, it is not mandatory to report the identity of the person seeking an abortion.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to the 'Protection of Children from Sexual Offences (POSCO) Act, 2012', consider the following statements:

1. Under Protection of Children from Sexual Offences Act, 2012 Child means any person below the age of 16 years.
2. It is gender neutral law.
3. It also criminalizes consensual relationship between adolescents.

Which of the statements given above are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 only (d) 1, 2 and 3

Answer: (b)

Descriptive Question

Q. Has POCSO Act been able to serve its purpose. Discuss in light of recent judgement of the Supreme Court expanding the scope of POCSO act regarding child pornography. [15 marks. 250 words]

ROLE OF WOMEN IN DEVELOPMENT 2024 SURVEY

Why in News: UN Women has recently released a World survey on the role of women in development 2024.

World Survey on the Role of Women in Development

- The World survey on the role of women in development is presented every five years to the Economic and Financial Committee of the United Nations General Assembly.
- It provides a unique opportunity to submit a research product covering economic and development issues with a gender perspective, for deliberation by UN Member States.
- **Theme of 2024 Edition:** Harnessing social protection for gender equality, resilience and transformation.
- This ninth edition takes stock of progress, gaps, and challenges in building comprehensive, gender-responsive social protection systems.
- It provides examples and recommendations on how these systems can better protect women and girls from poverty and deprivation, strengthen their resilience to shocks, and transform social norms, structures, and institutions that keep them from realizing their full potential.

Challenges: Barriers and Gender Biases

- **Legal and policy frameworks** that exclude specific groups of women and girls.

- **Programme design decisions** that ignore the complex vulnerabilities they face.
- The **lack of coordination between social protection and public services**, particularly care services critical to reducing time and income poverty among women and girls.
- **Delivery mechanisms** that ignore gender-specific barriers to registration, enrolment or receipt of payments and services.
- Inadequate financing
- **Insufficient mechanisms for monitoring, participation and accountability** to ensure that social protection providers respect, protect and fulfil the rights of women and girls.

Recommendations: Ways to Overcome Barriers

- **Address gender gaps and biases in existing social protection systems, policies and programmes.**
 - Work towards universal, gender-responsive social protection systems, including social protection floors, that provide comprehensive coverage for the risks and vulnerabilities that all women and girls, in all their diversity, may face across the life course.
 - Expand the coverage and adequacy of non-contributory programmes, such as universal child, maternity/parental and pension benefits, as part of a gender-responsive social protection floor.
- **Adapt social protection policies and programmes to meet the needs of women and girls during sudden and protracted crises.**
 - Design and implement emergency responses that are flexible and inclusive, based on a robust understanding of women's and girls' risks and needs, and attuned to the precise nature of the shock and the maturity of existing social protection systems, policies and programmes.
 - Expand routine gender-responsive social protection with scalable shock components, both anticipatory and reactive, that shield women and girls from the immediate impacts of crises.
- **Improve coordination with gender-responsive employment policies and public services.**
 - Maximize the impacts of cash transfer programmes through access to complementary benefits and services, such as livelihood support, skills training and education, and health and childcare.
 - Promote coordination between social protection systems and measures to prevent and respond to gender-based violence, including through joint planning, training of social protection case workers and robust referral pathways.
- **Take a rights-based approach to social protection delivery.**
 - Design, implement and monitor delivery mechanisms

with the end-user – and rights-holder – in mind, guaranteeing dignity, agency and access throughout the process.

- Ensure adequate staffing and decent working conditions for front-line social protection workers, with greater attention to safety concerns and unpaid care responsibilities.
- **Scale up financing for social protection and gender equality.**
 - Extend contributory social protection to informal and other workers with low contributory capacity, particularly women.
 - Harness international climate finance to strengthen gender-responsive social protection systems.
- **Strengthen participation and accountability for gender-responsive social protection.**
 - Conduct participatory, community-led assessments of gender-specific risks and vulnerabilities, with particular efforts to understand the experiences of all women and girls facing multiple, intersecting forms of discrimination.
 - Involve women’s and workers’ rights organizations in the design, implementation and monitoring of social protection systems, policies and programmes, and adequately recognize their contributions.
- **Improve data, evidence and knowledge on gender-responsive social protection.**
 - Invest in the development of scalable methodologies to adequately capture the complexity of poverty and vulnerability among women, with attention to inequalities within the household and factors such as control over household resources, decision-making power and time use.
 - Improve the collection and use of data, particularly administrative data, disaggregated by sex, age, income, location and other characteristics, on the coverage and adequacy of social protection benefits, including child, unemployment, disability, maternity and pension benefits.

Conclusion and Way Forward

- **Short Term:** There is an urgent need to adapt existing policies and programmes to respond better to gender-specific risks and vulnerabilities in both sudden-onset and protracted crises.
- Achieving comprehensive, gender-responsive social protection systems will require long-term investments in fiscal, administrative and technical capacity. Countries can progress gradually in that direction.

PRELIMS SPECIAL

UN Women

- In July 2010, the United Nations General Assembly created UN Women, the United Nations Entity for Gender Equality and the Empowerment of Women.
- UN Women is the United Nations entity dedicated to gender equality and the empowerment of women.
- A global champion for women and girls, UN Women was established to accelerate progress on meeting their needs worldwide.
- **Governance:** According to UN General Assembly resolution 64/289, which established UN Women, the organization is governed by a multi-tiered intergovernmental governance structure as follows:
 - The General Assembly, the Economic and Social Council and the Commission on the Status of Women shall constitute the **multi-tiered intergovernmental governance structure for the normative support functions** and shall provide normative policy guidance to the Entity.
 - The General Assembly, the Economic and Social Council and the Executive Board of the Entity shall constitute the **multi-tiered intergovernmental governance structure for the operational activities** and shall provide operational policy guidance to the Entity.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. has Recently released a 'World Survey on the Role of women in development 2024.
- (a) World Bank
 - (b) World Economic Forum
 - (c) International Labour Organization
 - (d) None of the above

Answer: (d)

Descriptive Question

- Q. Harnessing social protection is a prerequisite for gender equality, resilience and transformation. Comment on the challenges and gender biases and recommend solutions to overcome barriers hampering Women’s role in development. [15 marks] [250 words]

WHO GUIDELINES FOR CLINICAL TRIALS

Why in News: The World Health Organization (WHO) has recently launched “Guidance for best practices for clinical trials”.

Key Findings

- The WHO's guidance introduces essential scientific and ethical considerations for trial design.
- It also outlined a comprehensive framework anchored in key pillars designed.
- The four key pillars to reinforce the global clinical trial ecosystem, emphasizing inclusivity, ethics, and transparency:
 - Clinical research governance, funding and policy frameworks: clinical trials should align with national and regional research priorities, with coordinated funding and evidence synthesis that translates into public health benefits.
 - Regulatory systems: regulatory authorities should have oversight for medicinal products including post-marketing surveillance and support of clinical trials using risk-based proportionate approaches.
 - Ethical oversight: ethical considerations permeate all aspects of health, hence, interagency coordination, and harmonization is vital to reduce duplication and ensure a rigorous and prompt authorization process.
 - Clinical research infrastructure: adequate physical infrastructure and trial personnel are essential for efficient high-quality clinical trials.

About Clinical trials

- **Definition:** Clinical trials are a type of research that studies new tests and treatments and evaluates their effects on human health outcomes. People volunteer to take part in clinical trials to test medical interventions including drugs, cells and other biological products, surgical procedures, radiological procedures, devices, behavioural treatments and preventive care.
- **Approval:** Clinical trials are carefully designed, reviewed and completed, and need to be approved before they can start.
- **Eligibility:** People of all ages can take part in clinical trials, including children.
- There are **4 phases of biomedical clinical trials:**
 - **Phase I studies** usually test new drugs for the first time in a small group of people to evaluate a safe dosage range and identify side effects.
 - **Phase II studies** test treatments that have been found to be safe in phase I but now need a larger group of human subjects to monitor for any adverse effects.
 - **Phase III studies** are conducted on larger populations and in different regions and countries, and are often the step right before a new treatment is approved.
 - **Phase IV studies** take place after country approval and there is a need for further testing in a wide population over a longer timeframe.

Types of Clinical Trials

- Clinical studies broadly fall into two groups: noninterventional and interventional.
- **Non-interventional:** Non-interventional studies are observational in nature (hence sometimes known as observational studies), in which health outcomes are typically compared between individuals who received or were exposed to a certain factor and those who did not, and in which the allocation to treatment or exposure is not predetermined by a study protocol.
- **Interventional:** In contrast, interventional clinical studies (known as clinical trials) evaluate the effects of prospectively assigning subjects to one or more interventions on health outcomes. For comparisons of two or more interventions, a key aspect of such prospective assignment is the process of randomization to help to ensure that the efficacy and safety of treatments are assessed reliably.

Importance of Clinical trials

- Measuring the magnitude and distribution of the health problem;
- Understanding the diverse causes or the determinants of the problem, whether they are due to biological, behavioural, social or environmental factors;
- Developing solutions or interventions that will help to prevent, mitigate or cure the problem;
- implementing or delivering solutions through policies and programmes; and
- evaluating the impact of these solutions on the level and distribution of the problem.

Challenges to Clinical trial

- **Weak evidence base and design:** in many areas of health the evidence base remains weak, with decision-making processes lacking results from enough well-designed and well conducted clinical trials. This waste in clinical trials results from various factors. These include:
 - clinical trials never being done or completed,
 - failure to articulate clear research questions,
 - duplication of previous research,
 - use of inefficient trial processes,
 - failure to produce scientifically robust and clinically relevant answers, or
 - results never being published.
- **Funding:** A lack of adequate funding for clinical trials remains a major issue globally with ongoing disparities in investment and access to clinical trial infrastructure especially when taken in context of global disease burden. The result is inequity and a lack of justice in fairly accessing affordable, safe and efficacious interventions, the consequences of which were particularly highlighted during the COVID-19 pandemic.

- **Limited capacity in Low and Middle income Countries (LMICs):**
 - Populations in LMICs bear the highest burden of preventable disease globally, facing several specific challenges.
 - The limited health care and research capacity and/or commercial viability in low and middle-income countries (LMICs) means that clinical research in these regions has often focused on observational or implementation studies conducted after the registration or approval of an intervention in High income Countries (HICs).
 - **Diversity in trial groups:** A further major challenge is that clinical trial cohorts have often lacked diversity, with under-representation of certain populations, resulting in them being under-served by clinical trials, such as age extremes: neonates, infants, children and adolescents, women of child-bearing age, pregnant and lactating women different ethnic minority groups.

Clinical trials in India

- In India, the Clinical Trials Registry-India (CTRI) is where every trial is required to be registered before commencing.

About CTRI

- Hosted with the Indian Council of Medical Research's National Institute of Medical Statistics, the CTRI is a free, online public-record system to register clinical trials being conducted in India.
- It was launched in July 2007 for use on a voluntary basis. In June 2009, the Drug Controller General of India (DCGI) mandated all trials to be registered there.

Problems with India's clinical trials registry

- **Missing data** – A review of available data a few years ago showed that CTRI records of enrollment are inconsistent, with only 281 of 606 (46%) trials being updated after final enrollment.
- **Classification of type of study** – For certain trials, it is important to know the nature of the intervention. CT.gov provides 11 distinct categories, but the CTRI provides a free text field to fill in the required information. This has resulted in over 1,000 categories within the registry, with many of them being atypical. Though this is an important field, the CTRI also marks it as 'optional', leading to a great number of trials not providing this information.
- **Internal inconsistencies** – Trials have also been known to have internal inconsistencies, such as filling the wrong type of trial.
- **Confusion over definitions** – The article stated that a number of entries are inaccurate due to confusion over definitions. For example, some 'interventional trials' have been listed as 'observational trials' due to a "lack of understanding of the terms".
- **Incomplete/non-standard information** – Non-standardised information about cities may also cause confusion and repetition in the registry.

Laws that govern clinical trials in India:

- **Drugs and Cosmetics Act, 1940:** Regulates the import, manufacture, and distribution of drugs in India.
- **Drugs and Cosmetics Rules, 1945:** Regulates clinical trials in India.
- **Medical Council of India (MCI) Act:** Applies to all medical professionals and requires clinical trials to adhere to the ICMR standards.
- **Central Drugs Standard Control Organization (CDSCO):** The regulatory authority responsible for clinical trial approval, oversight, and inspections.
- **Drugs Controller General of India (DCGI):** The head of CDSCO, who grants permission for clinical trials and regulates the sale and importation of drugs for clinical trials.
- **Indian Council of Medical Research (ICMR):** Founded to encourage a research culture in India and establish infrastructure.
- **Institutional Ethics Committee (IEC):** Reviews research proposals and functions according to standard operating procedures (SOPS).

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Recently 'Guidelines for Best Practices for Clinical Trials' was in news it was released by?

- (a) UNICEF (b) WHO
(c) EU (d) None of The Above

(b) Answer

Descriptive Question

Q. What is the administrative framework for Clinical trials in India. Discuss the need for ethical trials and challenges associated with trials. [15 marks] [250 words]

MATERNAL HEALTH AND FAMILY PLANNING IN INDIA

Why in News - The United Nations Population Fund (UNFPA) has recently recognized India's extraordinary progress in advancing Maternal Health and Family Planning.

Key Details

- The United Nations Population Fund (UNFPA) has recognized India's extraordinary progress in advancing Maternal Health and Family Planning.
- Honouring India's Leadership in Maternal Health and Family Planning in New Delhi, Executive Director of UNFPA Dr. Natalia Kanem underlined UNFPA's unwavering commitment to partnering with India toward women's health and well-being.

- Dr. Kanem commended India’s monumental efforts in reducing the Maternal Mortality Ratio (MMR) by an impressive 70% between 2000 and 2020, positioning the country to achieve the Sustainable Development Goal (SDG) target of an MMR below 70 before 2030.
- This remarkable progress has saved the lives of thousands of women across the country, particularly those from marginalised communities.

Factors that have contributed to a reduction in India’s Maternal Mortality Ratio (MMR)

Increased quality of Health Services:

- India has made a concerted push to increase access to quality maternal health services.
- Since 2005, coverage of essential maternal health services has doubled, while the proportion of institutional deliveries in public facilities has almost tripled, from 18% in 2005 to 52% in 2016 (including private facilities, institutional deliveries now stand at 79%).
- **Increased penetration of Government schemes:** State-subsidised demand-side financing like the Janani Shishu Suraksha Karyakram – which allows all pregnant women delivering in public health institutions to free transport and no-expense delivery, including caesarian section – has largely closed the urban-rural divide traditionally seen in institutional births. Overall, 75% of rural births are now supervised, as compared to 89% of urban deliveries.

Improving Social factors:

- India has put significant emphasis on mitigating the social determinants of maternal health.
- Women in India are more literate than ever, with 68% now able to read and write.
- They are also entering marriage at an older age, with just 27% now wedded before the age of 18.
- These factors alone have enabled Indian women to better control their reproductive lives and make decisions that reflect their own interests and wants.
- Involvement of the private sector:
- The government has put in substantive efforts to facilitate positive engagement between public and private health care providers.
- Campaigns such as the Pradhan Mantri Surakshit Matritva Abhiyan have been introduced with great impact, allowing women access to antenatal check-ups, obstetric gynaecologists and to track high-risk pregnancies – exactly what is needed to make further gains and achieve the SDG targets.

Government Schemes

- **Surakshit Matritva Aashwasan Yojana (SUMAN):**
- **SUMAN Yojana or Surakshit Matritva Aashwasan Yojana** is a maternity benefit initiative launched by the Ministry of Union Health and Family Welfare.
- This program provides affordable and quality healthcare solutions to pregnant women and newborns.

- Under this scheme, pregnant women, sick newborns, and mothers receive zero expense access up to six months after delivery.
- They receive treatment from quality hospitals and professionals.
- The PMSMA programme allows four antenatal check-ups during the 1st trimester and check-ups under Pradhan Mantri Surakshit Matritva Abhiyan.
- **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)**
- The Pradhan Mantri Surakshit Matritva Abhiyan has been launched by the Ministry of Health & Family Welfare (MoHFW), Government of India.
- The program aims to provide assured, comprehensive and quality antenatal care, free of cost, universally to all pregnant women on the 9th of every month.
- Under the campaign, a minimum package of antenatal care services is to be provided to the beneficiaries on the 9th day of every month at the Pradhan Mantri Surakshit Matritva Clinics to ensure that every pregnant woman receives at least one checkup in the 2nd/ 3rd trimester of pregnancy. If the 9th day of the month is a Sunday / a holiday, then the Clinic should be organised on the next working day.
- **Midwifery Services Initiative**
 - The ‘Midwifery Services Initiative’ aims to create a cadre of Nurse Practitioners in Midwifery who are skilled in accordance to ICM competencies, knowledgeable and capable of providing compassionate women-centre, reproductive, maternal and newborn health care services and also develop an enabling environment for integration of this cadre into the public health system, in order to achieve the SDGs for maternal and newborn health.

Objectives

- To provide access to quality maternal and newborn health services and promote natural birthing by promoting positive child birthing experience
- To promote respectful maternity care throughout pregnancy and child birth.
- To identify, manage, stabilise and/or refer as needed, women and their newborns experiencing complications.
- To decongest higher level of healthcare facilities.
- To expand access to quality maternal and neonatal services in remote areas including pockets of high home delivery rates and urban slums.

PRELIMS SPECIAL

About UNFPA

- The United Nations Population Fund (UNFPA), formerly the United Nations Fund for Population Activities, is a UN agency aimed at improving reproductive and maternal health worldwide.
- Its work includes developing national healthcare strategies and protocols, increasing access to birth control, and leading campaigns against child marriage, gender-based violence, obstetric fistula, and female genital mutilation

- The UNFPA supports programs in more than 144 countries across four geographic regions: Arab States and Europe, Asia and the Pacific, Latin America, the Caribbean and Africa.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Maternal Mortality Ratio (MMR):

1. India reduced Maternal Mortality Ratio (MMR) by 70% between 2000 to 2020.
2. Sustainable Development Goal (SDG) 3 has target of below 70 before 2030.

Which of the statement/s give above are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) None

Answer: (c)

NATIONAL HEALTH ACCOUNTS (NHA) ESTIMATES FOR INDIA

Why in News: Union Health Ministry has released National Health Accounts (NHA) Estimates for India 2020-21 and 2021-22.

Key Details

- These estimates are the eighth and ninth in the series of reports released annually by the Union Ministry of Health & Family Welfare.
- National Health Accounts Technical Secretariat (NHATS) prepared the National Health Accounts (NHA) estimates for 2021-22 with constant guidance and support from the NHA Steering Committee and the NHA Expert Group for India.
- The methodology taken for these NHA estimates has improved over the last 9 years and has resulted in a more robust and accurate account of the government's expenditure on Health.
- The NHA estimates are based on the globally accepted framework of 'A System of Health Accounts (SHA), 2011' which facilitates inter-country comparisons.

Health Accounts

- Health Accounts describe health expenditures and systematic description of the flow of funds for a financial year in India.
- It answers important policy questions such as what the sources of healthcare expenditures are, who manages these, who provides healthcare services, and which services are utilized.

- Focus is on describing Current Health Expenditures (CHE) and their details presented according to:
 - **Revenues of healthcare financing schemes** - entities that provide resources to spend for health goods and services in the health system.
 - **Healthcare financing schemes** - entities receiving and managing funds from financing sources to pay for or to purchase health goods and services.
 - **Healthcare providers** - entities receiving finances to produce / provide health goods and services.
 - **Healthcare Functions** - describe the use of funds across various health care services.

Key Health Expenditure Estimates for India

- For the year 2021-22, Total Health Expenditure (THE) for India is estimated to be Rs. 9,04,461 crores (3.83% of GDP and Rs 6,602 per capita).
- THE constitutes current and capital expenditures incurred by Government and Private Sources including External/Donor funds.
- Current Health Expenditure (CHE) is Rs. 7,89,760 crores (87.32% of THE) and capital expenditures are Rs. 1,14,701 crores (12.68% of THE).
- Capital expenditures are reported for all sources of Government (Union Government is Rs. 49,707 crores; State Government Rs. 59,550 crores; Corporations Rs. 3,638 crores; External Donors Rs. 1,806 crores).
- Government Health Expenditure (GHE) including capital expenditure is Rs. 4,34,163 crores (48.00 % of THE, 1.84% GDP, and Rs. 3,169 per capita).
 - This amounts to about 6.12% of General Government Expenditure in 2021-22.
 - The Union government's share in GHE is about 41.8% while the share of State Governments is about 58.2%.
- Households' Out-of-pocket expenditure on health (OOPE) is Rs. 3,56,254 crores (39.4% of THE, 1.51% of GDP, Rs. 2,600 per capita).
- Private Health Insurance expenditure is Rs. 66,975 crores (7.40% of THE).

Key Observations from the Report

- The NHA estimates for 2021-22 show that Government expenditure for healthcare continues to increase in the country, highlighting the efforts of the Government to increase public investments in the health sector.
- The share of Government Health Expenditure (GHE) in the overall GDP of the country has increased from 1.13% in 2014-15 to 1.84% in 2021-22. In terms of share in the General Government Expenditure (GGE), it has increased from 3.94% in 2014-15 to 6.12% in 2021-22.
- In per capita terms, GHE has tripled, from Rs. 1,108 to Rs. 3,169 between 2014-15 to 2021-22. The Government

spending on health between 2019-20 and 2020-21 increased by 16.6%, while between 2020-21 and 2021-22, it grew by an unprecedented rate of 37%, highlighting the proactive role played by the Government in tackling the COVID-19 pandemic.

- The increase in Government spending on health has an important implication for the reduction of financial hardship endured by households.
- In the Total Health Expenditure (THE) of the country between 2014-15 and 2021-22, the share of GHE has increased from 29% to 48%. During the same period, the share of Out-of-Pocket Expenditure (OOPE) in THE declined from 62.6% to 39.4%.
- The continuous decline in the OOPE in the overall health spending vindicates the substantial efforts made by the Government in the progress towards ensuring financial protection and Universal Health Coverage for its citizens.
- Another positive trend in the country's health financing space is the increase in Social Security Expenditure (SSE) on healthcare.
- This increase in social security has a direct impact on reducing out-of-pocket payments. A robust social security mechanism ensures that individuals will not face financial hardship and the risk of poverty as a consequence of accessing essential healthcare services.
- The share of SSE on health, which includes Government-funded health insurance, medical reimbursement to Government employees, and social health insurance programs, in THE, has increased from 5.7% in 2014-15 to 8.7% in 2021-22.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the National Health Accounts (NHA) Estimates for India 2021-22 consider the following statements:

1. Government expenditure continues to increase in country.
2. The share of out of expenditure on health is continues to increase in country.

Which of the statement/s give above are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) None

Answer: (a)

INDIA COMMITTED TO IMPROVE SOCIAL DETERMINANTS OF HEALTH

Why in News: India has reaffirmed its commitment to improving social determinants of health (SDH) during the G20 Joint Finance-Health Task Force (JFHTF) High-Level Meeting held at the 79th session of United Nations General Assembly (UNGA).

Key Details

- India has made considerable progress in addressing core SDH factors such as housing, sanitation, water access, and income security.
 - Flagship programs such as Ayushman Bharat, Swachh Bharat Mission (Clean India Mission), Jal Jeevan Mission (Water for Life), and Pradhan Mantri Awas Yojana (Housing for All), have brought transformative change across the country.
- Indian highlighted the success of Pradhan Mantri Jan Arogya Yojana (PM-JAY).
 - The scheme has not only improved access to tertiary and secondary healthcare but also enhanced health outcomes, particularly in non-communicable diseases.
- India emphasized the importance of data in driving effective health policies.
- It also stressed that improving data availability and design, particularly on cross-sectoral SDH indicators, is critical for policymakers to prioritize health investments that yield measurable results.
- India reiterated the need for standardization of data sources, ensuring that they are globally recognized and credible.
 - This will enable more accurate measurement of the impact of health investments, facilitate cross-sectoral analysis, and create a foundation for evidence-based policymaking.
- The Indian delegation called for G20 member nations to adopt a unified approach toward data collection and analysis to enhance health systems globally.
- India explored the potential of debt-for-health swaps, a mechanism that could ease financial strain while investing in health equity.
- India expressed its appreciation for the focus on SDH during the G20 meeting and reiterated its commitment to advancing health equity through strategic investments and data-driven policymaking advancing a shared vision of "Health for All".

PRELIMS SPECIAL

Social Determinants of Health

- The social determinants of health (SDH) are the non-medical factors that influence health outcomes.
- They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life.
- These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems.
- The SDH have an important influence on health inequities - the unfair and avoidable differences in health status seen within and between countries.
- In countries at all levels of income, health and illness follow a social gradient: the lower the socioeconomic position, the worse the health.
- The following list provides examples of the social determinants of health, which can influence health equity in positive and negative ways:
 - Income and social protection
 - Education
 - Unemployment and job insecurity
 - Working life conditions
 - Food insecurity
 - Housing, basic amenities and the environment
 - Early childhood development
 - Social inclusion and non-discrimination
 - Structural conflict
 - Access to affordable health services of decent quality
- **Significance**
 - Research shows that the social determinants can be more important than health care or lifestyle choices in influencing health.
 - For example, numerous studies suggest that SDH account for between 30-55% of health outcomes.
 - In addition, estimates show that the contribution of sectors outside health to population health outcomes exceeds the contribution from the health sector.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following schemes of government of India

1. Swachh Bharat Mission
2. Jal Jeevan Mission
3. PM Awas Yojana

How many of the above schemes helped to improve Social Determinants of Health?

- (a) Only one (b) Only two
(c) All three (d) None

(c) Answer

TUBERCULOSIS PATIENTS

Why in News: The Union Health Minister has recently launched initiatives to boost Nutrition Support for TB Patients and their Families

Key Details

- The Union Health Minister informed that the monthly nutrition support under Nikshay Poshan Yojana has been doubled from the existing 500 rupees to 1000 rupees for all TB patients during the period of treatment.
 - He said that the government has also decided to introduce energy-dense nutrition supplementation for all patients with BMI less than 18.5kg/m² at the time diagnosis.
 - The government also decided to permit expansion of scope and coverage of Nikshay Mitra initiative under Pradhan Mantri TB Mukh Bharat Abhiyaan (PMTBMBA) including the family members of TB patients.
 - The enhancement of NPY support will benefit all 25 lakh TB patients annually and the introduction of Energy Dense Nutritional Supplementation (EDNS) would cover approximately 12 lakh underweight patients.
 - ◆ EDNS will be provided to all eligible patients for the first two months of their treatment.
- In addition to supporting TB patients, Ni-kshay Mitras will now provide food baskets to the household contacts of TB patients to improve their immunity.
 - This initiative is expected to significantly reduce out-of-pocket expenses incurred by TB patients and their families.

Initiatives by Government for T.B. Eradication

- From April 2018 till date, over 79 lakh people received benefits on TB treatment across the country via Direct Benefit Transfer (DBT).
- As on March 09, 2023, 9.55 lakh consented TB patients across the country have been adopted by Ni-kshay Mitra.
- More than 74,000 Ni-kshay Mitras have come forward to support over 10 lakh TB patients across the country.
- Rapid Molecular Diagnostic Machines scaled up from 40 in 2014 to 5,090 in 2022
- The estimates of Drug Resistant TB in India have reduced by 20% from 1.49 lakh in 2015 to 1.19 lakh in 2021.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Trachoma disease:

1. Trachoma is a eye disease caused by bacteria.
2. It is one of the leading causes of blindness globally.
3. India eliminated Trachoma as public health problem in 2022.

Which of the statements given above are correct?

- (a) 1 and 2 only (b) 2 and 3 only
 (c) 1 only (d) 1, 2 and 3

Answer: (a)

CURBING THE GROWING ANTIMICROBIAL RESISTANCE

Why In News: The Drugs Technical Advisory Board (DTAB) has recently recommended the inclusion of all antibiotics in the definition of new drugs in the New Drugs and Clinical Trial (NDCT) Rules, 2019.

Key Details

- The recommendation to the Drugs Consultative Committee (DCC) is aimed at curbing the growing antimicrobial resistance which is now recognised as a public health threat globally.
- According to Rule 122 E of the Drug and Cosmetic Rules 1945, a new drug can be one which has not been used in the country and has not been recognised as effective and safe by the licensing authority for the proposed claims. It could also be an approved drug with modified or new claims including indications, dosage, and new route of administration.
- The board is also looking at amending the labelling requirements under the Drugs Rules, 1945 and adding a blue strip or box for antimicrobial products.
- It has recommended that no antimicrobials should be sold by the traders to the non-pharmaceutical industries who do not hold requisite licences.

Impact of Recommendations

- **Increased Documentation:** If brought into the new drug bracket, the manufacturing, marketing, and sale of antibiotics will be documented.
- **Clearance from Central Government:** The manufacturing and marketing clearance will have to be obtained from the Central government instead of State drug administration.

- **Compulsory Prescription:** Patients will be able to buy antibiotics only on prescription.

About Antimicrobial Resistance

- **Antimicrobials** – including antibiotics, antivirals, antifungals, and antiparasitics – are medicines used to prevent and treat infectious diseases in humans, animals and plants.
- **Antimicrobial Resistance (AMR)** occurs when bacteria, viruses, fungi and parasites no longer respond to antimicrobial medicines. As a result of drug resistance, antibiotics and other antimicrobial medicines become ineffective and infections become difficult or impossible to treat, increasing the risk of disease spread, severe illness, disability and death.
- AMR is a natural process that happens over time through genetic changes in pathogens. Its emergence and spread is accelerated by human activity, mainly the misuse and overuse of antimicrobials to treat, prevent or control infections in humans, animals and plants.

Challenges arising out of Antimicrobial resistance

- **Among top Global threats:** Antimicrobial resistance (AMR) is one of the top global public health and development threats. It is estimated that bacterial AMR was directly responsible for 1.27 million global deaths in 2019 and contributed to 4.95 million deaths .
- **Greater impact on Low and Middle Income countries:** AMR affects countries in all regions and at all income levels. Its drivers and consequences are exacerbated by poverty and inequality, and low- and middle-income countries are most affected.
- **Increased complexity in treatment:** AMR puts many of the gains of modern medicine at risk. It makes infections harder to treat and makes other medical procedures and treatments – such as surgery, caesarean sections and cancer chemotherapy – much riskier.
- **Economic Costs:** In addition to death and disability, AMR has significant economic costs. The World Bank estimates that AMR could result in US\$ 1 trillion additional healthcare costs by 2050, and US\$ 1 trillion to US\$ 3.4 trillion gross domestic product (GDP) losses per year by 2030.

PRELIMS SPECIAL

About Drugs Technical Advisory Board (DTAB)	Highest statutory decision-making body on technical matters related to drugs in India
Establishment	Constituted under the Drugs and Cosmetics Act, 1940
Affiliation	Part of the Central Drugs Standard Control Organization (CDSCO)
Nodal Ministry	Ministry of Health and Family Welfare

Functions	<p>Advises the Central and State Governments on technical matters related to the Drugs and Cosmetics Act</p> <p>Carries out functions assigned by the Act</p>
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About New Drugs and Clinical Trial Rules, 2019

- Validity of Clinical Trial approval for two years to “initiate the study” (extendable by one year)
- Two types of Ethics Committees (EC) defined: for Clinical Trials & BA/BE studies for Biomedical & Health Research
- Validity of EC registration increased to 5 years (from 3 years)
- DCGI to be informed about the approval granted by the EC within 15 working days of the grant of such approval
- In case of rejection of CT application, the applicant may request to reconsider the application within a period of 60 days from the date of rejection of the application
- Quarterly report of enrolment status to be submitted DCGI
- Six monthly status report (in place of annual status report) of each clinical trial
- Termination of study to be notified within 30 days

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. What is Antimicrobial Resistance? What are the challenges associated with rising antimicrobial resistance. [10 marks, 150 words]

PARTICULARLY VULNERABLE TRIBAL GROUP

Why in News: Mankidia community becomes 6th PVTG to get habitat rights over forests in Odisha.

Key Details

- The habitat rights were formally provided to Mankidia community on September 22 under the legal sanction of The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, a landmark legislation popularly known as the Forest Rights Act, 2006.
- Historically, Mankidia have been dependent on the forest for their livelihood and ritualistic practices but it is now that this tribal community has a legal claim over the forests.
- Prior to the legal entitlement, Mankidia tribe which

is classified as a particularly vulnerable tribal group (PVTG), was officially prevented from trespassing the forest land or using forest produce.

- Mankidia is the second PVTG to get the habitat rights in Odisha. Paudi Bhuyan of Deogarh district was the first PVTG to receive habitat rights title in Odisha on March 7, 2024.

About Mankidias

- The Mankidia community is an Austro-Asiatic community that ekes out a living mainly from the forests.
- The Mankidia constitute a semi-nomadic section of the Birhor tribe.
- They are primarily a food gathering and hunting community.
- The Mankidias are polytheists. They believe in both malevolent and benevolent spirits and Gods. Logobir and Budhimai are their supreme deities.
- For their traditional skill of rope making, trapping and eating monkeys, their neighbours call them ‘Mankidi’ or ‘Mankidia’.
- When monkeys create havoc in rural areas and destroy crops, fruits and vegetables, the villagers employ the Mankidia to catch them.
- They are one of the most little-known forest dwelling and wandering communities of Odisha as well as the country.
- They wander inside forests in small bands and stay at different tandas — the temporary makeshift settlements comprising of temporary dome-shaped leaf huts known as Kumbhas.
- They speak a form of Munda language and some of them are also conversant in Odia.

Particularly Vulnerable Tribal Groups (PVTGs)

- Within India’s diverse tapestry of tribal populations, there exist 75 tribal communities known as the Particularly Vulnerable Tribal Groups (PVTGs), as recognized by the Government of India. This designation arises from their heightened vulnerability compared to other tribal groups.
- Spread across 18 states and one union territory, the 75 PVTGs inhabit diverse ecological landscapes—from serene plains and lush forests to rugged hills and remote, inaccessible areas. These groups are also culturally different from one another.

Habitat Rights

- In 2006, the Government of India ushered in a transformative legislation called the Forest Rights Act (FRA) to empower forest-dwelling communities, including Scheduled Tribes, and recognize their rights over forestland and resources.
- Under this act, the concept of Habitat Rights was introduced, aiming to secure the habitat and livelihood of PVTGs and other tribal communities.
- Section 2(h) of the FRA defines ‘habitat’ as the ‘area comprising the customary habitat and such other habitats

in reserved and protected forests of primitive tribal groups and pre-agricultural communities, and other forest dwelling Scheduled Tribes’.

- Currently, there are more than 705 tribal communities including 75 PVTGs which are spread across the country who are historically living in forests, hilly, mountainous and remote areas.

PRELIMS SPECIAL

PVTGs in Odisha

- Among all the states and UTs, Odisha has the highest (13) number of PVTGs in India.
 - Chukutia Bhunjia
 - Birhore
 - Bondo
 - Didayi
 - Dongaria Khond
 - Juang
 - Kharia
 - Lodha
 - Kutia Kondha
 - Lanjia Saura

- Mankirdia
- Paudi Bhuiya
- Saura

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ


Q. Consider the following statements about Particularly Vulnerable Tribal Groups (PVTGs) in India:

1. PVTGs reside in 18 States and one Union Territory.
2. A stagnant or declining population is one of the criteria for determining PVTG status.
3. There are 95 PVTGs officially notified in the country so far.
4. Mankirdia and Paudi Bhuyan tribes are included in the list of PVTGs.

Which of the statements given above are correct?

- (a) 1, 2 and 4
- (b) 1, 2 and 3
- (c) 2 and 4
- (d) 1, 2, 3 and 4



Answer: (a)



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INDUS VALLEY CIVILISATION

Why in News: September 20, 2024 marks the centenary of the announcement of the discovery of the Indus Valley civilisation.

Key Details

- On 20 September 1924 **The Illustrated London News** published an article headlined, **First Light on a Long-forgotten Civilisation: New Discoveries of an Unknown Prehistoric Past** authored by John Marshall (then-Director General of the Archaeological Survey of India). This announced the discovery of civilisation of the Indus Valley.
- Harappa was the first site to be discovered in the area.
- For the past 100 years, the Indus valley civilisation has mesmerised and baffled town planners, epigraphists, metallurgists, hydrologists, specialists in ceramics, mathematicians, astronomers, and others. Its enigmas have intrigued them.
- At its peak, the civilisation was a technological powerhouse that excelled in town planning, harvesting water, building reservoirs, stadia, warehouses, underground sillage systems, massive fortification walls and building seafaring boats, fabricating bronze and copper artefacts, and in making beads, exquisite painted pottery, and terracotta products.
- Its craftsman made seals of steatite and carved them with realistic human and animal motifs and a script within a cramped space of 2 cm by 1.5 cm.
- Two ASI archaeologists were instrumental in the discovery, and were credited by Marshall in his article.
 - **Daya Ram Sahni first excavated Harappa in 1921-22**, finding seals, painted pottery, and beads.
 - **Rakhil Das Banerji, he started excavating Mohenjo-daro in 1922** and found seals, pottery, copper products, and crucibles at that site.
- There was uncanny similarity between the objects found by Sahni and Banerji at Harappa and Mohenjo-daro respectively. The two sites were 640 km apart.
- Marshall interpreted the similarities and announced the discovery of the civilisation of the Indus Valley.

Timeline and Expanse of the Indus Valley Civilisation

- The Indus valley civilisation can be divided into an early phase (3200 BCE to 2600 BCE), the mature period (2600

BCE to 1900 BCE), and the late phase (1900 BCE to 1500 BCE), when it decayed and collapsed.

- The roots of the Harappan civilisation lie in Mehrgarh (in Balochistan, Pakistan), around eight millennium BCE (7000 BCE).
- The civilisation was both pre-Aryan and non-Aryan.
- Mohenjo-daro, Harappa, Ganweriwala (all now in Pakistan), Rakhigarhi, and Dholavira (both in India) are the five biggest Harappan sites out of about 2,000 sites in the civilisational area, which is spread over 1.5 million sq.km. in India, Pakistan, and Afghanistan.
- There are about 1,500 sites in northwestern India, including in Gujarat, Haryana, Jammu and Kashmir, Maharashtra, Rajasthan, and Uttar Pradesh.
- The village of Daimabad on the banks of the Godavari river in Maharashtra is the southernmost outpost of the civilisation.
- There are about 500 sites in Pakistan, and a few in Afghanistan.
- The civilisation burgeoned on the banks of the Indus and Saraswati rivers, the latter of which is believed to have dried up circa 1900 BCE.

Characteristic Features of the Indus Valley Civilisation

- Fully developed Indus script.
- Finely carved stamp seals with writing and/or an animal or some other iconographic motif.
- Standardised measures, including cubic weights made of chert carefully cut and polished, employing a combination of binary and decimal systems.
- Large-scale use of burnt brick, standardised in size, with the ratio 1:2:4, the most effective for bonding.
- Exquisite lapidary art, featuring highly developed micro-drilling of very long beads made of hard carnelian, decorated with chemically stained motifs.

Significance of the Discovery of Indus Valley Civilisation

- The discovery of the Harappan civilisation filled the gap in South Asian history.
 - Before the discovery of Indus valley civilisation most historians were of the opinion that settled life in this part of the world first occurred around the sixth century BCE, leaving a gap in South Asian history.

- The discovery of the Harappan civilisation filled the so-called gap and pushed back in one stroke the antiquity of the settled life in this part of the world by more than 3,000 years.
- The discovery added one more ancient civilisation in Asia, besides the Egyptian and the Mesopotamian, and unravelled the Indus valley civilisation's maritime contacts with West Asia from 3000 BCE.

Morodharo: Recently Discovered Indus Valley Civilisation Site

- Located in Gujarat
- It yielded a large quantity of Harappan pottery, similar to those found in Dholavira.
- The settlement looks mature (2,600-1,900 BCE) to late (1,900-1,300 BCE) Harappan.
- Morodharo and Dholavira both depended on the sea.
- Architectural details at Morodharo bear striking resemblance to Dholavira.

TIMELESS TREASURES

This is a fortified settlement dating back to the Harappan era.

The fortification measures 102 m east to the west and 58 m north to the south.

The thickness of the wall is an average of 3.3 m.

It has a 10X10 m platform on the south-west side and a well on the north-east side.

Burial cairns, which are mounds of stones to demarcate a boundary, found.



Perforated jar sherds



Harappan pottery with perforated jar sherds, reserved slipware, and terracotta cakes unearthed.

All these items found have a striking resemblance to those found in Dholavira.

New NCERT Class VI Textbook

- The textbook rebranded the Harappan civilisation as the "Sindhu-Sarasvati" or "Indus-Sarasvati" civilization.
 - There is multiple mentions of the Sarasvati river in the new NCERT Class 6 Social Science textbook, Exploring Society: India and Beyond.
 - The book states that the Sarasvati basin included major cities of the civilisation, such as Rakhigarhi and Ganweriwala, along with smaller cities and towns.
- The textbook attributes the decline of the Harappan civilisation to climate change, leading to reduced rainfall and the drying up of the Sarasvati River in its central basin.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Explain the significance of Harappan Civilisation in light of recent discoveries. What are some of its characteristic features. [10 marks,150 words]

NOBEL PRIZE IN LITERATURE 2024

Why in News: The Nobel Prize in Literature 2024 was awarded to the South Korean author Han Kang "for her intense poetic prose that confronts historical traumas and exposes the fragility of human life"

Key Details

- Han is the 18th woman to win the prize. Her "empathy for vulnerable, often female, lives is palpable, and reinforced by her metaphorically charged prose,"
 - Through her writing she has displayed a unique awareness of the connections between body and soul, the living and the dead, and in her poetic and experimental style has become an innovator in contemporary prose.
- Born in 1970, Han Kang is the first South Korean to win the literature prize. Kang began her career in 1993 with the publication of several poems in *Literature and Society*. She published her first story in 1995 with *Love of Yeosu*.
- In 2016, Kang won the Man Booker International Prize for *The Vegetarian*. It tells the story of a woman's decision to stop eating meat and her family's worry about her mental health. The novel was the first of her books to be translated into English and was seen as her major international breakthrough.
- In the novel *Human Acts*, Kang explored the 1980 killing of hundreds of students and unarmed civilians by the South Korean military in the city of Gwangju, where she grew up.
- Kang is the second South Korean to win a Nobel Prize. Former South Korean President Kim Dae-jung received the Nobel Peace Prize in 2000 for his efforts to restore democracy in the South and improve relations with North Korea.

- **The Nobel Prizes** carry a cash award of 11 million Swedish kronor (\$1 million) from a bequest left by their creator, Swedish inventor Alfred Nobel. Winners also receive an 18-carat gold medal and diploma.
- **The Nobel Prize in Literature** has been awarded 117 times to 121 Nobel Prize laureates between 1901 and 2024.
- **In 2023**, Norwegian author Jon Fosse was awarded **Nobel Prize in Literature** "for his innovative plays and prose which give voice to the unsayable."

NATIONAL MARITIME HERITAGE COMPLEX

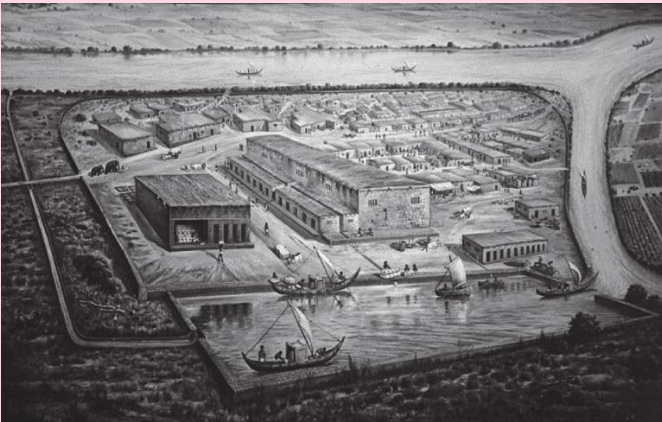
Why in News: The Union Cabinet has recently approved development of National Maritime Heritage Complex at Lothal, Gujarat.

Key Details

- A separate society will be formed to oversee future phases, governed by a council led by the Minister of Ports, Shipping & Waterways, under the Societies Registration Act of 1860.
- This Governing Council will be responsible for the overall execution, management, and operations of the NMHC.
- It will include the NMHC museum, featuring six galleries, such as an Indian Navy and Coast Guard gallery, which is expected to be one of the country's largest.
- The National Maritime Heritage Complex (NMHC) will be instrumental in preserving and promoting the rich legacy of Lothal.
- It aims to curate and display a wide variety of artifacts that span from ancient to modern times, inspiring visitors to delve into and appreciate India's illustrious maritime heritage.

PRELIMS SPECIAL

About Lothal



- Lothal, deriving its name from the Gujarati words 'Loth' and 'thal', which translate to 'the mound of the dead', holds immense historical value.
- This ancient city, established around 2400 BCE, evolved into a vibrant trading port within the Indus Valley Civilisation. The Archaeological Survey of India (ASI) conducted excavations from February 13, 1955, to May 19, 1960, to uncover the remains of this once-flourishing urban centre.
- Archaeologists theorise that Lothal was strategically positioned along a significant river system, forming part of the ancient trade route that connected Sindh to Saurashtra in Gujarat. The findings at this site rank among the most substantial archaeological discoveries in contemporary India.
- Located at a crucial position in the Indus Valley Civilisation,

Lothal featured characteristics that underscored its maritime significance.

- Notably, the site is home to the world's earliest known artificial dock, linked to an ancient branch of the Sabarmati River. Excavations revealed an acropolis, a lower town, a bead manufacturing facility, warehouses, and an intricate drainage system, all highlighting Lothal's importance as a key trading hub.
- The network of canals and dockyards discovered here illustrates the advanced urban planning and engineering skills that defined Lothal. Artifacts uncovered indicate that trade may have extended to far-flung regions, including Mesopotamia, Egypt, and Persia.

INTERNATIONAL ABHIDHAMMA DIVAS

Why in News: The Prime Minister recently addressed the ceremony in celebration of International Abhidhamma Divas and recognition of Pali as a classical language at Vigyan Bhavan in New Delhi.

Key Details

- Abhidhamma Divas commemorates the descent of Lord Buddha from the celestial realm after teaching Abhidhamma.
- The recent recognition of Pali as a classical language enhances the significance of this year's Abhidhamma Divas celebrations as Lord Buddha's teachings on Abhidhamma is originally available in Pali language.

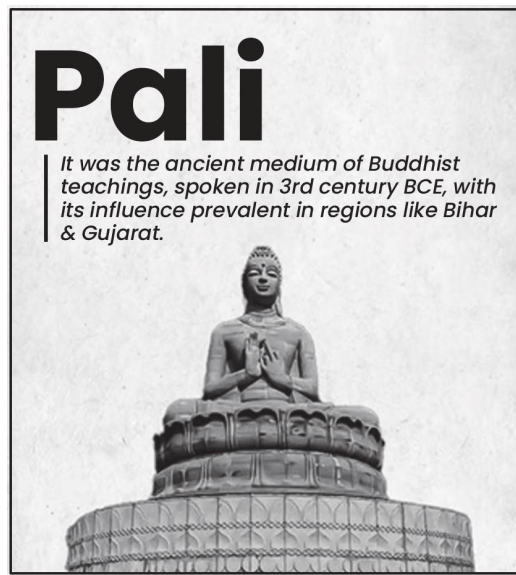
Significance of Abhidhamma Day

- Abhidhamma Day is a Theravada Buddhist tradition celebrated primarily in South and South-East Asia.
- Abhidhamma Day celebrates Gautama Buddha's descent from *Tavatimsa* heaven after teaching his mother the *Abhidhamma*.
- It is celebrated on the full moon of the seventh month of the Burmese lunar year which starts in April, and coincides with the end of the (first) Rains Retreat and the Pavāraṇa festival. The seventh month corresponds to October.
- The 2024 date for this event is October 17th.

Pali as a classical language

- Pali language has recently been given status of Classical language.
- Pali, the language of the Theravada Buddhist canon, due to its significance to Buddhism, Pali is the variant of Prakrit that is most studied today.
- The entire body of Buddhist canonical literature is written in Pali, with the Tipitaka or "Threefold Basket" being its most notable collection.

- This includes the Vinaya Pitaka, which outlines ethical monastic rules, the Sutta Pitaka, a rich compilation of the Buddha’s discourses, and the Abhidhamma Pitaka, which delves into ethics, psychology, and the intricate analysis of mind and reality. A rich commentarial tradition has developed around these texts, with works such as the Aṭṭhasālinī and Sammohavinodanī being crucial for understanding the nuanced teachings of the Abhidhamma, all composed in Pali.
- The Abhidhamma, or “Higher Teaching” of the Buddha, provides a profound and systematic analysis of mind and matter.
 - ◆ Unlike the more conventional teachings in the Sutta Piṭaka, which use everyday language, the Abhidhamma adopts a specialized and analytical approach to explore reality.
 - ◆ It offers a detailed framework for understanding the nature of existence, addressing the processes of birth, death, and mental phenomena in a precise and abstract manner.
 - ◆ Traditionally, it is believed that Buddha first taught the Abhidhamma to the gods in the Tavatimsa heaven, including his mother, and later conveyed these teachings to his disciple Sariputta, who expanded upon them in the six core books of the Abhidhamma Piṇaka.
 - ◆ These texts cover various topics, such as moral and mental states, aggregates, causal relationships, and the path to emancipation, forming a comprehensive system for understanding the mind and achieving spiritual growth.
- After Theravada Buddhism declined in India, Pali survived as an ecclesiastical language in Sri Lanka, Myanmar, Thailand, Laos, and Cambodia, where this Buddhist school continued to prosper.
- Pali has traditionally been identified with Magadhi Prakrit, with the word ‘pali’ meaning “lines or series”, a reference to Pali being the language of the series of Buddhist texts.
- Pali use as a Buddhist canonical language came about because the Buddha opposed the use of Sanskrit, a learned language, as a vehicle for his teachings and encouraged his followers to use vernacular dialects.



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about Pali language:

1. Pali language has recently been given status of Classical language.
2. Pali, the language, is associated with the Digambara tradition of Jainism.

Which of the above statements are not correct?

- | | |
|------------------|---------------------|
| (a) 1 Only | (b) 2 Only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

Answer (b)

CRUISE BHARAT MISSION

Why in News: The central government recently launched the five-year Cruise Bharat Mission, aiming to boost cruise tourism in India.

About Mission

- **Aim:**
 - The initiative aims to excel India's vision to become a global hub for cruise tourism and promote the country as the leading global cruise destination.
- **Significance:**
 - The Cruise Bharat Mission will not only elevate India's cruise tourism sector but also create lasting opportunities for generations to come.
 - To boost cruise tourism by doubling cruise passenger traffic within five years in India to 1 million passengers and create 400,000 jobs by 2029.
- **Implementation:**
 - The Cruise India Mission will be implemented in three phases, beginning from 1 October 2024 up to 31 March 2029.
 - **The Phase 1** (01.10.2024 – 30.09.2025) will focus on conducting studies, master planning, and forming cruise alliances with neighbouring countries.
 - ◆ It will also modernise existing cruise terminals, marinas, and destinations to enhance the potential of cruise circuits.
 - **The Phase 2** (01.10.2025 – 31.03.2027) will concentrate on developing new cruise terminals, marinas, and destinations to activate high-potential cruise locations and circuits.
 - **Phase 3** (01.04.2027 – 31.03.2029) will focus on integrating all cruise circuits across the Indian Subcontinent, marking the maturity of the cruise ecosystem while continuing the development of cruise terminals, marinas, and destinations.
- **Authority:**
 - The Ministry of Ports, Shipping and Waterways will establish a special purpose vehicle (SPV) for cruise development under the Indian Ports Association (IPA), which represents major ports in India.
- **Performance Targets:**
 - Increasing sea cruise passengers from 0.5 million in Phase 1 to 1 million by Phase 3, with corresponding increases in sea cruise calls from 125 to 500.
 - River cruise passengers will grow from 0.5 million in Phase 1 to 1.5 million by Phase 3.
 - The number of international cruise terminals will expand from 2 in Phase 1 to 10 by Phase 3, while river cruise terminals will increase from 50 to 100.
 - Similarly, marinas will grow from 1 to 5, and employment generated will rise from 0.1 million to 0.4 million by the final phase.
- **Targets three key cruise segments:**
 - The Ocean & Harbour Cruise segment encompasses ocean cruises, including deep-sea and coastal cruises, along with harbour-based yachting and sailing cruises.
 - The River & Inland Cruise segment focuses on river and inland cruises on canals, backwaters, creeks, and lakes.
 - The Island Cruise segment highlights inter-island cruises, lighthouse tours, live-aboard experiences, expedition cruises, and boutique cruises to lesser-known destinations.
- **Key initiatives across five strategic pillars:**
 - **Sustainable Infrastructure & Capital pillar** addresses infrastructure gaps, focusing on developing world-class terminals, marinas, water aerodromes, and heliports, alongside digitalisation (e.g., facial recognition) and decarbonisation (e.g., shore power).
 - ◆ It includes creating a National Cruise Infrastructure Masterplan 2047, setting up a cruise-focused SPV under Indian Ports Association (IPA), and establishing a cruise development fund.
 - **Operations Including Technology Enabled pillar** aims to streamline operations, ensuring smooth embarkation, disembarkation, and destination visits with a focus on digital solutions such as e-clearance systems and e-visa facilities.
 - **Cruise Promotion & Circuit Integration pillar** focuses on international marketing and investment promotion, including linking cruise circuits, hosting events like the "Cruise India Summit," and forming alliances with neighbouring countries.
 - **Regulatory, Fiscal & Financial Policy pillar** is centred on creating tailored fiscal and financial policies, with

a focus on tax scenarios, cruise regulations, and the launch of a National Cruise Tourism Policy.

- ◆ Cruise shipping regulations for Indian flag cruise ships, cabotage relaxations as well as financial incentives for cruise developments will also fall under this pillar.
 - ◆ The Centre is looking to levy a 'cruise development cess' at major ports, the proceeds of which will be sent to a special cruise fund under the Indian Ports Association (IPA), which will also get proceeds from other industry sources.
- **Capacity Building and Economic Research pillar** emphasizes skill development, creating a Centre of Excellence for cruise-related economic research, and formulating National Occupational Standards to promote youth employment in the cruise industry.

Conclusion

To increase its international cruise outreach, the Government of India is looking to establish Cruise Alliances with neighbouring countries such as the United Arab Emirates, Male, Maldives, Singapore, Malaysia, Thailand, Myanmar, Bangladesh and Indonesia.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. The Special Purpose Vehicle to implement Cruise Bharat Mission is established by?

- (a) Ministry of Tourism
- (b) Ministry of Ports, Shipping and Waterways
- (c) Ministry of Culture
- (d) None of the above

(b) :Answer

Descriptive Questions

Q. Discuss the objectives and initiatives under Cruise Bharat Mission. How will it contribute to tourism growth in India? [10 marks] [150 words]

BHARAT GEN

Why in News: The world's first government-funded Multimodal Large Language Model project (Bharat Gen) was recently launched focus on creating efficient and inclusive AI in Indian languages.

Key Details

Aim:

- The initiative is designed to revolutionize public service delivery and boost citizen engagement by developing a suite of foundational models in language, speech, and computer vision.

- The initiative will create generative AI systems that can generate high-quality text and multimodal content in various Indian languages.
- It will cater to text and speech, ensuring coverage across India's diverse linguistic landscape.
- Training on multilingual datasets will deeply capture the nuances of Indian languages, which are often underrepresented in global AI models.

BharatGen will deliver generative AI models and their applications as a public good by prioritizing India's socio-cultural and linguistic diversity.	It strives to address India's broader needs, such as social equity, cultural preservation, and linguistic diversity, while ensuring that generative AI reaches all segments of society.	It aligns with the vision of Atmanirbhar Bharat by creating foundational AI models specifically tailored for India.
Objective and Significance		
By developing AI technologies within India, BharatGen reduces reliance on foreign technologies and strengthens the domestic AI ecosystem for startups, industries, and government agencies.	Democratizing access to AI through foundational models and detailed technical recipes allows innovators, researchers, and startups to build AI applications quickly and affordably.	BharatGen is a proud example of India's commitment to advancing homegrown technologies, by positioning India as a global leader in the field of Generative AI, much like our achievements with UPI and other innovations that have transformed various sectors.

Implementation:

- By the TIH Foundation for IOT and IOE at IIT Bombay with academic partners from other premier academic Institutes that include IIT Bombay, IIIT Hyderabad, IIT Mandi, IIT Kanpur, IIT Hyderabad, IIM Indore, and IIT Madras.
- The project is expected to be completed in two years, with plans to benefit several government, private, educational, and research institutions.

The key distinguishing features of BharatGen are:

- The multilingual and multimodal nature of foundation models.
- Bhartiya dataset based building, and training.
- Open-source platform and development of an ecosystem of generative AI research in the country.

Conclusion

Unlike models that rely on global datasets, BharatGen focuses on developing processes for collecting and curating India-centric data, ensuring that the country’s diverse languages, dialects, and cultural contexts are accurately represented. This emphasis on data sovereignty strengthens India’s control over its digital resources and narrative.

Bharat Gen’s roadmap outlines key milestones up to July 2026. These include extensive AI model development, experimentation, and the establishment of AI benchmarks tailored to India’s needs. Bharat Gen will also focus on scaling AI adoption across industries and public initiatives.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Recently, The Bharat Gen project was in news. It is related to which of the following?

- (a) Genomic sequences of India’s population
- (b) Promotion of organic farming
- (c) Development of indigenous vaccine
- (d) Generative Artificial Intelligence (AI) model

Answer: (d)

NATIONAL QUANTUM MISSION

Why in News: Thematic Hubs (T-Hubs) announced to Lead India’s Quantum Revolution.

Key Details

- In a major step for India’s **National Quantum Mission (NQM)**, selected premier institutions to establish Thematic Hubs (T-Hubs) were announced.
- The four T-Hubs have been set up in the institutions – Indian Institute of Science (IISc) Bengaluru, Indian Institute of Technology (IIT) Madras along with Centre for Development of Telematics New Delhi, Indian Institute of Technology (IIT) Bombay and Indian Institute of Technology (IIT) Delhi and comprises of 14 Technical Groups.
- They were selected through a highly competitive process and will specialize in key quantum verticals, ensuring a comprehensive and robust development of Quantum Computing, Quantum Communication, Quantum Sensing & Metrology, and Quantum Materials & Devices respectively.
- Each T-Hub will operate under the Hub-Spoke-Spike model, supporting a cluster-based network of research projects (Spokes) and individual research groups (Spikes) alongside these central hubs to

enhance coordination among research institutions, enabling them to pool resources and expertise.

- **Significance of T-Hubs**
- These hubs, dedicated to propelling quantum research and innovation, will help position India at the forefront of the global quantum technology revolution, reinforcing the country’s leadership in the most advanced scientific frontiers.
 - These hubs will play a crucial role in bridging the gap between research and industry, ensuring that innovations developed here lead to tangible advancements in the marketplace, benefiting sectors like telecommunications, defence, sensing & metrology, and healthcare.
 - The T-Hubs will drive significant advancements in quantum technology development, human resource capacity building, entrepreneurship and industry collaboration, as well as strengthening international partnerships.

Thematic Hub (T-Hub)	Institute Involved in the T-Hub
Thematic Hub for Quantum Computing	Indian Institute of Science, Bengaluru
Thematic Hub for Quantum Communication	Indian Institute of Technology, Madras
Thematic Hub for Quantum Sensing and Metrology	Indian Institute of Technology, Bombay
Thematic Hub for Quantum Materials and Devices	Indian Institute of Technology, Delhi

National Quantum Mission (NQM)

- NQM is one of the nine missions under the Prime Minister’s Science Technology Innovation Advisory Council (PMSTIAC), created to leverage scientific research and make India a global leader in quantum technology.
- The Union Cabinet, approved the National Quantum Mission (NQM) on 19th April 2023 at a total cost of Rs.6003.65 crore from 2023-24 to 2030-31, aiming to seed, nurture and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology (QT).
- This will accelerate QT led economic growth, nurture the ecosystem in the country and make India one of the leading nations in the development of Quantum Technologies & Applications (QTA).
- The Mission objectives include developing intermediate-scale quantum computers with 50-1000 physical qubits in 8 years in various platforms like superconducting and photonic technology.

- Satellite-based secure quantum communications between ground stations over a range of 2000 km within India, long-distance secure quantum communications with other countries, inter-city quantum key distribution over 2000 km as well as multi-node Quantum networks with quantum memories are also some of the deliverables of the Mission.
- The National Quantum Mission will focus on developing magnetometers with high sensitivity in atomic systems and Atomic Clocks for precision timing, communications, and navigation.
- It will also support the design and synthesis of quantum materials such as superconductors, novel semiconductor structures, and topological materials for the fabrication of quantum devices. Single photon sources/detectors, and entangled photon sources will also be developed for quantum communications, sensing, and metrological applications.
- Mission Implementation includes setting up of four Thematic Hubs (T-Hubs) in top academic and National R&D institutes in the domains:
 - Quantum Computing
 - Quantum Communication
 - Quantum Sensing & Metrology
 - Quantum Materials & Devices
- **Significance**
 - NQM has the potential to elevate the country's Technology Development ecosystem to a level of global competitiveness.
 - The Mission would greatly benefit various sectors including communication, health, financial, energy with applications in drug design, space, banking, security etc.
 - The Mission will also provide a huge boost to National priorities like Digital India, Make in India, Skill India and Stand-up India, Start-up India, Self-reliant India and Sustainable Development Goals (SDG).

JAL HI AMRIT SCHEME

Why in News: The Government of India has introduced the Jal Hi AMRIT scheme, aiming to promote efficient water management.

Key Details

- Union Minister of Housing and Urban Affairs informed that in the first 100 days of Modi 3.0 a new scheme Jal Hi AMRIT has been approved.
- Urban Local Bodies and parastatal agencies are in the process of nominating the STPs from their respective states.

Focus on Water Treatment Plants

Under this initiative, it is envisaged to incentivize States & UTs to manage the used water (sewage) treatment plants (UWTPs/STPs) efficiently for ensuring recyclable good quality treated water.



Incentive System

A "Clean Water Credit System" is proposed, where states receive credits based on their performance in treating wastewater, allowing them to access additional funding for further improvements.



Part of AMRUT 2.0

"Jal Hi AMRIT" is implemented under the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0 program.



Ministry of Housing and Urban Affairs: 100 Days Achievements

- PMAY-U 2.0, with an investment of 10 lakh crore, will address the housing needs of one crore families, ensuring that every citizen leads a better quality of life.
- **Enhancing Transport in Urban Areas:** Within 100 days of the Government, three metro projects worth 31,000 crores have been approved. This consist of Bengaluru Metro Phase-3, Thane Internal Ring Road Metro Projects and Southward extension of Pune Metro Rail Project.
- Government is focusing on recycling and processing of water along with reuse in both rural and urban areas.
- Under AMRUT 2.0, the union minister highlighted that, as part of the 100-day achievements, 109 projects will be implemented across 13 states.
 - These states include Bihar, Chhattisgarh, Dadra and Nagar Haveli, Daman and Diu, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Rajasthan, and Uttar Pradesh.
- Cumulatively in 100 days, Inauguration, and foundation laying of 263 projects worth 9,352 crore will be completed.
- Under **Swachh Bharat Mission and Swachhata Hi Seva 2024 Camapign**, around 7.5 Lakhs Cleanliness Target Units (CTUs) have been registered on the portals and around 86% CTUs have already been cleaned.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Recently, the Thematic hub for Quantum Sensing and Metrology under National Quantum MISSION was established in?

- Indian Institute of Science, Bengaluru
- Indian Institute of Technology, Madras
- Indian Institute of Technology, Bombay
- Indian Institute of Technology, Delhi

Answer: (c)

Conclusion

PMAY-U 2.0, an initiative aimed at addressing the housing needs of 1 crore families with a total investment of Rs 10 lakh crore, ensuring every citizen leads a better quality of life.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which union ministry is responsible for implementation of Jal Hi AMRIT Scheme?

- (a) Ministry of Housing and Urban Affairs
- (b) Ministry of Jal Shakti
- (c) Ministry of Environment Forest and Climate Change
- (d) None of the above

Answer: (a)

MAKE IN INDIA INITIATIVE

Why in News: Launched on September 25, 2014, by Prime Minister, the "Make in India" initiative is completing 10 years empowering India to become a global manufacturing hub.

Key Details

- The program has played a pivotal role in boosting domestic manufacturing, fostering innovation, enhancing skill development, and facilitating foreign investment.
- The initiative was conceived during a period when India's economic growth had sharply declined, and the country faced critical challenges in sustaining its development trajectory.
 - Against this backdrop, "Make in India" was designed to transform India into a global hub for design and manufacturing. Its core objectives were to facilitate investment, encourage innovation, and develop world-class infrastructure.
 - As one of the pioneering 'Vocal for Local' initiatives, it sought not only to boost India's manufacturing capabilities but also to showcase its industrial potential on a global stage.

Impact of Make in India

- **Foreign Direct Investment (FDI)**
 - Since 2014, India has attracted a cumulative FDI inflow of \$ 667.4 billion (2014-24), registering an increase of 119% over the preceding decade (2004-14).
 - Most sectors, except certain strategically important sectors, are open for 100% FDI under the automatic route.

- **Production Linked Incentive (PLI) Scheme**

- The PLI Schemes introduced in 2020 have resulted in ₹1.32 lakh crore (\$ 16 billion) in investments and a significant boost in manufacturing output of ₹10.90 lakh crore (\$ 130 billion) as of June 2024. Over 8.5 lakh jobs have been created directly and indirectly due to the initiative.

- **Exports & Employment**

- India's merchandise exports surpassed \$ 437 billion in FY 2023-24. Exports have surged, with an additional ₹4 lakh crore generated due to the PLI schemes, while total employment in the manufacturing sector increased from 57 million in 2017-18 to 64.4 million in 2022-23.

- **Ease of Doing Business**

- India's commitment to improving business conditions is evident in its sharp rise from 142nd rank in 2014 to 63rd rank in 2019 in the World Bank's Doing Business Report.
- Over 42,000 compliances have been reduced, and 3,700 provisions has been decriminalized.
- Jan Vishwas (Amendment of Provisions) Act, 2023 has decriminalized 183 provisions across 42 Central Acts.

Key Reforms

- **Semiconductor Ecosystem Development**

- Semicon India Program, worth ₹76,000 crore, aims to provide an impetus to semiconductor and display manufacturing by facilitating capital support and technological collaborations.
- India has developed policies to support every segment of the semiconductor ecosystem, not just focusing on fabs but also including packaging, display wires, OSATs, sensors, and more.

- **National Single Window System (NSWS)**

- Launched in September 2021, this platform simplifies the investor experience, integrating clearances from 32 Ministries/ Departments and 29 States/UTs, facilitating rapid approvals.

- **PM Gatishakti**

- PM Gati Shakti National Master Plan (NMP), a GIS based platform with portals of various Ministries/ Departments of Government, was launched in October, 2021.
- It is a transformative approach to facilitate data-based decisions related to integrated planning of multimodal infrastructure, thereby reducing logistics cost.

- **National Logistics Policy (NLP)**

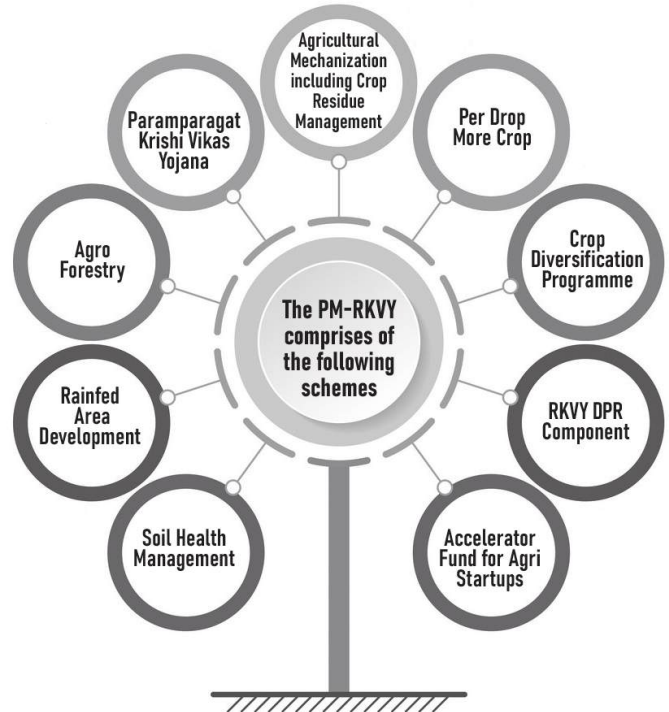
- Aimed at reducing logistics costs and increasing efficiency, the NLP, launched in 2022, is key to making Indian products more globally competitive.

PRADHAN MANTRI RASHTRIYA KRISHI VIKAS YOJANA AND KRISHONNATI YOJANA

Why in News: The Union Cabinet recently approved the PM Rashtriya Krishi Vikas Yojana (PM-RKVY) and Krishonnati Yojana (KY).

Key Details

- Union Cabinet approved the proposal of the Department of Agriculture & Farmers Welfare (DA&FW) for rationalization of all Centrally Sponsored Schemes (CSS) operating under Ministry of Agriculture and Farmer's into two-umbrella Schemes:
 - Pradhan Mantri Rashtriya Krishi Vikas Yojana (PM-RKVY), is a cafeteria scheme to promote sustainable agriculture.
 - Krishonnati Yojana (KY) to address food security & agricultural self-sufficiency.
- All components shall leverage technology to ensure efficient and effective implementation of the various components.
- The PM Rashtriya Krishi Vikas Yojana (PM-RKVY) and Krishonnati Yojana (KY) will be implemented with total proposed expenditure of Rs.1,01,321.61 crore.
- These Schemes are implemented through the State Governments.
- The rationalisation of Various Schemes has been undertaken to:
 - To avoid duplication, ensure convergence and provide flexibility to States.
 - Focus on emergent challenges of Agriculture - Nutrition security, Sustainability, Climate resilience, value chain development & private sector participation.
 - State governments will be able to draw a comprehensive strategic plan suiting their requirements for agriculture sector.
 - Annual Action Plan (AAP) of States can be approved in one go rather approving individual scheme-wise AAPs.
- One important change is to provide, in PM-RKVY, the state governments be given flexibility to re-allocate funds from one component to other based on their state specific requirements.
- By rationalization of the schemes, the States are given an opportunity to prepare a Comprehensive Strategic Document on Agriculture Sector of the State in a holistic manner.
- The Strategic Document focuses not only the production and productivity of the crops but also tackles the emerging issues of Climate Resilient Agriculture and development of Value Chain approach for agricultural commodities.



- These plans are envisaged to articulate the overall strategy and the schemes/programs, linked with the objectives flowing from the strategic framework.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following initiatives operating under Ministry of Agriculture

1. Soil Health Management
2. Paramparagat Krishi Vikas Yojana
3. Accelerator Fund for Agro Startups

How many of the above initiatives are rationalized under Pradhan Mantri Rashtriya Krishi Vikas Yojana and Krishonnati Yojana?

- (a) Only one (b) Only two
(c) All three (d) None

Answer: (c)

SPICED SCHEME

Why in News: Spices Board has recently introduced Comprehensive Scheme to Boost Spices Export and Cardamom Productivity.

Key Details

- **Aim of the program:** The Spices Board, Ministry of Commerce and Industry, has launched a transformative

- The Transgender Persons (Protection of Rights) Act, 2019
- Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013

About NALSA

- NALSA, constituted under the Legal Services Authorities Act of 1987, has a mandate to provide legal aid to disadvantaged groups and spread legal literacy.
- Through this MoU, both NALSA and DoSJE will conduct a series of campaigns, seminars, and events to increase the reach and impact of social welfare schemes for vulnerable communities across India.

Background and context for legal aid and access to justice in India

Constitutional Foundations	
The Constitution of India serves as the foundation for legal aid and access to justice. Articles 14 and 22 guarantee the right to equality before the law and equal protection of the laws, as well as the right to legal representation.	Article 39A emphasizes the state's duty to ensure that the operation of the legal system promotes justice on the basis of equal opportunity and provides free legal aid to those who cannot afford it.
Legal Services Authorities Act, 1987	
To operationalize the constitutional mandate, the Legal Services Authorities Act was enacted in 1987.	This legislation established legal services authorities at the national, state, and district levels. The National Legal Services Authority (NALSA) at the apex level oversees and coordinates the legal aid programs.
Structural Framework	
At the national level, NALSA works in collaboration with State Legal Services Authorities (SLSAs) and District Legal Services Authorities (DLSAs) to ensure the effective implementation of legal aid programs.	These authorities facilitate legal aid through panel lawyers, legal aid clinics, Lok Adalats, and other mechanisms.
Scope of Legal Aid Services	
Legal aid services encompass a wide range of activities, including legal representation in courts, advice, drafting of legal documents, and organizing Lok Adalats.	Lok Adalats are people's courts that aim to provide speedy and affordable justice by encouraging compromise and settlement outside the formal court system.
Targeting Marginalized Communities	
One of the primary objectives of legal aid in India is to ensure that justice is not denied to the economically weaker sections of society.	This involves providing legal assistance to marginalized communities, women, children, and other vulnerable groups who may face barriers in accessing the legal system.

- **Challenges in Access to Justice:** India faces challenges in ensuring effective access to justice, such as:
 - shortage of legal professionals,
 - slow legal process leading to case backlog, and
 - a lack of legal awareness among certain communities.

These challenges contribute to disparities in accessing the legal system, particularly for those who are socio-economically disadvantaged.

- **Technology in Legal Aid:**
 - Recent initiatives have focused on leveraging technology to enhance access to justice.
 - Online platforms and e-courts have been introduced to simplify legal processes, reduce delays, and make legal services more accessible to a broader population, especially in remote areas.
- **Empowering Through Legal Awareness:** Legal aid programs go beyond providing direct legal services. They also emphasize legal awareness and education to empower individuals with knowledge of their rights and responsibilities. This includes conducting workshops, outreach programs, and disseminating legal information through various mediums.
- **Public Interest Litigation (PIL):** The concept of Public Interest Litigation (PIL) has played a crucial role in addressing systemic issues and ensuring access to justice. PIL allows individuals or organizations to approach the court.
- **Reforms and Continuous Improvement:** - The legal system in India is undergoing continuous reforms to address existing challenges. These reforms include measures to reduce case backlog, improve infrastructure, and enhance the effectiveness of legal aid programs, ensuring that they reach the most vulnerable sections of society.

Conclusion

Legal aid and access to justice in India are deeply rooted in the constitutional framework, legislation, and a multi-tiered organizational structure. The focus extends beyond litigation to legal awareness, technology integration, and collaboration with NGOs, reflecting a comprehensive approach to addressing the diverse challenges in ensuring justice for all. Continuous reforms and adaptation to changing needs remain crucial for an effective and inclusive legal aid system in India.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. SARTHIE initiative recently seen in news is related to:

- (a) Enhancing public awareness about various Acts, Rules and Schemes related to Social Justice.
- (b) New Skill training programme by Ministry of Skill.
- (c) New Teacher training initiative.
- (d) New industry policy to support Electric Vehicles.

(a) Answer

REPORT ON NON-BANKING FINANCIAL COMPANIES

Why in News: RBI released a report titled Peeling the Layers: A Review of the NBFC Sector in Recent Times.

Key Details

- Non-banking financial companies (NBFCs) have become an integral part of the financial system which is reflected in a gradual rise in NBFCs' credit to GDP ratio.
- Recognizing rapid developments in the sector along with rising interconnectedness and changing risk profile of NBFCs, the Reserve Bank introduced scale-based regulation (SBR) in October 2022.
- Amidst this transition, the NBFC sector remains resilient, with steady double-digit growth in credit, adequate capital, and lower delinquency ratio.

Non-Banking Financial Institutions (NBFIs) in India: A Global Perspective

- NBFIs play a crucial role in the global financial system by providing services that are not necessarily provided by banks.
- They play a key role in enhancing access to credit and supporting economic growth.
- In India, the financial system remains bank dominated. The NBFI sector trails the banking sector in terms of asset size, however, the gap between them is closing over time.
- Their systemic importance is increasing, as indicated in the size of NBFIs as a share of GDP.
- In 2022, NBFIs in India registered a growth of around 12% (year-on-year), as opposed to the contraction globally.

Regulatory Evolution of the NBFC Sector in India

- Since 1964, NBFCs are being regulated by the Reserve Bank under the provisions of Chapter III-B of the RBI Act, 1934.
- In response to the evolution of the sector over the years, the Reserve Bank has periodically updated the regulations applicable to NBFCs, transitioning from a rule-based to a principle-based regulatory approach.
- In 1998, NBFCs were categorised based on acceptance of public deposits, followed by introduction of systemic importance for non-deposit taking NBFCs (NBFC-ND-SI) with asset size of ₹100 crore and above in 2006.
- In 2014, a review of the regulatory framework for NBFCs

was undertaken and the sector transitioned to an activity based regulation.

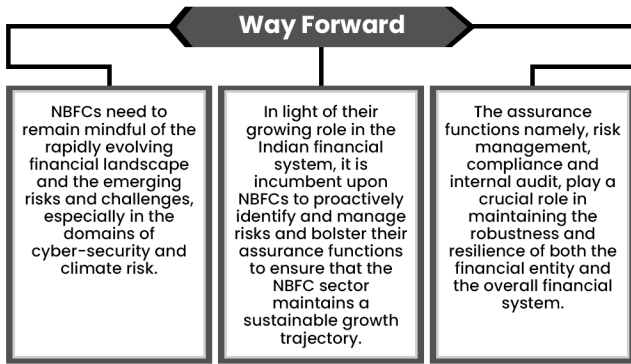
- The most recent overhaul was in the form of Scale-Based Regulation (SBR), which took effect from October 1, 2022.
 - Under this new regulatory framework, NBFCs are placed in any of the four layers (top, upper, middle, and base) based on size, activity, or perceived riskiness.
 - At present, the top layer is kept vacant, and the Reserve Bank can shift NBFCs from the upper layer to the top layer, for higher scrutiny if required.
 - NBFCs in the base layer are subject to less stringent regulation than those in middle and upper layers in view of their small size and limited interconnectedness.
- A key area of difference between banks and NBFCs is the permissibility to accept public deposits, which exists only for a handful of NBFCs.
- Since 1997, no certificate of registration has been granted to new NBFCs for acceptance of public deposits.

Performance of the NBFC Sector

- Balance Sheet
 - The NBFC sector continued to exhibit sustained growth during 2023, primarily driven by credit growth even as investments declined.
 - On the liabilities side, borrowings by NBFCs grew at a lower rate than the previous year.
- Financial Performance and Prudential Indicators of the NBFC Sector
 - There has been a consistent improvement in the bottom line of the sector, as gauged by the profitability indicators, i.e., return on assets (RoA) and return on equity (RoE).
 - NBFCs-Upper Layer (UL) have outperformed NBFCs-Middle Layer (ML) with regard to profitability, mainly on account of lower provisions against non performing assets (NPA) and lower interest expenses.
 - The asset quality of the sector has also improved.
 - While the gross NPA (GNPA) ratio of upper layer NBFCs is lower than that of middle layer, the latter maintained adequate provisions to account for their riskier loan portfolio, thereby bringing their net NPA (NNPA) ratio below that of NBFCs-UL.

Conclusion

- Globally, NBFIs play a key role in financing the real economy and supporting economic growth. Different countries implement regulations for NBFIs which suit their specific requirements.
- Compared to India, non-banks in advanced countries are much bigger in size and operate in a complex market environment.
- The NBFC sector in India remains resilient under the SBR framework.
- At end-December 2023, the sector continued to exhibit double-digit growth in credit, adequate capital and low delinquency ratio.
- The recent regulatory measure of extension of PCA norms to government-owned NBFCs is expected to further strengthen the sector.



COMPREHENSIVE POWER

GROUPING	RANK	COUNTRY/TERRITORY	SCORE	TREND	UPWARD	DOWNWARD	NOCHANGE
Superpowers ≥ 70 points	1	United States	81.7	↗	█		
	2	China	72.7	↗	█		
Middlepowers ≥ 10 points	+1	3	India	39.1	↗	█	
	-1	4	Japan	38.9	↗	█	
	+1	5	Australia	31.9	↗	█	
	-1	6	Russia	31.1	↘		█
		7	South Korea	31.0	↗	█	
		8	Singapore	26.4	↗	█	
		9	Indonesia	22.3	↗	█	
		10	Thailand	19.8	↗	█	
		11	Malaysia	19.6	↗	█	
		12	Vietnam	18.7	↗	█	
	13	New Zealand	16.3	↘		█	
	14	Taiwan	16.0	↗	█		
	+1	15	Philippines	14.7	↗	█	
	-1	16	Pakistan	14.6	↗	█	
	17	North Korea	11.3	↗	█		
	18	Brunei	10.2	↗	█		
Minorpowers > 10 points	+1	19	Cambodia	9.5	↗	█	
	-1	20	Bangladesh	9.4	↗	█	
		21	Sri Lanka	7.7	↗	█	
	+1	22	Laos	7.0	↗	█	
	-1	23	Myanmar	6.7	↘		█
		24	Mongolia	5.2	↗	█	
		25	Nepal	4.8	↗	█	
		26	Timor-Leste	4.3	NEW	█	
	-1	27	Papua New Guinea	4.2	↗	█	

GREATEST GAINS
INDONESIA +2.9
INDIA +2.8
Philippines +2.0

GREATEST LOSSES
MYANMAR -0.8
NEW ZEALAND -0.6
RUSSIA -0.4

Key Highlights of the report

- India has become the third most powerful nation in Asia, surpassing Japan in the Asia Power Index.
- The Asia Power Index report for 2024 indicated that strong post-COVID economic growth has led India to increase its economic capability by 4.2 points.
- The report also highlights that India has performed well across all other resource measures, especially in future resources, where its score rose by 8.2 points. This growth suggests that India’s youthful population may deliver a demographic dividend in the decades to come, unlike many other countries in Asia.
- India’s Diplomatic Influence has also risen in the Asia Power Index. In 2023, India increased its tempo of diplomatic activity, participating in the sixth-highest number of dialogues with countries included in the Asia Power Index. This helped India surpass Japan, reinforcing its status as the third-largest power in the index and reflecting its increasing geopolitical stature.

About The Asia Power Index

- It ranks 27 countries and territories based on their capacity to shape their external environment, with its scope reaching as far west as Pakistan, as far north as Russia, and as far into the Pacific as Australia, New Zealand, and the United States.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. The report titled Peeling the Layers: A review of the NBFC sector in recent times, is published by?

(a) Reserve Bank of India
(b) State Bank of India
(c) Securities and Exchange Board of India
(d) World Economic Forum

Answer (a)

Descriptive Question

Q. Discuss the significance of Non-Banking Financial Companies (NBFCs) in the Indian financial system. [10 marks] [150 words].

ASIA POWER INDEX 2024

Why in News: India Ranks as Third Most Powerful Nation in Asia, Surpassing Japan in Asia Power Index

- It is published by the Lowy Institute annually from 2018.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. 'Asia Power Index' is released by which of the following?

- (a) International Monetary Fund
- (b) World Bank
- (c) Lowy Institute
- (d) World Economic Forum

Answer (c)

GLOBAL INNOVATION INDEX 2024

Why in News: World Intellectual Property Organization (WIPO) released Global Innovation Index (GII) 2024 report.

Key Details

- In the 2024 edition of the GII, Switzerland, Sweden, the United States, Singapore, and the United Kingdom have emerged as the world's most innovative economies.
- However, India, along with China, Turkey, Vietnam, and the Philippines, has been recognized as one of the fastest-rising economies in terms of innovation over the past decade.
- The Global Innovation Index (GII) was launched in 2007 through a collaboration between INSEAD, a prominent business school, and *World Business*, a British magazine.
- It offers a comprehensive evaluation of global innovation by tracking the performance of 133 economies worldwide.
- The Global Innovation Index serves as a benchmark resource that charts global innovation trends, guiding policymakers, business leaders, and others in unleashing human ingenuity to improve lives and address shared challenges, including climate change.

India's Performance

- India has achieved a significant milestone in the Global Innovation Index (GII) 2024, securing the **39th position among 133** global economies. This leap in ranking reflects India's commitment to fostering a robust innovation ecosystem that is underpinned by strong policies, investment in research and development (R&D), and a collaborative environment for startups and industries.

India's Innovation Journey: A Steady Ascent

INDIA'S RISE IN THE GLOBAL INNOVATION INDEX 2024



- In a span of nearly a decade, India has made tremendous strides in the GII rankings, rising from the 81st position in 2015 to 39th in 2024.
- This steady climb reflects the country's focused approach towards nurturing innovation across various sectors, driven by strong governmental support and a robust intellectual property framework.
- This achievement highlights India's growing leadership in innovation, especially as the country ranks 1st among 10 economies in Central and Southern Asia and 1st among lower-middle-income economies.
- Furthermore, India ranks 4th globally in the World Intellectual Property Organization's (WIPO) Science & Technology (S&T) Cluster Ranking, with key cities like Mumbai, Delhi, Bengaluru, and Chennai listed among the World's Top 100 S&T clusters.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. India's ranking in the 'Global Innovation Index' is sometimes seen in the news. Which of the following has declared that ranking?

- (a) World Economic Forum
- (b) World Intellectual Property Organization
- (c) Global Institute of Intellectual Property
- (d) None of the above

Answer (b)

WORLD SOCIAL PROTECTION REPORT 2024–26

Why in News: International Labour Organization (ILO) released the World Social Protection Report 2024–26: Universal social protection for climate action and a just transition.

Messages from the Report

- Social protection makes an important contribution to both climate change adaptation and mitigation.
 - Social protection is fundamental for climate change adaptation as it tackles the root causes of vulnerability by preventing poverty and social exclusion and reducing inequality.
 - It enhances people's capacity to cope with climate-related shocks ex ante by providing an income floor and access to healthcare.
 - It also contributes to raising adaptive capacities, including those of future generations through its positive impacts on human development, productive investment, and livelihood diversification.
- Social protection is therefore an enabler of climate action and a catalyst for a just transition and greater social justice.
 - Social protection systems, as part of an integrated policy response, meet the imperatives of mitigation and adaptation in an equitable manner.
 - Social protection helps to protect people's incomes, health and jobs, as well as enterprises, from climate shocks and the adverse impacts of climate policies.
 - Social protection encourages productive risk-taking and forward planning and thus can ensure that everyone – including the most vulnerable – can gain from climate change adaptation measures.
- Decisive policy action is required to strengthen social protection systems and adapt them to new realities, especially in the countries and territories most vulnerable to climate change, where coverage is the lowest.
 - Social protection increases the resilience of people, economies and societies by providing a systematic policy response to mutually reinforcing life-cycle risks and climate-related risks (which look poised to become increasingly inseparable and indistinct with each decimal point of global warming).
 - In this context, policymakers will have to achieve a double objective:
 - ◆ Implementing climate policies to support mitigation and adaptation efforts to contain the climate crisis.
 - ◆ Strengthening social protection to address both ordinary life-cycle risks and climate risks.
- The capacity of social protection systems to contribute to a just transition is held back by persistent gaps in social protection coverage, adequacy and financing.

- These hinder the achievement of the Sustainable Development Goals by 2030.
- Investing in reinforcing social protection systems is indispensable for a successful just transition.
- The costs of inaction are enormous, and it would be irrational and imprudent not to invest.
- The case for strengthening social protection systems is therefore as compelling as it is urgent.
- Without investment in universal protection systems, the climate crisis will exacerbate existing vulnerabilities, poverty and inequalities, when precisely the opposite is needed.
- Climate action and a fair transition must be guided by social justice, with human rights at the centre of the process.
 - Social protection can help ensure no one is left behind.
 - It can contribute to rectifying long-standing global and domestic inequalities and inequities rendered more pronounced by the climate crisis.
 - The climate crisis can only be overcome through common effort but with differentiated responsibility proportional to capacity.

Highlights from the Report

- Social protection continues to be elusive for 1.8 billion children
 - Social protection remains elusive for the vast majority of children.
 - For children aged 0 to 18 globally, 23.9% receive a family or child benefit, meaning 1.8 billion children are not covered.
 - For children aged 0 to 15, 28.2% of children are covered, up by 6.1 percentage points since 2015. This equates to 1.4 billion children missing out.
- **Pronounced protection gaps remain for persons of working age:**
 - **Maternity protection:** 36.4% of women with newborns worldwide receive a cash maternity benefit, up by 6.8 percentage points. This equates to 85 million women with newborns not covered.
 - **Sickness benefits (legal coverage):** 56.1% of the labour force in the world, representing 34.4% of the working-age population, is legally entitled to sickness benefits. This means 4.1 billion working-age persons are not legally protected.
 - **Employment injury protection:** 37.4% of workers enjoy employment injury protection for work-related injuries and occupational disease, up by 4.6 percentage points. This leaves 2.3 billion workers totally uncovered.
 - **Disability benefits:** 38.9% of people with severe disabilities receive a disability benefit, up by 6.1 percentage points. This results in 146 million persons with severe disability not covered.

- **Unemployment protection:** 16.7% of unemployed people receive unemployment cash benefits, up by 1.3 percentage points. This translates to 157 million unemployed persons not being covered.
- **Expenditure estimates** show that, worldwide, 4.8 per cent of GDP is allocated to non-health public social protection expenditure for people of working age.
- Older persons still face coverage and adequacy challenges
 - Pensions are the most prevalent form of social protection globally.
 - Worldwide, 79.6% of people above retirement age receive a pension, up by 5.5 percentage points since 2015.
 - Nonetheless, more than 165 million individuals above the statutory retirement age do not receive a pension.
- Social health protection: an essential contribution to universal health coverage
 - The right to social health protection is not yet a universal reality.
 - While more than four fifths (83.7%) of the global population is covered by law, only 60.1% of the global population are effectively protected by a health protection scheme. This means 3.3 billion people do not enjoy protection.
- Priorities Identified for Policymakers to Build Social Protection Systems for Safeguarding the Planet and People's Health, Incomes and Livelihoods
- Mitigating the climate crisis and achieving a just transition requires giving sufficient attention to building rights-based universal social protection systems.
 - Countries must intensify their efforts to address the existential threat of the climate crisis.
- By reinforcing social protection systems, States can demonstrate that they intend to protect their people through a reinvented social contract.
 - This is essential for promoting well-being, social cohesion and the pursuit of social justice.
- Keeping alive the promise of leaving no one behind remains paramount. This means:
 - Pivoting from reducing poverty to preventing poverty and moving away from flimsy social safety nets towards solid social protection floors, and progressively reaching higher, more adequate levels of protection.
 - Ensuring that social protection systems are gender responsive.
 - Facilitating access to quality care and other services.
 - Making health and well being a more central focus of our economies.
- Preparedness for climate shocks and just transition policies requires comprehensive social protection systems to be in place ex ante.

- This means getting the basics right and formulating and implementing national social protection strategies and policies through social dialogue now rather than later.
- Further investment is essential to achieve universal and robust social protection systems.
 - Domestic resource mobilization is critically important for addressing both life-cycle and climate risks in a sustainable and equitable way.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about World Social Protection Report, 2024-25:

1. It is published by International Labour Organization.
2. Social protection remains to be elusive for more than 1.8 bn children.
3. Less than 15% employees receive unemployment cash benefits.

Choose the correct options from the following:

- (a) 1 and 2 only (b) 1 and 3 only
 (c) 1 only (d) 1, 2 and 3

(a) Answer

Descriptive Question

Q. Discuss the key findings of the World Social Protection Report, 2024-26 regarding the coverage gaps in social protection of vulnerable sections of society. What measures can be taken to address these gaps? [15 marks] [250 words]

RBI'S REPORT ON MUMBAI INTERBANK OFFER RATE (MIBOR)

Why in News: The Reserve Bank of India (RBI)'s Committee recently released a report on Mumbai Interbank Offer Rate (MIBOR) Benchmark.

Key Details

- The Reserve Bank of India (RBI)'s Committee on MIBOR Benchmark, in its report published on Tuesday, suggested that the Financial Benchmarks India Limited (FBIL) may develop and publish a benchmark based on the secured money market, referred to as the Secured Overnight Rupee Rate (SORR). This rate will be calculated from trades executed during the first three hours in the basket repo and TREP (Tri Party Repo) segments.
- The Committee was set up to review rupee interest rate benchmarks in India, with a focus on evaluating the usage

of the Mumbai Interbank Outright Rate (MIBOR) and assessing the need for transitioning to new benchmarks.

- The report said that the market for repo in government securities (TREP and market repo), which accounts for 98 percent of overnight money markets and includes both banks and non-banks, is a more representative and robust measure of overnight market funding rates compared to the call money market. This makes it better suited as a benchmark for interest rate derivatives used for hedging.
- However, the Committee also acknowledged that a benchmark based on call money rates, which is the target of monetary policy operations, may be preferred for derivatives aimed at speculating on monetary policy actions.
- The report also suggested that non-residents may be granted gradual access to onshore Interest Rate Derivative (IRD) markets beyond MIBOR Overnight Indexed Swaps (OIS) for purposes other than hedging. This will be contingent upon an assessment of evolving market conditions and the implementation of appropriate risk controls.
- Currently, the RBI has been reviewing the investment limit for foreign investors in the OIS market, Deputy Governor Michael Debabrata Patra had said earlier. As of now, foreign investors have utilized 96 per cent of the Rs 3.5 billion limit allocated for OIS transactions, nearing the maximum threshold.
- The Committee noted that banks in India are increasingly linking their personal, retail, and MSME loans to the policy repo rate, with a growing share of advances tied to this rate. However, international evidence shows that loans are typically priced using interbank money market rates, which are market-determined, unlike policy rates.

PRELIMS SPECIAL

About Mumbai Interbank Offer Rate (MIBOR)

- The MIBOR was the rate at which banks in India wanted to charge other banks to lend them money. It was used in conjunction with the Mumbai Interbank Bid (MIBID) rate, which was the rate banks wanted to pay to borrow money.
- The MIBOR was the Indian version of the London Intraday Offered Rate and was fixed for funds that ranged from overnight to three months.
- The Mumbai InterBank Overnight Rate, or MIBOR, was the overnight lending offered rate for Indian commercial banks.
- MIBOR was first established in 1998 and was modeled after the more widely used London InterBank Overnight Rate (LIBOR).
- Originally, MIBOR was calculated using input from a panel of 30 banks and primary dealers.
- MIBOR was replaced by the FBIL-Overnight MIBOR in 2015.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. What is purpose of Mumbai Interbank Offer Rate (MIBOR)?
- (a) To set benchmark for determining inflation rates.
 - (b) To set benchmark for controlling Non-Performing Assets.
 - (c) To set benchmark for regulate gold price in India.
 - (d) To set benchmarks for interbank loans.

Answer (d)

BUSINESS READY (B-READY) REPORT

Why in News: World Bank released its corporate flagship report Business Ready (B-READY) that evaluates the business and investment climate worldwide.

What is Business Ready?

- Business Ready (B-READY) is a new data collection and analysis project of the World Bank Group to assess the business and investment climate worldwide, accompanied by an annual corporate flagship report.
- It is a key instrument of the World Bank Group's new strategy to facilitate private investment, generate employment, and improve productivity to help economies accelerate development in inclusive and sustainable ways.
- It replaces and improves upon the World Bank Group's earlier Doing Business project.
- It reflects a more balanced and transparent approach toward evaluating an economy's business and investment climate, building on recommendations from hundreds of experts from within and outside the World Bank Group, including from governments, the private sector, and civil society organizations.
- B-READY will provide a quantitative assessment of the business environment with an annual frequency and worldwide coverage.
- The project aims to balance de jure and de facto measures, ensuring that the data produced are both comparable across economies and representative within each economy.

Doing Business	B-READY
The focus of the Doing Business project was on assessing the business environment for small and medium enterprises	B-READY project targets private sector development as a whole.
Doing Business centered on the regulatory burden for firms, with some attention to public services.	B-READY evaluates the regulatory burden as well as the quality of regulations and provision of related public services, along with the ease of compliance with the regulatory framework and the effective use of public services directly relevant to firms.
Used 11 questionnaires	Uses 21 questionnaires
Doing Business collected data through expert consultations and extensive case studies with strict assumptions, covering either de jure or de facto regulations, but not both uniformly.	B-READY combines expert consultations and firm surveys to capture a balanced view of de jure and de facto aspects. This allows B-READY to achieve a better balance between data comparability across economies.
Doing Business assessed economies' performance based on rankings and scores, focusing on aggregate rankings to drive public interest and motivate reforms.	B-READY uses quantifiable disaggregated indicators, aggregating points into scores by topic and pillar. This approach identifies specific areas for reform and encourages reforms without overhyping economy-wide rankings.
Doing Business covered the main business city in 191 economies and the second-largest business city in 11 economies	B-READY aims for wide coverage within and across economies, with coverage for different topics based on whether regulations are national or local.

B-READY's Analytical Framework: Ten topics, Three pillars, Three cross-cutting themes

- Ten Topics

- B-READY is organized according to topics essential for private sector development that correspond to various stages of the life cycle of a firm and its

participation in the market while opening, operating (or expanding), and closing (or reorganizing) a business.

- The 10 topics are Business Entry, Business Location, Utility Services, Labor, Financial Services, International Trade, Taxation, Dispute Resolution, Market Competition, and Business Insolvency

B-READY topics correspond to various stages of the life cycle of a firm and examine three cross-cutting themes



- Three Pillars

- For each topic, B-READY considers three pillars: Pillar I, Regulatory Framework; Pillar II, Public Services; and Pillar III, Operational Efficiency.
- **Pillar I: The Regulatory Framework** consists of the rules and regulations that firms must follow as they open, operate (or expand), and close (or reorganize) a business. Indicators under this pillar distinguish between rules and regulations that promote clarity, fairness, and the sustainability of the business environment and those that unnecessarily inhibit entrepreneurial activity.

- **Pillar II: Public Services** spans the facilities that governments provide to support compliance with regulations and the institutions and infrastructure that enable business activities. Indicators under this pillar are limited to the scope of the business environment in areas related to the life cycle of the firm. They emphasize such aspects as digitalization, interoperability of government services, and transparency.
- **Pillar III: Operational Efficiency** captures the ease of compliance with the regulatory framework and the

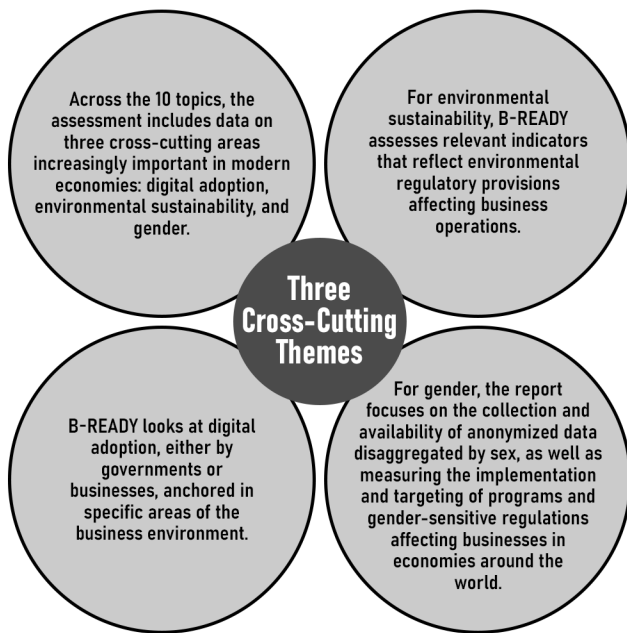
effective use of public services directly relevant to firms.

➤ Within these pillars, common features inform the grouping into a particular category. Each category contains a number of subcategories.

B-READY pillars define the scope of the project



- **Indicators:** Each subcategory has a number of indicators. Across all topics and pillars, B-READY analyzes nearly 1,200 indicators.



Scoring

- For each economy, B-READY produces two sets of scores: one consisting of 10 topic scores and another comprising three pillar scores. Topic and pillar scores can range from a minimum of 0 to a maximum of 100.
- **For topic scores,** every score is generated by averaging the scores assigned to each of the three pillars (Regulatory

Framework, Public Services, Operational Efficiency) for that topic.

- Within these pillars, common features inform the grouping into a particular category.
- Each category contains a number of subcategories. In turn, each subcategory contains a number of indicators.
- Points are allocated to each indicator according to its contribution to firm's flexibility (i.e., ease of business from a firm's perspective) and/or social benefits (i.e., the impact to the broader private sector).
- Indicator points are then compiled to determine the total points for the subcategory, category, and ultimately, the pillar.
- Categories and subcategories are weighted to reflect their significance and relevance to that pillar.
- Each pillar score in a topic is standardized to potentially range from 0 to 100.
- **For pillar scores,** each score is generated by averaging the scores assigned to that pillar (Regulatory Framework, Public Services, or Operational Efficiency) across 10 topics.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. released its corporate flagship report Business Ready (B-READY) that evaluates the business and investment climate worldwide.

(a) World Economic Forum

- (b) World Trade Organization
- (c) International Monetary Forum
- (d) World Bank

Answer (d)

Descriptive Question

Q. Discuss the objectives and significance of the Business Ready (B-READY) project by the World Bank. [10 marks] [150 words]

INTERNATIONAL RENEWABLE ENERGY AGENCY'S REPORT

Why in News: International Renewable Energy Agency (IRENA) and International Labor Organisation published its Annual Review 2024 report titled "Renewable Energy and Jobs"

Key Details

7.1 Million

solar photovoltaic (PV) jobs in 2023, representing 44% of the world's total renewable energy workforce. China dominates with 4.6 million jobs, while the EU is a distant second with 720000 jobs.

2.3 Million

direct jobs in hydropower in 2023, down 4% from 2022, reflecting a slower pace in new additions.

2.8 Million

biofuels jobs in 2023. The bulk is in the agricultural supply chain, including seasonal and part-time work. Brazil has the largest number of jobs, at 994000, followed by Indonesia, at 798600.

1.5 Million

wind power jobs in 2023. China leads with 745000 jobs, while second-ranked Europe still a technology leader

- 2023 saw the highest ever increase in renewable energy jobs, from 13.7 million in 2022 to 16.2 million.

- **Strong growth:** The 18% year-on-year leap reflects the strong growth of renewables generating capacities, together with a continued expansion of equipment manufacturing.
- China leads with an estimated 7.4 million renewable energy jobs, or 46% of the global total.
- **Distribution of Jobs:** The EU followed suit with 1.8 million, Brazil with 1.56 million, and the United States and India, each with close to 1 million jobs.
- **Solar Dominates:** As in the past few years, the strongest impetus came from the rapidly growing solar photovoltaics (PV) sector, which supported 7.2 million jobs globally. Of these, 4.6 million were in China, the dominant PV manufacturer and installer. Enabled by significant Chinese investments, Southeast Asia has emerged as an important export hub of solar PV, creating jobs in the region.
- **Biofuels:** Liquid biofuels had the second-largest number of jobs, followed by hydropower and wind. Brazil topped the biofuels ranks, accounting for one third of the world's 2.8 million jobs in this sector. Soaring production put Indonesia in second, with a quarter of global biofuels jobs.
- **Hydropower:** Due to a slowdown in deployment, hydropower became an outlier to the overall growth trend, with the number of direct jobs estimated to have shrunk from 2.5 million in 2022 to 2.3 million. China, India, Brazil, Vietnam and Pakistan were the largest employers in the industry.
- **Wind energy:** In the wind sector, China and Europe remain dominant. As leaders in turbine manufacturing and installations, they contributed 52% and 21% to the global total of 1.5 million jobs, respectively.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Report titled 'Renewable Energy and Jobs' is prepared by?
- (a) International Renewable Energy Agency
 - (b) International Labour Organization
 - (c) World trade organization
 - (d) World Economic Forum

Answer (a)

FOREST DECLARATION ASSESSMENT REPORT 2024

Why in News: The Forest Declaration Assessment report 2024: 'Forests under fire' is released.

Key details of the report

- Forested Key Biodiversity Areas, which are essential habitats for precious forest-dependent species, suffered over a million hectares of tree cover loss in 2023. In 2023, the world lost 6.37 million hectares of forest.
 - This loss was 45 per cent higher than the goal set by over 140 countries to eliminate deforestation by 2030.
 - Irreplaceable primary forests continue to face inexcusable destruction.
 - Primary tropical forests, essential for storing carbon and protecting biodiversity, lost 3.7 million hectares in 2023.
- Forest fires are growing in frequency and intensity around the world, largely due to human-induced climate change and intentional fire-setting to clear land.
 - This trend of worsening fires puts achieving the 2030 forest goals even further out of reach.

- The 2024 Forest Declaration Assessment report focuses on tracking the overarching forest goals:
 - halting deforestation.
 - halting forest degradation.
 - restoring 30% of degraded forest area.
 - halting the loss of forest areas critical for biodiversity.
- The report presented a special analysis of the implications of worsening forest fires for achieving the 2030 forest goals.

LIVING PLANET REPORT

Why in News: World Wildlife Fund WWF has released the latest edition of its biennial 'Living Planet' report.

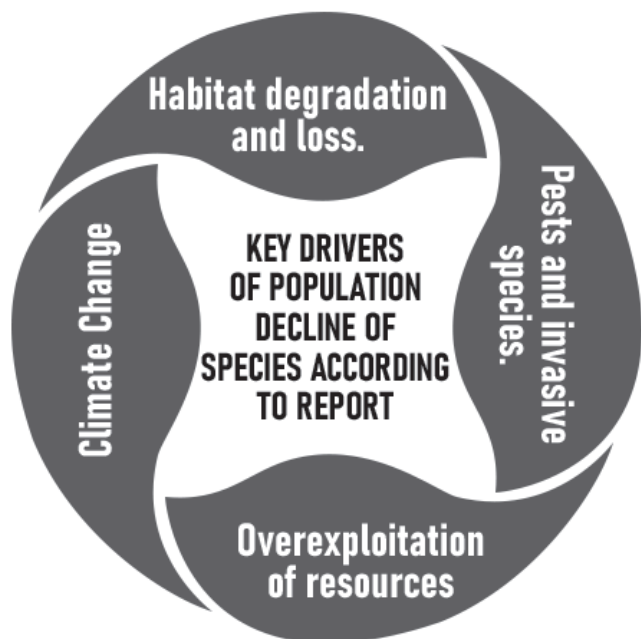
Key Highlights of the Report

- The *Living Planet Report 2024*, revealed that the average size of monitored wildlife populations has decreased by 73 per cent since 1970.
- Significant decline in Population:** Populations have declined significantly over the last 50 years, according to trends in nearly 35,000 wildlife populations and 5,495 species of amphibians, birds, fish, mammals and reptiles.
- Need for Urgent action:** The paper titled a System emphasised the severe impact of human activities on wildlife and called for urgent action to protect biodiversity.
- Living Planet Index:** The WWF uses the Living Planet Index (LPI), which tracks the average trends in wildlife populations rather than focusing on increases or declines in individual species numbers. By monitoring changes in species population sizes over time, the LPI serves as an early warning indicator of extinction risk and helps assess ecosystem efficiency.
- Freshwater species most affected:** Between 1970 and 2020, freshwater species were the most affected, with an 85 per cent decline, followed by a 69 per cent decline in terrestrial species and a 56 per cent decline in marine populations, the report noted.
- Region wise decline:** At a regional level, WWF highlighted the steepest declines in Latin America and the Caribbean, where populations have dropped by 95 per cent, followed by Africa, which has seen a 76 percent decline.
- The Asia-Pacific region collectively reported a 60 per cent decline. Europe has experienced comparatively smaller declines; however, Central Asia and North America have seen population drops of 35 per cent and 39 per cent, respectively.

Suggestions for World Leaders

Value of Forests	Recognize the true value of forests and other ecosystems and restructure their economic planning accordingly
Radical Shift in Policy	Embrace a radical shift from the paradigm of unsustainable exploitation and inequality that is so deeply entrenched in our society.
Mandate for Private Sector	Build a regulatory and fiscal environment that mandates private sector action, disclosure, and accountability for forests and other ecosystems that simultaneously incentivizes the protection, sustainable management, and restoration of forests.
Rights Based Approach	Adopt a rights-based, comprehensive, and resilient approach to forest protection, conservation, and restoration that prioritizes inclusive and participatory governance to endure through political shifts.
Global Problem	Step up to address deforestation and conversion as a shared, global problem. Act according to the new reality of climate change where forest fires have become more frequent and intense, and degradation continues to pose a serious threat to forests all over the world.
Embrace Restoration	Leaders must also prioritize investments in restoration, embracing the potential of assisted natural regeneration, alongside complementary restoration activities aiming to increase forest cover and increase the use of tree cover within productive, multifunctional landscapes.
Increase Transparency and Accountability	Ensure full transparency on the implementation of forest commitments, so progress can be tracked, and pledgers held accountable.

- Tracking progress on restoration is hindered by fragmented and incomplete data, but local, regional, and global efforts to improve restoration monitoring are making serious headway.



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. The Living Planet Report 2024, is released by
- (a) World Economic Forum
 - (b) World Wildlife Fund
 - (c) Global Environment Facility
 - (d) United Nations

Answer (b)

SOUTH ASIA DEVELOPMENT UPDATE

Why in News: The Office of the Chief Economist of the South Asia Region under World Bank released the South Asia Development Update October 2024 titled Women, Jobs, and Growth.

Key Findings

- **Output growth in South Asia** is on track to exceed earlier expectations, at 6.4% in 2024 and 6.2% a year in 2025–26, in a broad-based upturn.
- It is expected to remain higher than in all other **emerging market and developing economy (EMDE)** regions. This outlook is subject to downside risks from extreme weather events, social unrest, debt distress, and reform delays.
- The region’s fragile fiscal and external positions leave few buyers against these downside risks.

- Boosting productivity growth and employment, especially among women, while adapting to climate change remain core policy challenges.
- **Way Forward**
 - Raising employment among women to levels comparable to those among men could raise output by as much as one-half in the long term.
 - Increased openness to global trade and investment, along with the removal of obstacles to the growth of firms, could attract foreign investment, accelerate the diffusion of new technologies, and spur the private investment needed for job creation.

Implications of Geoeconomic Fragmentation for South Asia

- The global economy is fragmenting along geopolitical lines.
- South Asian economies have limited exposure to geopolitical shocks as they are among the quarter of EMDEs that are least open to global trade and investment.
- Their lack of openness is protective and also limits their ability to take advantage of the reshaping of global supply chains and trade.
- Although South Asian countries maintain fairly diverse trade and investment ties, they would benefit from further opening to global trade and investment, improvements in infrastructure and logistics, and greater institutional effectiveness.
- **Way Forward:** Cultivating diversified trading partners and creditors across the geopolitical spectrum could help South Asian countries mitigate vulnerabilities in a more open and dynamic economy.

Heat and Floods in South Asia: Household and Firm Exposure

- 1** Climate change is increasingly exposing South Asia to extreme heat, floods, and other weather shocks, but some groups are more exposed than others.
- 2** Poorer South Asian households experience more heat than wealthier ones.
- 3** In urban areas, poorer households also experience more damage and disruption from recurring flooding. And, in India, smaller firms are more exposed to both heat and flooding.
- 4** These disparities highlight a need to remove obstacles to relocation, especially for the poor, and to spur the growth of firms.
- 5** **Way Forward:** Information on the location of the most climate affected people can inform targeting mechanisms for social protection systems that can readily respond to shocks.

Mind the Side Effects: Remittances and Economic Structure

- Several South Asian countries are among the EMDEs with the highest remittance inflows relative to GDP.
- While remittances help reduce poverty and improve household education and health, large inflows can create currency appreciation pressures and international competitiveness losses, with adverse consequences for exports, non-agricultural sectors, and private investment.
- Governments can encourage remittance in flows but offset the associated loss of competitiveness by reducing other costs of doing business. For example, they can shift away from trade-related taxes and create an environment conducive to faster productivity and employment growth.

Empower to Prosper: Women Working for Growth

- Over the past three decades, South Asia has benefited from strong economic growth, accompanied by a shift toward services sectors, growing exports, and stronger legal protections for women.
- These changes have expanded opportunities for all, including for many women. And yet, women's employment remains a source of untapped potential.
- South Asia's female labor force participation remains among the lowest in the world: only 32% of working-age women in the region participate in the labor force, far below the EMDE average of 54%.

Key Details

- This low participation rate represents a costly misallocation of resources: raising this rate to that of men could boost per capita incomes by up to one-half.

Way Forward

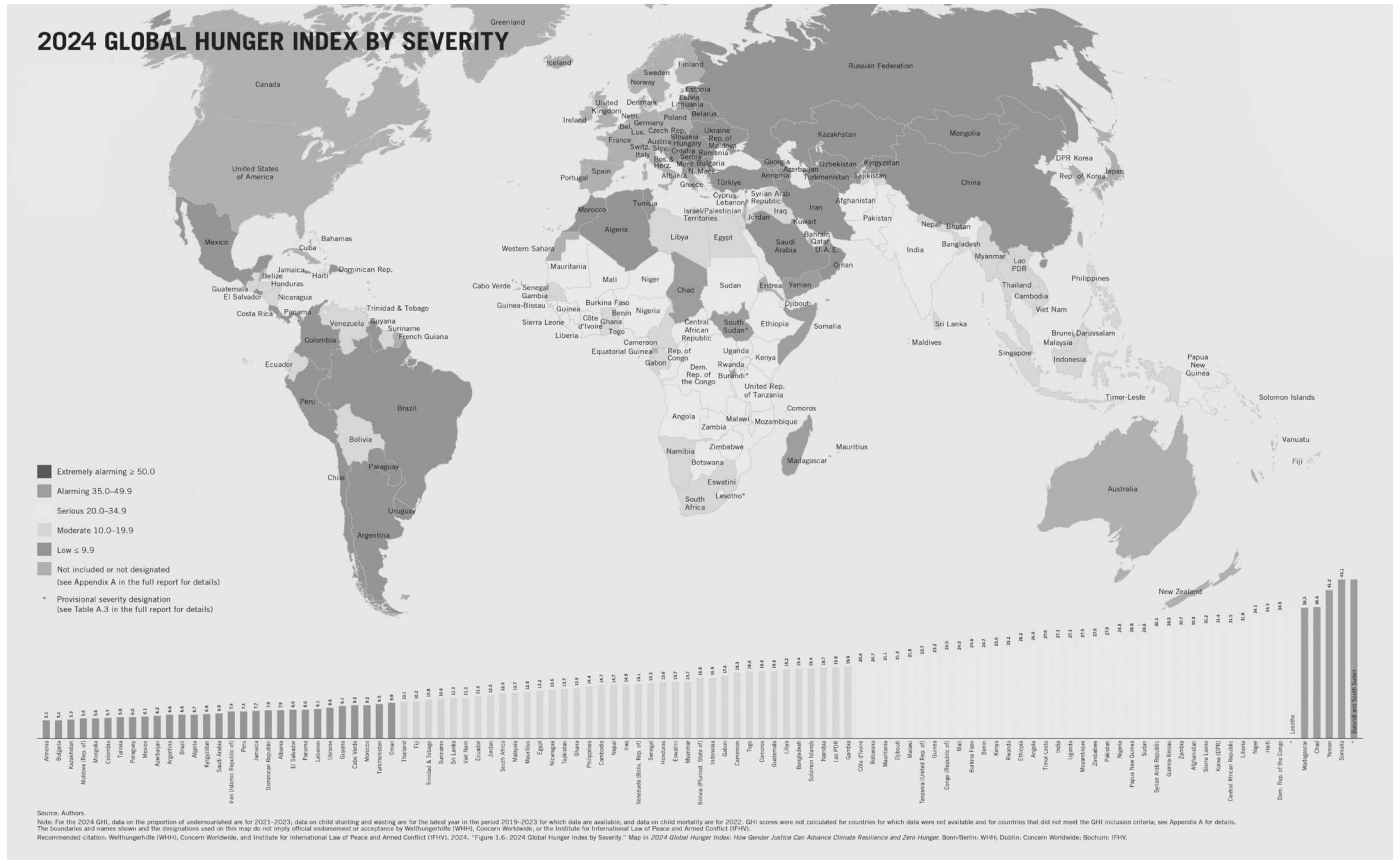
- A wide range of policies could help women enter the workforce. These include legal reforms to improve gender equality, faster job creation in non-agricultural sectors, and the removal of barriers to women working outside the home.
- Such measures are likely to be more effective if accompanied by a shift toward social norms that look more favorably upon women's employment.

The Role of Laws, Beliefs, and Social Expectations in Labor Markets

- Both restrictive laws and conservative social norms depress female labor force participation.
- In part, this may result from weak implementation of de jure rights because of more conservative personal beliefs and, particularly, social expectations.

GLOBAL HUNGER INDEX (GHI), 2024

Why in News: India has been ranked 105th out of 127 countries in the Global Hunger Index (GHI) 2024, placing it in the "serious" category for hunger levels.



- The GHI, a tool used to measure and track hunger globally, is based on indicators like undernourishment, child stunting, child wasting, and child mortality.
- The index is published by Concern Worldwide, an Irish humanitarian organisation, and Welthungerhilfe, a German aid agency.
- With a GHI score of 27.3, India’s performance remains concerning, particularly when compared to its South Asian neighbours such as Bangladesh, Nepal, and Sri Lanka, which fall into the “moderate” category. India is listed alongside countries like Pakistan and Afghanistan, which also face severe hunger challenges.
- The report reveals alarming statistics: 13.7 percent of India’s population is undernourished, 35.5 percent of children under five are stunted, 18.7 percent suffer from wasting, and 2.9 percent of children die before their fifth birthday. These figures reflect deep-rooted issues related to undernutrition, unhealthy environments, and inadequate access to essential nutrients.
- The Global Hunger Index 2024 calls for more decisive action to address hunger in India and warns that without significant progress, the hunger crisis in the world’s poorest countries could persist for decades.

and interconnected challenges are affecting the world simultaneously - taking seriously the trade-offs and complementarities across objectives that are embedded in different policy approaches.

- The main messages are presented around **Progress** in terms of the goals, **Pathways** to move forward, and **Priorities** depending on where countries stand on the interlinked goals.

Progress: Global Poverty Reduction and Improvements in Shared Prosperity have Stalled

- Global poverty reduction has slowed to a near standstill, with 2020–30 set to be a lost decade.
 - Today, 8.5 percent of the world lives in extreme poverty (those living on less than \$2.15 per person per day).
 - At a poverty standard more relevant for upper-middle-income countries (\$6.85 per person per day), 44 percent of the world’s population lives in poverty.
 - The number of people living under this higher standard has barely changed since 1990 due to population growth.
 - At the current pace of progress, it would take decades to eradicate extreme poverty and more than a century to lift people above \$6.85 per day.
- **The number of economies with high inequality has fallen.**
 - The number of economies with high income or consumption inequality—defined as a Gini coefficient above 40—has fallen from 61 to 49 in a decade.
 - High-inequality economies are concentrated in Latin America and the Caribbean and Sub-Saharan Africa and are home to 1.7 billion people in 2022, approximately one-fifth of the world’s population.
- **The global environment is facing multiple and interconnected crises or a polycrisis.**
 - The global environment that has become more challenging amid a polycrisis - from slow growth prospects and high levels of debt to increased uncertainty, fragility, and polarization.
 - Economic growth in the poorest countries is projected to remain weaker than in the decade before the pandemic.
 - In addition, debt interest payments in the poorest settings are reaching an all-time high, diverting spending away from critical needs.
- Large gaps in human capital, basic infrastructure, and life essentials affect significant populations in the poorest regions.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about Pali language:

1. The index is published by Concern Worldwide, an Irish humanitarian organisation, and Welthungerhilfe, a German aid agency.
2. India has been ranked 105th out of 127 countries in the Global Hunger Index (GHI) 2024, placing it in the “serious” category for hunger levels.

Which of the above statements are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither of them.

Answer (c)

POVERTY, PROSPERITY, AND PLANET REPORT

Why in News: World Bank Group has released the Poverty, Prosperity, and Planet Report - Pathways Out of the Polycrisis.

Key Findings

- This report offers the first postpandemic assessment of global progress on this agenda.
- This report explores different potential pathways out of the polycrisis - an environment where multiple

Pathways: Eradicating Poverty and Boosting Shared Prosperity on a Livable Planet requires Managing Trade-offs

- Progress on the interlinked goals requires faster and

inclusive growth and protecting people from extreme weather events.

- With limited budgets, high uncertainty, and conflicting interests, policy makers must prioritize and make difficult choices.
- Actions need to recognize that emissions are primarily generated by richer countries and that poorer countries are the most at risk.
- Advancing on the eradication of extreme poverty does not come at a big cost for the planet because the poorest countries contribute so little to emissions.

Priorities: Doing What Matters Where it Matters

- Low-income and fragile countries need to prioritize poverty reduction by fostering investment in human, physical, and financial capital.
- Middle-income countries must prioritize income growth that reduces vulnerability and pursue synergistic actions.
- High-income and upper-middle-income countries with high emissions must accelerate mitigation to advance on the interlinked goals globally while managing transition costs.
- **Advancing on these interlinked global challenges requires a solid foundation of evidence.**
 - Across the board, more and better data are needed to address the complex policy issues and monitor impacts.
 - More investment is needed to produce reliable, granular, and timely information, and that requires foundational efforts to strengthen national statistical systems and innovative approaches to advance the frontier of data and modeling for welfare analysis.
- **Urgent and coordinated global action is essential to meet these interlinked goals.**
 - The financing gap for sustainable development is growing, which hinders lower-income countries' ability to invest across multiple objectives.
 - This constrained environment creates an urgent need to focus and prioritize the actions that will have the highest return for development and that can allow the world to make significant progress. It calls for fundamental changes in how countries approach their national development strategies and their contribution to global public goods.

WORLD ENERGY OUTLOOK 2024

Why in News: International Energy Agency (IEA) published its flagship report, World Energy Outlook (WEO) 2024.

About World Energy Outlook (WEO), 2024

- It identifies and explores the biggest trends in energy demand and supply, as well as what they mean for energy security, emissions and economic development.

- This year's Outlook comes against a backdrop of escalating risks in the Middle East and heightened geopolitical tensions globally, and explores a range of energy security issues that decision makers face as they proceed with clean energy transitions.
- With rising investment of clean technologies and rapid growth in electricity demand, the WEO 2024 examines how far the world has come on its journey towards a safer and more sustainable energy system, and what more needs to be done to reach its climate goals.
- Reflecting today's uncertainties, the three main scenarios are complemented with sensitivity cases for renewables, electric mobility, liquefied natural gas and how heatwaves, efficiency policies and the rise of artificial intelligence might affect the outlook for electricity.

Key Observations and Details from the Report

- Geopolitical tensions and fragmentation are major risks for energy security and for coordinated action on reducing emissions.
 - Escalating conflict in the Middle East and Russia's ongoing war in Ukraine underscore the continued energy security risks that the world faces.
 - Fragility in today's energy markets is a reminder of the abiding importance of energy security – the foundational and central mission of the International Energy Agency (IEA) – and the ways that more efficient, cleaner energy systems can reduce energy security risks.
 - Clean energy transitions have accelerated sharply in recent years, shaped by government policies and industrial strategies, but there is more near-term uncertainty than usual over how these policies and strategies will evolve.
- Robust, independent analysis and data-driven insights are vital to navigate today's energy uncertainties.
 - Reflecting today's uncertainties, our three main scenarios are complemented by sensitivity cases for renewables, electric mobility, liquefied natural gas (LNG) and how heatwaves, efficiency policies and the rise of artificial intelligence (AI) might affect electricity demand.
- Geopolitical risks abound but underlying market balances are easing, setting the stage for intense competition between different fuels and technologies.
 - The next phase in the journey to a safer and more sustainable energy system is set to take place in a new energy market context, marked by continued geopolitical hazards but also by relatively abundant supply of multiple fuels and technologies.
- How fast will clean energy transitions unfold?
 - Clean energy is entering the energy system at an unprecedented rate, including more than 560 gigawatts (GW) of new renewables capacity added

in 2023, but deployment is far from uniform across technologies and countries.

- China stands out: it accounted for 60% of the new renewable capacity added worldwide in 2023 – and China’s solar PV generation alone is on course to exceed, by the early 2030s, the total electricity demand of the United States today.
- Clean energy momentum remains strong enough to bring a peak in demand for each of the fossil fuels by 2030.
 - Demand for energy services is rising rapidly, led by emerging and developing economies, but the continued progress of transitions means that, by the end of the decade, the global economy can continue to grow without using additional amounts of oil, natural gas or coal.
- The world has the need and the capacity to go much faster.
 - Ample clean energy manufacturing capacity creates scope for faster transitions that move towards alignment with national and global net zero goals, but this means addressing imbalances in today’s investment flows and clean energy supply chains.
- Demand for electricity is taking off, but how high will it go?
 - The contours of a new, more electrified energy system are coming into focus as global electricity demand soars.
 - Rising data centre electricity use, linked in part to growing use of AI, is already having some strong local impacts, but the potential implications of AI for energy are broader and include improved systems coordination in the power sector and shorter innovation cycles.
- The rise of electric mobility, led by China, is wrong-footing oil producers.
 - The slowdown in oil demand growth in the STEPS puts major resource owners in a bind as they face a significant overhang of supply.
- Who will ride the wave of new LNG?
 - An increase of nearly 50% in global LNG export capacity is on the horizon, led by the United States and Qatar, but the prices that many suppliers need to recover their investments may not entice developing economies to switch to natural gas at scale: something has to give.
- Lower fuel prices ease concerns about affordability and industrial competitiveness in fuel-importing economies.
 - The new market context may provide some breathing space for fuel-importing countries and regions – such as Europe, and South and Southeast Asia – that have been hit hard by higher prices for fossil fuels and electricity in recent years.
- A sustainable energy system needs to be people-centred and resilient.

- A new energy system needs to be built to last: this means prioritising security, resilience and flexibility, and ensuring that the benefits of the new energy economy are shared.
- Dividing lines are emerging on energy and climate, which can only be bridged if there is more help provided to poorer countries, communities and households to manage the upfront costs of change, including much greater international support.
- Choices and consequences
 - Despite gathering momentum behind transitions, the world is still a long way from a trajectory aligned with its climate goals. Decisions by governments, investors and consumers too often entrench the flaws in today’s energy system, rather than pushing it towards a cleaner and safer path.

PRELIMS SPECIAL

About International Energy Agency (IEA)

- The IEA was founded in 1974 to ensure the security of oil supplies. It was created in response to the 1973-1974 oil crisis when an oil embargo by major producers pushed prices to historic levels, and exposed the vulnerability of industrialised countries to dependency on oil imports.
- The IEA’s founding members were Austria, Belgium, Canada, Denmark, Germany, Ireland, Italy, Japan, Luxembourg, The Netherlands, Norway, Spain, Sweden, Switzerland, Türkiye, UK, and USA.
- **Members:** The IEA is made up of 31 member countries. In addition, thanks to its successful open door policy to emerging countries, the IEA family also includes thirteen association countries. Five countries are currently seeking IEA membership: Chile, Colombia, Israel, Latvia and Costa Rica.

GLOBAL MULTIDIMENSIONAL POVERTY INDEX, 2024

Why in News: The 2024 Global Multidimensional Poverty Index, is published with the theme of Poverty Amid Conflict. India among five countries with largest number of people living in poverty.

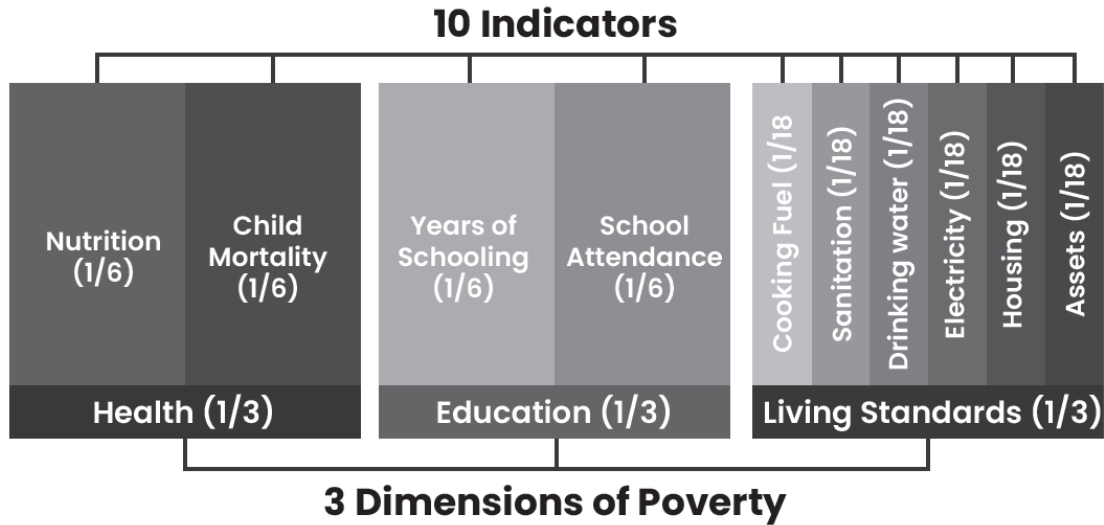
Key Details

- The latest update of the global Multidimensional Poverty Index (MPI) was released on Thursday by the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI) based at the University of Oxford.
- It said that 1.1 billion people live in acute poverty worldwide, with 40 percent living in countries experiencing war, fragility and/or low peacefulness, according to at least one of the three widely used datasets of conflict settings.

- India has 234 million people living in poverty, which is medium Human Development Index, placing the country among five globally with the largest number of people living in poverty.
- “The other four countries are Pakistan (93 million), Ethiopia (86 million), Nigeria (74 million) and the Democratic Republic of the Congo (66 million), all low HDI.
- The report notes that over half of the 1.1 billion poor people are children under the age of 18 (584 million). Globally, 27.9 percent of children live in poverty, compared with 13.5 percent of adults.

About Multidimensional Poverty index

- The global Multidimensional Poverty Index (MPI) is an index of acute multidimensional poverty that covers over 100 countries.
- It is computed using data from the most recent Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), Pan Arab Project for Family Health (PAPFAM) and national surveys.
- The MPI has three dimensions and 10 indicators. Each dimension is equally weighted, and each indicator within a dimension is also equally weighted. Any person who fails to meet the deprivation cutoff is identified as deprived in that indicator.



PRELIMS SPECIAL

The Global Multidimensional Poverty Index

- It is an index of acute multidimensional poverty that covers over 100 countries.
- It is computed using data from the most recent Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), Pan Arab Project for Family Health (PAPFAM) and national surveys.
- The MPI has three dimensions and 10 indicators. Each dimension is equally weighted, and each indicator within a dimension is also equally weighted.
- Any person who fails to meet the deprivation cutoff is identified as deprived in that indicator.
- The global MPI is then created using multidimensional measurement method of Alkire and Foster (AF).

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about Multidimensional Poverty Index (MPI).

1. The MPI has three dimensions and 10 indicators measuring Health, Education and Living standards.
2. The report is released by the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI).

Which of the above statements are correct:

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither of them.

(c) Answer

PERSONALITIES IN NEWS

RAJA RAVI VARMA

Why in News: The 118th Death Anniversary of the world-renowned artist Raja Ravi Varma was recently observed.

About Raja Ravi Varma

- Raja Ravi Varma was a painter par excellence whose works not only put India on the map but also placed him on the pedestal with other great artists.
- Born 29 April, 1848 at Kilimanoor in the erstwhile State of Travancore, Raja Ravi Varma's paintings of the Royals, illustrious personalities and contemporary figures were widely sought-after and greatly admired.
- An eye for detail, splendid use of colours and rich texture gave his paintings a classy, exquisite look, the reason why his works are priceless even to this day.
- His realistic portrayals and interpretations of religious and mythological figures that adorn the households today, captivated and fascinated the country as well as an international audience.
- His works transcended painting; he was also a poet, scholar and a visionary far beyond his times.
- His work also helped focus attention on his talented peers and paved the way for a succession of artists.
- His intention was to take art to the common man and not to limit it just to a privileged few.
- By establishing a press to make reproductions of his works, He ensured a strong foundation of admiration and respect from all.
- As an artist, **he fused two styles together:** European art's technical and aesthetic knowledge, and the emotional sensibilities and storytelling from Indian art.
- He was honoured an invitation to the World's Columbian Exhibition at Chicago in 1893, where Swami Vivekananda gave his now well-known speech. Raja Ravi Varma showcased ten of his paintings there.
- In 1894, he established the Raja Ravi Varma Fine Arts Lithographic Press. This kicked off a print movement of colour lithographs in India.
- **His Influence**
 - Over the years many of us have forgotten how Raja



Raja Ravi Varma has influenced our lives in subtle, yet defining ways.

- His visual images of gods and goddesses which attained celestial reverence has impacted almost all walks of life.
- These can be related to his influence on Indian comic books, temple architecture, jewellery, textiles and ceramics to name a few.
- **Works**
 - Raja Ravi Varma's works are catalogued here as Paintings (Oils), Portraits (Oils) and Works from the Raja Ravi Varma Press and others across India.
 - His vision helped forge a new identity and stature for Indian art by fusing Indian tradition and classical European technique.
- **Examples**
 - ◆ Damayanti
 - ◆ Yashoda Krishna
 - ◆ The Coquette
 - ◆ Hanuman's Discourse
 - ◆ Radha and Krishna
 - ◆ The Reverie

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding works of Raja Ravi Varma:

1. In 1894, he established Raja Ravi Varma Fine Arts lithographic press.
2. He fused European and Indian art together.
3. His works exclusively focused on paintings.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Answer : (b) 1 & 2

Descriptive Questions

Q. Elucidate the contribution of Raja Ravi Varma to the Indian art scene. [10 marks] [150 words]

SHAHEED BHAGAT SINGH

Why in News: Prime Minister recently paid tribute to freedom fighter Bhagat Singh on his 117th birth anniversary

About Shaheed Bhagat Singh

- Bhagat Singh (born September 27, 1907, Lyallpur, western Punjab, India [now in Pakistan]—died March 23, 1931, Lahore [now in Pakistan]) was a revolutionary hero of the Indian independence movement.
- Education:** Bhagat Singh attended Dayanand Anglo Vedic High School, which was operated by Arya Samaj (a reform sect of modern Hinduism), and then National College, both located in Lahore. He began to protest British rule in India while still a youth and soon fought for national independence.
- Early works:** He also worked as a writer and editor in Amritsar for Punjabee- and Urdu-language newspapers espousing Marxist theories. He is credited with popularizing the catchphrase “Inquilab zindabad” (“Long live the revolution”).
- Revolutionary activities:**
 - **Saunder’s Murder:** In 1928 Bhagat Singh plotted with others to kill the police chief responsible for the death of Indian writer and politician Lala Lajpat Rai, one of the founders of National College, during a silent march opposing the Simon Commission. Instead, in a case of mistaken identity, junior officer J.P. Saunders was killed, and Bhagat Singh had to flee Lahore to escape the death penalty.
 - **Bombing in Central Legislative Assembly:** In 1929 he and an associate dropped a bomb at the Central Legislative Assembly in Delhi to protest the implementation of the Defence of India Act and then surrendered.
- Demise:** He was hanged at the age of 23 for the murder of Saunders.



Importance and relevance of Bhagat Singh in past and present

- Bhagat Singh’s importance lies in the fact that he represented the character and temper of the revolutionaries of his times. He was both an activist and a thinker. His ideas are no less important than his death as a martyr.

- Bhagat Singh’s family background, his schooling, his contacts with the revolutionaries in India and his study of the writings of the European revolutionaries, all had their share in the making of Bhagat Singh as a revolutionary.
- He was not a militant by belief. He considered terrorism useful under extreme circumstances and was neutral in his choice of means to achieve a noble purpose.
- Bhagat Singh considered the British Rule in India as immoral, unjustifiable and wicked. He wanted an uncompromising struggle for freedom. But freedom of the country was only the first step to wider freedom for the majority of people-workers and peasants. Their exploitation he wanted to see ended. This was to be his ultimate goal.
- He considered the national movement Congress as confused in its goal and desirous of protecting the interests of the bourgeoisie. He openly criticized the Gandhian methods and policies. He was critical of the promotion of a personality cult.
- Criticism and independent thinking were essential pre-requisites of a revolutionary. He wanted a party comprising the discipline, hard working, dedicated and uncompromising young men.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Consider the following statements about Bhagat Singh:
- Bhagat Singh was a staunch supporter of Gandhian methods and policies.
 - He considered the British rule in India as immoral, unjustifiable and wicked.
 - He was critical of promotion of personality cult.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

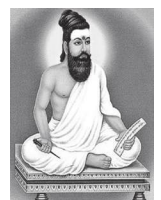
Answer: (b) 2 & 3

Descriptive Question

Q. Examine the role of Bhagat Singh in India’s freedom struggle. [10 marks] [150 words]

THIRUVALLUVAR

Why in News: The Prime Minister recently announced the opening of a Thiruvalluvar Chair of Tamil studies in the University of Houston.



Key Details

- According to a US-India joint statement, US President Joe Biden and PM Modi welcomed the establishment of the Tamil

Studies Chair at the University of Houston and reinstating the Vivekananda Chair at the University of Chicago to further research and teaching of India's history and culture.

- The leaders welcomed the establishment of a new Joint Task Force of the Association of American Universities and leading Indian educational institutions, including the Indian Institutes of Technology.

PRELIMS SPECIAL

About Thiruvalluvar

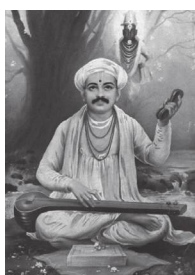
- Thiruvalluvar, commonly known as Valluvar, was an Indian poet and philosopher.
- He is best known as the author of the Tirukkural, a collection of couplets on ethics, political and economic matters, and love. The text is considered an exceptional and widely cherished work of Tamil literature.
- He is believed to have lived in the town of Mylapore (a neighbourhood of the present-day Chennai), and his floruit is dated variously from fourth century BCE to early fifth century CE.
- There is negligible authentic information available about Valluvar's life. In fact, neither his actual name nor the original title of his work can be determined with certainty.
- Tirukkural itself does not name its author. Monsieur Ariel, a French translator of his work in the 19th century, famously said it is "the book without a name by an author without a name".
- The name Thiruvalluvar (lit. Saint Valluvar) was first mentioned in the later text Tiruvalluva Malai.

SANT TUKARAM

Why in News: Maharashtra govt approves renaming Pune airport to Jagadguru Sant Tukaram Maharaj Airport

About Sant Tukaram

- Sant Tukaram Maharaj, also known simply as Tukaram, was a revered 17th-century Hindu saint and poet from Maharashtra.
- He played a key role in the Bhakti movement, particularly through his devotional poetry, known as Abhanga, which centres around devotion to Vithoba, a form of Lord Krishna worshipped in Pandharpur.
- Born in 1608 in Dehu, a village near Pune, Tukaram dedicated much of his life to spiritual practices, holding community gatherings (kirtans), and writing poetry.
- His work often addressed social inequalities and promoted spiritual equality, regardless of caste.
- Despite initial opposition from societal figures, Tukaram eventually gained widespread respect, even winning over some of his critics.



- Tukaram's Abhanga poetry is known for its simplicity and profound depth, focusing on themes of devotion, divine love, and the human condition.
- His collection of around 4,500 poems, known as the Tukaram Gatha or Abhanga Gatha, reflects a broad spectrum of emotions and spiritual insights.
- His writings often express a pantheistic belief in the presence of God throughout the universe.

Sant Tukaram Shila Mandir

- Prime Minister Narendra Modi inaugurated the Sant Tukaram Shila Mandir in the temple town of Dehu in Pune district in 2022.
- Shila refers to a rock that is currently on the Dehu Santhan temple premises, and that for centuries has been the starting point of Wari, the annual pilgrimage to Pandharpur.
- The Bhakti saint Sant Tukaram had sat on this piece of rock for 13 continuous days when challenged about the authenticity of the Abhyangs he had written.
- The very rock where Sant Tukaram Maharaj sat for 13 days is pious and a place of pilgrimage for the Warkari sect.

Sant Tukaram and Warkari Sect

- Sant Tukaram and his work are central to the Warkari sect spread across Maharashtra.
- His message about a casteless society and his denial of rituals had led to a social movement.
- Sant Tukaram is credited with starting the Wari pilgrimage.
- Participants finish their sowing before they set off. The pilgrims reach Pandharpur on the day of Ekadashi.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Sant Tukaram

1. Sant Tukaram was a 17th century poet-saint of Bhakti movement in Karnataka.
2. He is known for his Abhanga dedicated to lord Shiva.
3. He is credited with starting the Wari pilgrimage.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Answer: (a) 3 Only

Descriptive Question

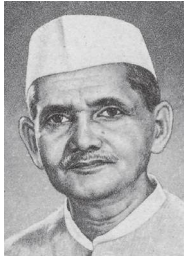
Q. Discuss the significance of Sant Tukaram's teaching on spiritual and social life of Maharashtra. [10 marks] [150 words]

LAL BAHADUR SHASTRI

Why in News: Prime Minister has recently paid tributes to Shri Lal Bahadur Shastri on his birth anniversary, 02nd October.

About Lal Bahadur Shastri

- Shastri came from humble origins in Uttar Pradesh, and his youth was dedicated to India's struggle for independence.
- Post-independence, he served in the UP state government and the central government, before becoming Prime Minister in 1964 after the death of PM Jawaharlal Nehru (1889-1964).
- While he had an eventful two-year stint at the helm of the country, he passed away suddenly in Tashkent (present-day Uzbekistan), with his death still heavily speculated upon.



Early Life

- **Poverty and despair :** Shastri was born in Mughalsarai in 1904. Unfortunately, his father passed away a few years after he was born, and he spent most of his childhood living with his maternal relatives in a lower-middle-class environment. According to some accounts, he owned only two kurtas and dhotis.
- **Social Consciousness:** At an early age, Shastri displayed the beginnings of a social consciousness and dropped his birth name "Varma". In the biography **Lal Bahadur Shastri: A Life of Truth in Politics**, author and retired bureaucrat CP Srivastava (who also worked with Shastri) wrote that when Shastri was in Class VI and set to enrol in a school, his name was given as Lal Bahadur Varma. Stating his opposition to caste differences, he told his family he did not wish to keep the surname 'Varma'. And so, he became known as Lal Bahadur.
- 'Shastri' was added to his name in 1925, after he acquired the degree of 'Shastri' (one who knows the Shastras) from the Kashi Vidyapeeth in Benaras"

Pre- independence struggle

- Shastri's love for the motherland was evident when he responded to Mahatma Gandhi's call to join the Non-Cooperation Movement at the young age of 16.
- He worked for the betterment of the Harijans at Muzaffarpur and dropped his caste-derived surname of "Srivastava". Shastri's thoughts were influenced by reading about Swami Vivekananda, Mahatma Gandhi and Annie Besant.
- Deeply impressed and influenced by Gandhi, he joined the Indian Independence movement in the 1920s.
- He served as the president of Servants of the People Society (Lok Sevak Mandal), founded by Lala Lajpat Rai and held prominent positions in the Indian National Congress.

Post Independence Contribution

- Following independence in 1947, he joined the Indian government and became one of Prime Minister Nehru's key cabinet colleagues, first as Railways Minister (1951–56), and then in numerous other prominent positions, including the Home Minister.
- Shastri was at times critical of his own government, but when it came to taking responsibility he always led from the front. He served as the Railway Minister in Jawaharlal Nehru's Cabinet and was so conscientious that he resigned following a train accident at Ariyalur in Tamil Nadu in 1956. His gesture was hailed by all including Nehru, whom he considered as his "hero".
- After the sudden demise of India's first prime minister Jawaharlal Nehru, Shastri took oath of office. Despite being relatively new to the high office, he led the country successfully through the Indo-Pakistan War in 1965.
- When the country faced major food shortages in mid-1960s, Shastri led from the front and introduced new ideas including fixing foodgrain price for producers – known as the minimum support price (MSP) – and setting up a Prices Commission, the body known as the Commission for Agricultural Costs and Prices (CACPC) now that recommends the MSP.
- As prime minister, Shastri promoted the White Revolution – a national campaign to increase the production and supply of milk – by supporting the Amul milk co-operative of Anand, Gujarat and creating the National Dairy Development Board.
- Underlining the need to boost India's food production, Shastri also promoted the Green Revolution in India in 1965. This led to an increase in food grain production, especially in the states of Punjab, Haryana and Uttar Pradesh.
- He led the country during the Second India–Pakistan War. His slogan "**Jai Jawan, Jai Kisan**" ("**Hail to the soldier; Hail to the farmer**") became very popular during the war.
- The war formally ended with the Tashkent Declaration on 10 January 1966; Shastri died the next day.

SHYAMJI KRISHNA VARMA

Why in News: On his 167th Birth Anniversary of Shyamji Krishna Varma was remembered.

About Shyamji Krishna Varma

- Shyamji Krishna Varma was born on 4th October, 1857 in Mandvi town of Kachchh district of Gujarat.
- He was one of the foremost freedom fighters in the history of the freedom movement of India with high sense of patriotism and selfless service for the nation.



Shyamji Krishna Varma was not alone in his work. He was joined by many other great radical Indian Nationalists who were committed to free their motherland from the yoke of British rule.

Many great revolutionaries made the supreme sacrifice and laid down their lives to see their country free, both in India as well as abroad.

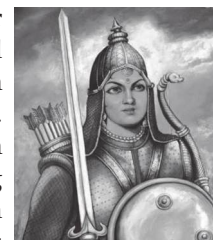
- In 1876, Shyamji Krishna Varma was deeply moved by the reformist teachings of the guru of the Vedas, Swami Dayananda Saraswati and from the very same year adopted his principles and teachings to nurture his own nationalistic dreams for the country.
 - The year 1877 saw Shyamji Krishna Varma give a public speech on Vedic philosophy and religion on the lines of his guru Swami Dayananda Saraswati.
 - He came to be regarded as such a wonderful orator that the Pandits of Kashi bestowed upon him the title of Pandit in 1877.
- His deep knowledge of the Sanskrit language caught the attention of Monier Williams, a professor of the subject in Oxford University. Williams offered Shyamji Krishna Varma the post of his assistant in Oxford and this marked Shyamji Krishna's first trip abroad.
 - He chose to take this fight to British soil and made London his base.
- In 1905 he founded the **India House** and **The Indian Sociologist**, which rapidly developed as an organised meeting point for radical nationalists among Indian students in Britain at the time and one of the most prominent centres for revolutionary Indian nationalism outside India.
 - Through *the Indian Home Rule Society*, he criticised the British rule in India.
- Krishna Varma moved to Paris in 1907, avoiding prosecution.
- The monthly Indian Sociologist became an outlet for nationalist ideas and through the Indian Home Rule Society, he criticised the British rule in India.
- Varma, who became the first President of Bombay Arya Samaj, was an admirer of Dayanand Saraswati, and he inspired Veer Savarkar who was a member of India House in London.
- He also served as the Divan of a number of states in India.
- In the face of criticism by the British, Varma, shifted his base from England to Paris and continued his movement. After the outbreak of the Second World War, however, he moved to Geneva in Switzerland and spent the rest of his life there. He died on March 30, 1930.

RANI DURGAVATI

Why in News: Rani Durgavati was remembered on her 500th Birth Anniversary.

About Rani Durgavati

- Rani Durgavati was born on October 5, 1524 in the family of Rajput Chandel Emperor Keerat Rai. She was born at the fort of Kalinjar (Banda, UP). Chandel Dynasty is famous in Indian History for the defense of king Vidyadhar, who repulsed the Muslim attacks of Mahmud Ghaznavi. His love for sculptures is shown in the world famed temples of Khajuraho and Kalanjar fort.



Warrior Rani Durgavati

- She distinguished herself as a warrior and fought with unvarying success against Baz Bahadur, the Sultan of Malwa. Stories of her exploits as a warrior and hunter are still current in the area.
 - After the death of Sher Shah, Sujat Khan captured the Malwa zone and was succeeded by his son Baz Bahadur in 1556 A.D. After ascending to the throne, he attacked Rani Durgavati but the attack was repulsed with heavy losses to his army. This defeat effectively silenced Baz Bahadur and the victory brought name and fame for Rani Durgavati.
 - In the year 1562 Akbar vanquished the Malwa ruler Baj Bahadur and annexed the Malwa with Mughal dominion. Consequently, the state boundary of Rani touched the Mughal kingdom.
 - Rani's contemporary Mughal Subedar was Abdul Mazid Khan, an ambitious man who vanquished Ramchandra, the ruler of Rewa. Prosperity of Rani Durgavati's state lured him and he invaded Rani's state after taking permission from the Mughal emperor. This plan of Mughal invasion was the result of expansionism and imperialism of Akbar.
 - To fight a defensive battle, she went to Narrai situated between a hilly range on one side and two rivers Gaur and Narmada on the other side. It was an unequal battle with trained soldiers and modern weapons in multitude on one side and a few untrained soldiers with old weapons on the other side. Her Faujdar Arjun Das was killed in the battle and Rani decided to lead the defence herself. As the enemy entered the valley, soldiers of Rani attacked them. Both sides lost some men but Rani was victorious in this battle. She chased the Mughal army and came out of the valley.
- ### Choosing death to dishonor
- At this stage Rani reviewed her strategy with her counselors. She wanted to attack the enemy in the night to enfeeble them but her lieutenants did not accept her suggestion. By next morning Asaf Khan had summoned big guns. Rani rode on her elephant Sarman and came for the battle. Her son Vir Narayan also took part in this battle. He forced Mughal army to move back three times but at last he got wounded and had to retire to a safe place.

- In the course of battle Rani also got injured near her ear with an arrow. Another arrow pierced her neck and she lost her consciousness. On regaining consciousness she perceived that defeat was imminent. Her Mahout advised her to leave the battlefield but she refused and took out her dagger and killed herself. Her martyrdom day (24th June 1564) is even today commemorated as “**Balidan Diwas**”.

Legacy of Rani Durgavati

- Rani Durgavati was a personality with varied facets. She was valiant, beautiful and brave and also a great leader with administrative skills. Her self-respect forced her to fight till death rather than surrender herself to her enemy.
- She, like her ancestral dynasty, built so many lakes in her state and did a lot for the welfare of her people. She respected the scholars and extended her patronage to them. She welcomed the Vitthalnath of Vallabh community and took Diksha from him. She was secular and appointed many eminent Muslims on important posts.
- The place where she sacrificed herself has always been a source of inspiration for freedom fighters.
- In 1983, the Government of Madhya Pradesh renamed the University of Jabalpur as Rani Durgavati Vishwavidyalaya in her memory.
- The Government of India paid its tribute to the valiant Rani by issuing a postal-stamp commemorating her martyrdom, on 24th June 1988.

RATAN NAVAL TATA

Why in News: Padam Vibhushan Ratan Tata, Chairman Emeritus of the Tata group passed away on 9 October 2024.

About Ratan Naval Tata

- Ratan Tata leaves an extraordinary business and philanthropic legacy and was instrumental in mentoring and developing modern business leadership in India. He deeply cared about making India better.



Ethical Lessons from the Life of Ratan Tata

- **Utilitarianism**
 - Displayed by Ratan Tata by launching Tata Nano car in 2008.
 - Ratan Tata said it was always meant for all our people. His vision was an embodiment of utilitarianism and inclusivity.
- **Perseverance**
 - Even before the Nano could hit Indian roads, it faced many speed breakers.

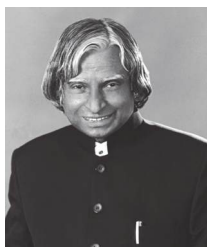
- The car was initially supposed to be manufactured in West Bengal’s Singur but faced multiple protests. The protest ultimately resulted in the plant being shifted to Gujarat’s Sanand.
- The perseverance of Ratan Tata finally led to the launch of Tata Nano.
- **Leadership**
 - Ratan Tata chose to work as an employee for his own company. He joined Tata in 1961 and worked on the shop floor of Tata Steel.
 - He wanted to get hand-on-experience at the grassroots level to understand the nuances and problem. A trait of top leaders.
- **Compassion**
 - Ratan Tata was famous for his love for animals, particularly dogs.
 - Tata had instructed Mumbai’s Taj Hotel staff to treat stray animals with care if they wander into the premises.
- **Spirit of Service**
 - During the 26/11 Mumbai Attack, Ratan Tata was the Chairman of the Tata Group at the time and ensured the hotel’s restoration despite the massive destruction of property.
 - Just two weeks after the attack, he formed the Taj Public Service Welfare Trust to not only provide relief to those affected by the terrorist acts but also to set up a system to help and rehabilitate those recovering from such tragic events in the future.
 - His compassion for the victims touched the hearts of many.
- **Kindness**
 - Ratan Tata had scripted an untold story of humanity and kindness during the darkest period for the Sikh community in 1984.
 - Many Sikhs who were truck drivers lost their only source of livelihoods as their vehicles were also targeted by the mobs.
 - Ratan Tata emerged as a ray of hope for the Sikh truck drivers, and in a heart-warming gesture, Tata Motors gave away new trucks to genocide survivors, without charging a penny, and helped them restart their businesses from scratch.
- **Philanthropy – Social Responsibility**
 - Ratan Tata’s philanthropy work ranges from education, healthcare, and rural development to disaster relief and social welfare.
 - The Tata Trust, under Ratan Tata, has expanded to reflect a deep sense of social responsibility.

APJ ABDUL KALAM

Why in News: World Students' Day 2024: Celebrating APJ Abdul Kalam's birth anniversary.

Key Details

- Every year on October 15, the World Students' Day is observed to honour the contributions of the former President Dr. APJ Abdul Kalam in the field of education.
- The day falls on the anniversary of the late teacher's birth. Known as the Missile Man of India, India's 11th president was a distinguished administrator and scientist who spent more than forty years with the Defense Research and Development Organization (DRDO).
- To commemorate Kalam's numerous achievements, particularly in the areas of academia and research, October 15 was chosen as World Students' Day in 2010.



Why is APJ Abdul Kalam's birthday celebrated as a World's Student Day ?

- To commemorate Dr. Kalam's birthday, the United Nations declared October 15 to be World Student's Day in 2010.
- Dr. Kalam received recognition from the UN for his work in education, youth development, and his sincere love for

students. In addition to being learners, he saw students as future leaders who would revolutionise society.

- Dr. Kalam continuously underlined the value of education in both his words and deeds, inspiring students to set objectives and put in a lot of effort to achieve them.

About A.P.J. Abdul Kalam


- Dr. APJ Abdul Kalam was born in Tamil Nadu, India, in a small town called Rameswaram.
- Despite coming from a lower middle class background, his parents taught him the importance of education and hard work.
- He spent the next four decades as a scientist and science administrator, mainly at the Defence Research and Development Organisation (DRDO) and Indian Space Research Organisation (ISRO) and was intimately involved in India's civilian space programme and military missile development efforts. He thus came to be known as the *Missile Man of India* for his work on the development of ballistic missile and launch vehicle technology.
- He served as the 11th president of India from 2002 to 2007. Kalam was elected as the 11th president of India in 2002 with the support of both the ruling Bharatiya Janata Party and the then-opposition Indian National Congress. Widely referred to as the "People's President".
- He was a recipient of several prestigious awards, including the **Bharat Ratna**, India's highest civilian honour.

Free Initiative by Chahal Academy

Editorial Analysis of Indian Express

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ARTICLES FROM YOJANA

OCTOBER - 2024

SWACHH BHARAT MISSION: IMPACT ON RURAL SANITATION & SMART APPROACH FOR SUSTAINED SANITATION SUCCESS

Introduction

The success of the Swachh Bharat Mission (SBM) lies not only in the infrastructure it creates but in the values it instills—making cleanliness a shared responsibility for every citizen. This cultural shift is crucial for ensuring that the gains made under SBM are sustained for generations to come. As India works towards the goal of **Viksit Bharat @2047**—a developed India by the centenary of its independence—the Swachh Bharat Mission will continue to play a critical role in improving public health, empowering women, protecting the environment, and driving economic growth.

Historical Perspective on Sanitation in India

Ancient Sanitation Practices

Sanitation in India has deep historical roots, dating back to the **Indus Valley Civilization**, where cities like **Harappa** and **Mohenjo-Daro** demonstrated advanced waste management systems. Despite these ancient achievements, modern India faces significant challenges in providing adequate sanitation to its rapidly growing population.

Modern Sanitation Challenges

- **Sanitation Coverage (2014):** By 2014, sanitation coverage in India was only **39%**, leaving over **550 million people**, particularly in rural areas, without access to basic toilet facilities. Open defecation was rampant, especially among vulnerable groups.
- **Impact on Women:** The lack of proper sanitation disproportionately affected women. They were forced to defecate in open fields, increasing their vulnerability to harassment and assault. Women were often referred to as “**slaves of darkness**,” deprived of basic rights such as privacy and safety.

India's Journey Toward Improved Sanitation

Key Sanitation Programs Before SBM

1. **Central Rural Sanitation Program (CRSP) 1986:** Focused primarily on constructing toilets.
2. **Total Sanitation Campaign (TSC) 1999:** Emphasized creating demand for sanitation through **Information, Education, and Communication (IEC)** activities.

3. **Nirmal Bharat Abhiyan (NBA) 2012:** Expanded efforts by promoting **community-led approaches** to sanitation.

The Launch of Swachh Bharat Mission (SBM)

By 2014, it became clear that India needed a more comprehensive and transformative approach to sanitation. The launch of the **Swachh Bharat Mission** on **October 2, 2014**, by Prime Minister Narendra Modi marked a **paradigm shift** in the country's sanitation efforts.

- **Target:** Make India **Open Defecation Free (ODF)** by 2019.
- **Focus Areas:**
 - Behavioral change
 - Community participation
 - Public financing
 - Political will

SBM successfully achieved its target on time, drastically transforming India's sanitation landscape.

Why Swachh Bharat Mission?

Rationale for SBM

SBM stemmed from the recognition that sanitation is a **multi-dimensional issue** affecting public health, gender equity, environmental sustainability, and economic development. The mission sought to address these interconnected challenges holistically.

1. **Health Impact:** Inadequate sanitation is a major cause of waterborne diseases such as **diarrhea, cholera, and typhoid**, resulting in high morbidity and mortality, especially among children under five. Before SBM, poor sanitation caused around **300,000 child deaths annually** (WHO). Recent studies show that SBM's interventions have significantly reduced **infant mortality**, averting **60,000-70,000 child deaths annually**.
2. **Impact on Women and Children:** Lack of access to toilets disproportionately affects women and girls. Women had to defecate in open fields, exposing them to safety risks. Additionally, **school absenteeism** among girls, especially during menstruation, was high due to inadequate sanitation. According to **UNICEF**, women felt significantly safer after gaining access to toilets in their homes.
3. **Environmental Impact:** Open defecation and improper waste management cause **environmental degradation**, contaminating water bodies, damaging ecosystems, and

increasing health risks. As per a **UNICEF report**, SBM helped reduce groundwater contamination by **12.7 times** in ODF villages.

4. **Economic Impact:** Poor sanitation costs India heavily, with a **World Bank** study estimating that India lost approximately **6.4% of its GDP** in 2006 due to poor sanitation, amounting to over **USD 38 billion annually**. These losses stemmed from increased health costs, reduced productivity, and lower educational attainment. **UNICEF** estimated that a household in an ODF village saved **Rs 50,000 annually** due to reduced health expenses.

SBM focused not only on **infrastructure development** (constructing toilets) but also on **behavioral change**, driving large-scale awareness campaigns essential for long-term involvement in sanitation practices.

SBM's Contribution to Sustainable Development Goals (SDGs)

Alignment with SDGs

The Swachh Bharat Mission is closely aligned with several **Sustainable Development Goals (SDGs)**, particularly **SDG 6: Clean Water and Sanitation**, which aims to ensure access to safe and sustainable water and sanitation for all by 2030.

- **India's Achievement:** India declared itself ODF in 2019, **11 years ahead of the global deadline**, showing its strong commitment to national and global sustainability goals.
- **SDG Target 6.2:** This target emphasizes ending open defecation and providing access to **equitable sanitation** for all. The construction of over **116 million household toilets** under SBM directly contributed to achieving this goal.

Contributions to Other SDGs

1. **SDG 3 (Good Health and Well-Being):** Improved sanitation has drastically reduced waterborne diseases and child mortality. SBM has helped avert **300,000 child deaths** annually from diarrhea (WHO).
2. **SDG 5 (Gender Equality):** SBM has enhanced the dignity and safety of women. **93% of women** in ODF villages reported feeling safer due to the availability of toilets at home (UNICEF), and **school absenteeism among girls** has significantly decreased.

India's early achievement of **SDG 6** highlights the power of strong political leadership, community mobilization, and innovative program design. SBM also serves as a model for other nations working toward the 2030 Agenda for Sustainable Development.

Key Focus Areas of SBM

SBM Phase II (2020-25)

After the initial focus on making India ODF, SBM Phase II (2020-25) has expanded its scope to ensure **sustainability** and tackle broader sanitation challenges.

1. **ODF Sustainability:** Ensuring that ODF villages maintain their status through:
 - **Regular monitoring** and
 - **Community engagement**.
 - **Swachhagrahis** (local cleanliness champions) play a key role in maintaining progress.
2. **Solid and Liquid Waste Management (SLWM):** The mission now emphasizes the management of both **solid and liquid waste**, promoting technologies such as **waste-to-energy** and encouraging villages to adopt practices like **composting** and **plastic waste management**.
3. **Visual Cleanliness:** SBM-G promotes the maintenance of clean and litter-free public spaces, proper drainage systems, and waste segregation at the household level, reinforcing the larger goal of **Sampoorna Swachhata** (complete cleanliness).
4. **Community Engagement and Capacity Building:** Local bodies such as **Self-Help Groups (SHGs)** and **Panchayati Raj Institutions (PRIs)** are being engaged to ensure the long-term success of SBM. Training programs are provided to build community skills in sanitation infrastructure management and behavior change.

A SMART Approach for Sustained Sanitation Success

To ensure the continued success of SBM, a **SMART strategy** has been proposed, focusing on five key pillars:

1. **Sustainability of Assets and Behavior:**
 - Ensuring proper maintenance and daily use of sanitation infrastructure.
 - **Climate-resilient sanitation systems** must be promoted to address climate change impacts in vulnerable regions.
2. **Making Women Central to Development:**
 - Women played a pivotal role in SBM's success, from constructing toilets to leading **behavioral change campaigns**.
 - Women-led **SHGs** should take on leadership roles in operating and maintaining sanitation assets.
3. **Accelerating Private Sector Involvement:**
 - **Public-private partnerships (PPPs)** are crucial for addressing challenges like **solid waste management**, **smart toilets**, and **waste-to-energy technologies**. Private-sector expertise can complement government efforts.
4. **Re-establishing Communication Protocols:**
 - **Information, Education, and Communication (IEC)** campaigns were central to SBM's success in Phase I and will be even more critical moving forward.
 - Behavior Change Communication (BCC) should be enhanced using **digital tools**, **community engagement**, and targeted messaging.

5. Training and Technological Interventions:

- **Training** for communities, sanitation workers, and government officials in advanced sanitation practices.
- Adoption of **digital monitoring tools, smart waste management systems, and climate-adaptive sanitation infrastructure.**

The Road Ahead: Achieving Sampurna Swachhata

As India moves towards the **ODF Plus** model by 2024-25, the Swachh Bharat Mission continues its journey toward **Sampurna Swachhata**. Phase II focuses on transitioning from ODF to ODF Plus, with an emphasis on **solid and liquid waste management, visual cleanliness, and sustained behavior change.**

The true success of SBM lies in the **cultural shift** it fosters, making cleanliness a shared responsibility for all citizens. By embracing **innovation, inclusivity, and sustainability**, India can ensure a cleaner, healthier, and more prosperous future for its citizens while contributing to the global development agenda.

GANGA REJUVENATION AND WATER CONSERVATION

Introduction

Since the 20th century, the **River Ganga** has suffered from severe pollution and environmental degradation, creating an urgent need for rejuvenation and water conservation. In response, the Government of India, in collaboration with **non-governmental organizations (NGOs)**, scientists, and activists, launched several initiatives, notably the **Namami Ganga Project**, aimed at cleaning and revitalizing the river.

Ganga: Epicenter of Cultural and Spiritual Bharat

Ganga's Cultural and Spiritual Significance

The **Ganga River** is much more than a body of water; it is a symbol of **India's cultural heritage** and a spiritual source. Ganga supports **40% of the Indian population** and stretches over **2,525 kilometers** from **Gangotri** in the Himalayas to the **Bay of Bengal**. The river is the site for the **Kumbh Mela**, held every 12 years in **Haridwar** and **Prayagraj**, attracting millions of devotees. It is believed that bathing in the Ganga washes away sins and helps in attaining **moksha** (salvation).

Ecological and Economic Importance

The Ganga has the **highest level of dissolved oxygen**, giving its water unique self-purifying properties. Its **river basin** contributes more than **40% of India's GDP** and supplies almost **one-third of the nation's surface water**, of which **90%** is used for irrigation. However, despite the fertility of the Ganga River Basin, more than **200 million people** living in this region are in **poverty**. The Ganga now faces severe threats from pollution, **biodiversity loss**, and environmental hazards, endangering its sustainability.

Why is Ganga Under Threat?



Industrialization and Pollution

Industrialization along the banks of the Ganga has severely degraded water quality. **Sewage discharge, industrial effluents, and solid waste dumping** are the primary sources of pollution. Poor **environmental governance, inadequate infrastructure, and the adoption of unsustainable Western development models** have further deteriorated the river's purity.

Ganga Action Plan (GAP)

Introduction and Objectives

The **Ganga Action Plan (GAP)** was launched in **1986** under **Prime Minister Rajiv Gandhi** to reduce pollution and improve the river's water quality. The plan focused on setting up **sewage treatment plants (STPs)**, improving sanitation, and controlling industrial effluents. However, **GAP** faced challenges such as **inadequate infrastructure, weak implementation, and limited public awareness**, which hindered its success.

Achievements and Limitations

GAP's goals included improving water quality, controlling pollution sources, and adopting **new technologies** for sewage treatment and waste management. **Phase I** cost **Rs. 452 crores**, and **Phase II** (1993–1996) expanded to other Indian rivers under the **National River Conservation Plan**. Despite completing **652 projects** and constructing **35 sewage treatment plants** across five states, GAP's failure was largely due to insufficient financial resources, poor collaboration, and governance issues. The plan lacked **long-term sustainability**, which resulted in temporary improvements rather than lasting changes.

Namami Gange (Clean Ganga Mission):

Do you know, Namami Gange has been internationally recognized by the United Nations as one of the Top 10 'World restoration Flagship' initiatives, earning global acclaim.

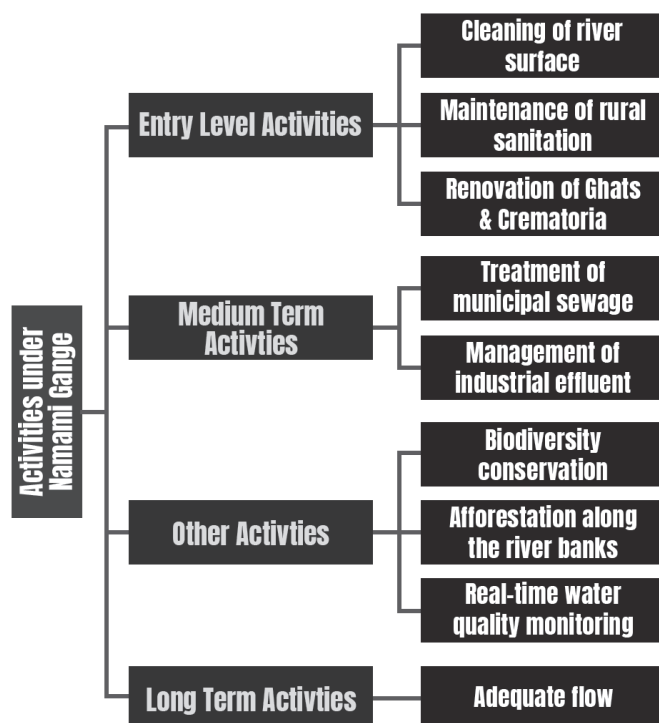
Launch of Namami Gange

In 2014, after coming to power, Prime Minister Narendra Modi prioritized the Ganga Rejuvenation effort, emphasizing its impact on 40% of the country's population and linking it to India's economic agenda. The Namami Gange Mission was launched to rejuvenate the river, with a fourfold budget increase, making it a central sector scheme. The government also established the National Council for River Ganga (Rejuvenation Protection and Management) in 2016 to coordinate the effort.

Key Initiatives

Namami Ganga focuses on:

- Sewage treatment infrastructure
- River surface cleaning
- Industrial effluent monitoring
- Biodiversity restoration
- Public awareness programs
- Riverfront development
- Ganga Gram (village improvement)



- (Note for the team: make infographic image for this)

Between 2015 and 2021, 815 new STPs were installed, and 116 out of 200 sewerage projects were successfully implemented with a budget of Rs. 31,810 crore. Local communities are engaged through platforms like Ganga Vichar Manch and

Ganga Praharis. Institutions such as the Ganga Knowledge Center (GKC) and cGANGA promote sustainable development.

Achievements of Namami Ganga

Riverfront Development and Pollution Control

Namami Ganga has achieved multiple milestones, including:

- Installing STPs in key cities like Varanasi, with seven operational plants.
- Promoting sustainable sanitation practices and improving solid waste management.
- Partnering with institutions like the Wildlife Institute of India and the Central Inland Fisheries Research Institute to restore aquatic species.
- Designating 1,674 Gram Panchayats for rural sanitation in Jharkhand.

Challenges and Criticisms

Operational and Environmental Challenges

The Comptroller and Auditor General (CAG) in a 2017 audit report highlighted shortcomings in financial management, planning, and execution of the Namami Ganga project. India's monsoon rains present another challenge, overwhelming sewage treatment plants with both rainwater and sewage during the rainy season, while the river experiences low water levels during the dry months, leading to higher pollution concentration.

Industrial Pollution and Groundwater Depletion

Industries that were closed for polluting the Ganga tributaries are often allowed to resume operations illegally, undermining efforts to maintain water quality. Additionally, studies reveal that groundwater flow to the Ganga has declined by 50% since the 1970s due to over-extraction, and it is projected to decrease by 75% over the next three decades if corrective measures are not taken.

Common Cause: The Future of Ganga Rejuvenation

Public Involvement and Financial Needs

Restoring the Ganga requires a multifaceted approach involving large financial investments. The Clean Ganga Fund was created to encourage public donations and support for the cause. The principle of reduce, reuse, and recycle is essential in curbing waste and pollution. Improved collaboration between ministries and central and state governments is needed to implement long-term, sustainable solutions.

Community Engagement

The public can contribute by reducing water consumption and waste generation, and adopting sustainable practices like recycling and efficient water use. Effective community involvement is crucial for the success of Ganga rejuvenation efforts.

Conclusion

The rejuvenation of the **River Ganga** is a complex task, given its socio-economic and cultural significance. While significant strides have been made through initiatives like the **Namami Ganga Mission**, challenges persist in terms of **pollution**

management, industrial regulation, and sustainability. Moving forward, greater **community engagement**, improved governance, and sustainable water management practices are essential to ensure the long-term health of the Ganga and its ecosystem.

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ARTICLES FROM KURUKSHETRA

OCTOBER 2024

THE ROLE OF TRADITIONAL AND INDIGENOUS KNOWLEDGE IN COMBATING MALNUTRITION IN RURAL INDIA

Introduction

- **Malnutrition** remains a critical public health issue in rural India, where many face **food insecurity, limited healthcare access, and inadequate nutrition.**
- Despite modernization, **traditional and indigenous knowledge** can be key in tackling malnutrition. This knowledge, passed through generations, is deeply tied to **local culture, environment, and food practices** that have supported rural communities for centuries.

Nutrient-Rich Diets Rooted in Tradition

Balanced Nutritional Intake

- Traditional diets in rural India include locally sourced foods like **millets, pulses, vegetables, fruits, and herbs**, rich in essential nutrients.
- These diets ensure a **balanced intake of vitamins, minerals, proteins, and dietary fiber**, addressing both **macronutrient and micronutrient deficiencies.**
Example: In Karnataka and Maharashtra, the consumption of **Ragi (finger millet)** and **Jowar (sorghum)** is common. These grains are rich in **calcium, iron, and dietary fiber**, vital for fighting malnutrition in children and women.

Health Benefits of Indigenous Foods

- Indigenous foods, such as **leafy greens and wild edibles**, are often rich in **micronutrients** like iron, vitamin A, and calcium.
- **Example:** In Odisha, tribal communities consume white leafy greens like **amaranth** and **drumstick leaves**, which are high in iron and help reduce **anemia**, a widespread problem in rural areas.

Food Security through Sustainable Agricultural Practices

Resilient Farming Techniques

- Traditional practices such as **crop rotation, intercropping, and organic farming** help ensure **soil fertility, biodiversity, and a stable supply of nutritious food.**
Example: In the tribal regions of **Madhya Pradesh and Chhattisgarh**, **mixed cropping and agroforestry systems** provide diverse crops and protect against crop failure, ensuring food availability throughout the year.

Promotion of Indigenous Crops

- Indigenous crops like **millets and pulses** are **drought-resistant** and require fewer inputs, making them ideal for cultivation in **arid regions.**
- **Example:** In Rajasthan, **Bajra (pearl millet)** is a staple, thriving in dry climates. It is rich in **iron and dietary fiber** and plays a crucial role in local diets, especially during droughts.

Cultural Relevance and Acceptance

Integration with Local Traditions

- Traditional food practices are deeply linked to **local customs, festivals, and religious rituals**, ensuring their wide acceptance and easy integration into daily life, improving nutrition.
- **Example:** In Kerala, the use of **turmeric and ginger** in cooking is part of cultural heritage, known for their **anti-inflammatory and immune-boosting properties.**

Preservation of Traditional Knowledge

- Traditional diets help preserve indigenous knowledge, including **food preparation and preservation methods** that maximize nutritional value.
- **Example:** In the **Northeastern states**, **fermenting bamboo shoots and fish** improves their nutritional profile and promotes **gut health.**

Adaptability to Local Environments

Climate-Resilient Food Systems

- Indigenous knowledge includes strategies like **drought-resistant crops, water conservation, and organic fertilizers** to maintain food production despite climate change.
- **Example:** In Gujarat, traditional **stepwells and rainwater harvesting** support agriculture in arid conditions.

Utilization of Wild Foods

- Rural communities often rely on **wild foods** like fruits, nuts, and tubers, rich in nutrients and crucial during food shortages.
- **Example:** In Jharkhand, tribal communities gather **wild mushrooms, berries, and tubers**, providing essential nutrients during lean seasons.

Sustainable Food Systems and Environmental Stewardship

Conservation of Biodiversity

- Traditional farming promotes biodiversity, crucial for

food security. By cultivating a variety of crops and using **seed-saving methods**, rural communities conserve genetic diversity.

- **Example:** In **Tamil Nadu**, saving and exchanging **indigenous rice strains** helps maintain agricultural biodiversity, with varieties more nutritious and better adapted to local conditions.

Low Environmental Impact

- Indigenous agricultural practices rely on **organic inputs**, avoiding chemical fertilizers and pesticides, and prioritize **soil health**, promoting sustainable food production.
- **Example:** In the **Sikkim Himalayas**, **shifting cultivation (Jhum)** is managed to allow land regeneration, maintaining soil fertility.

Health Benefits and Disease Prevention

Medicinal Properties of Indigenous Foods

- Many traditional foods have **medicinal properties**, helping manage chronic diseases.
- **Example:** In **Andhra Pradesh**, **tamarind** is used in cooking for its **antioxidants**, aiding digestion and managing blood sugar levels.

Traditional Dietary Practices and Gut Health

- Fermented foods in traditional diets support **gut health**, crucial for **nutrient absorption** and **immunity**.
- **Example:** In **Nagaland**, fermented soybean (**axone**) is rich in protein and probiotics, enhancing gut health.

Environmental and Gender Roles in Nutrition

Women as Custodians of Traditional Knowledge

- In many rural communities, women are the primary keepers of traditional knowledge related to **food production, preparation, and preservation**.
- **Example:** In **Rajasthan**, women manage traditional kitchens, and **kitchen garden initiatives** have improved family nutrition.

Role in Maternal and Child Health

- Traditional knowledge is vital in **maternal and child health**, addressing nutritional needs during **pregnancy, lactation, and early childhood**.
- **Example:** In **Uttar Pradesh**, postpartum diets include **sesame seeds, jaggery, and ghee**, believed to aid recovery and lactation.

Community-Led Initiatives and Knowledge Sharing

Revival of Traditional Foods through Community Efforts

- Community-led initiatives are reviving **traditional food practices**, especially in areas where they were neglected.
- **Example:** In **Odisha**, efforts to revive **millets** like **kodo** and **kutki** have improved child nutrition.

Knowledge Sharing and Capacity Building

- Traditional knowledge is shared through **community**

networks, festivals, and social gatherings, ensuring its transmission to younger generations.

- **Example:** Festivals like **Bihu** in Assam and **Chapchar Kut** in Mizoram serve as platforms for sharing agricultural and food knowledge.

Integration with Modern Nutritional Interventions

Complementary Role in Government Programs

- Traditional knowledge complements modern nutritional programs by offering **culturally appropriate** and **locally sourced solutions** to malnutrition.
- **Example:** In **Karnataka**, traditional foods like millet are integrated into **midday meal programs**, improving children's nutrition.

Incorporation into Public Health Campaigns

- Public health campaigns that promote **traditional diets** can address malnutrition while preserving cultural heritage.
- **Example:** In **Maharashtra**, campaigns promoting local foods like **bhakri** (millet flatbread) and **varan** (lentil stew) have increased awareness of their nutritional benefits.

Government Measures

- Various **government schemes** promote the cultivation and consumption of traditional foods, integrating indigenous knowledge to fight malnutrition.
- Strengthening these programs with education, market access, and knowledge preservation can further enhance their effectiveness.

Challenges in Incorporating Traditional Knowledge

Erosion of Traditional Knowledge

- **Modernization, urban migration, and Western diets** are causing the loss of traditional knowledge, especially among younger generations.
- **Solution:** Revive traditional knowledge through **education and community programs**.

Lack of Market Access for Indigenous Crops

- Farmers growing indigenous crops face **market access challenges**, making these crops less profitable.
- **Solution:** Improve market access by incorporating **indigenous crops into public distribution systems (PDS)**.

Stigma Around Traditional Foods

- **Traditional foods** are often viewed as "poor man's food," especially among younger generations.
- **Solution:** Use **public campaigns** and initiatives like **Poshan Abhiyan** to promote their health benefits.

Lack of Integration with Modern Nutrition Programs

- Many government programs focus on **fortified foods**, ignoring **traditional, locally available options**.
- **Solution:** Programs like **PM POSHAN**, which incorporates millets, should be expanded nationwide.

Climate Change and Environmental Degradation

- **Climate change** affects the cultivation of traditional crops.
- **Solution:** Promote **climate-resilient traditional crops** through government incentives and **agricultural research**.

Conclusion

- **Traditional and indigenous knowledge** offers sustainable, culturally appropriate solutions to malnutrition in rural India.
- Overcoming challenges such as modernization, market access, and stigma requires targeted efforts in **education, community initiatives, and government support**.
- Integrating traditional practices with modern interventions can enhance nutrition and food security for future generations.

THE DIGITAL SHIFT IN HEALTHCARE: NAVIGATING TECHNOLOGICAL TRANSFORMATION

Introduction to Industry 4.0 and Healthcare

- The healthcare industry is undergoing a **profound transformation** due to **Industry 4.0**.
- Technologies such as **Artificial Intelligence (AI), Big Data, and advanced algorithms** are reshaping healthcare systems, driving innovation in service delivery and management.
- **Healthcare's importance:**
 - Integral to national development alongside issues like **poverty and climate change**.
 - Consumes significant national resources.
 - Healthcare systems enhance **population health** through prevention, diagnosis, and treatment of physical and mental illnesses.

The Role of Technology in Healthcare

- **Technology-driven transformation** is pushing healthcare organizations to explore **new value propositions** by lowering costs and creating **new service models**.
- **COVID-19 pandemic:**
 - Highlighted the need for rapid **technological adaptation** to maintain service delivery.
 - Technology became a key enabler for **remote care**, minimizing disruption.

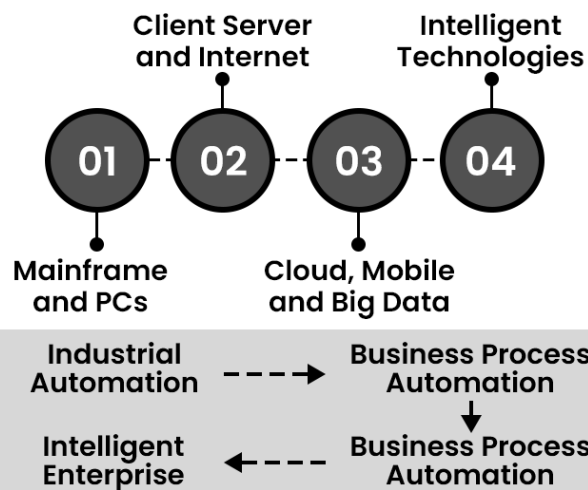
Barriers to Digital Transformation in Healthcare

- Despite the promise of technology, healthcare faces **several barriers:**
 - Highly **regulated** environment.
 - **Prudence** in a field where patient lives are at risk.

- A need for a more **structured approach** to digital transformation, focusing on:
 - ◆ **Supporting vs. Creating new value propositions.**
 - ◆ Differentiating between **consumer and patient** roles.
 - ◆ Building **organizational capabilities** to leverage digital tools.

Vision for Intelligent Healthcare Enterprises

EVOLUTION



Historical Evolution of IT in Healthcare

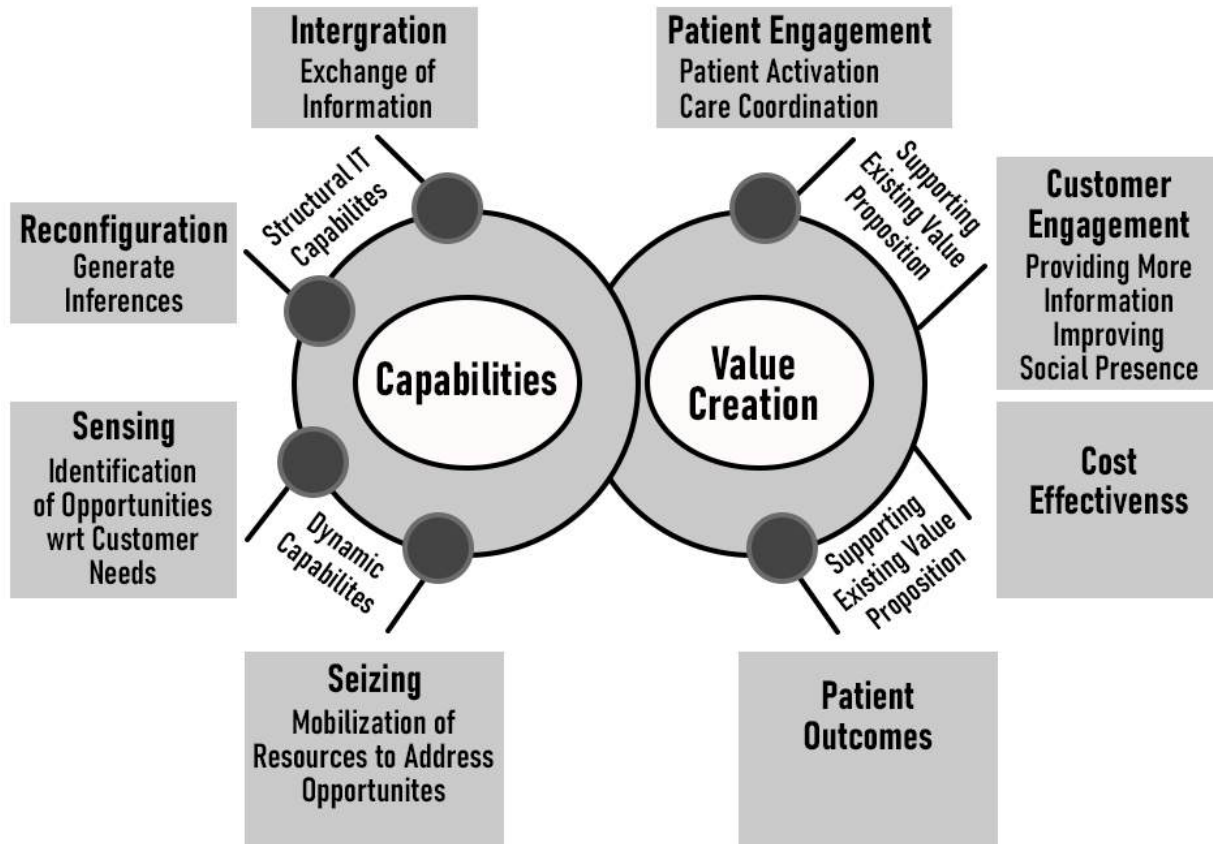
- Over the past 50 years, the IT industry has transformed healthcare:
 - **1960s and 1970s:** Mainframes and PCs introduced **industrial automation**.
 - **1980s and 1990s:** Internet and client-server architecture enabled **business process automation**.
 - **2000s:** Cloud computing, mobile data, and social networks fueled **digital transformation**.

Modern Intelligent Technologies

- Current technologies—**AI, ML, advanced analytics, and IoT**—are paving the way for **intelligent enterprises**.
- Despite slow progress, the **volume of patient-level data** has increased exponentially, with new **diagnostic information** from connected devices, smartphones, and wearables.

Challenges with Current Systems

- Payment systems are primarily **volume-based**, creating inefficiencies and hindering value-based care.
- Lack of **risk-sharing mechanisms** leads to poor utilization of resources and negative patient outcomes.



Engagement

- **Definition:** Engagement is the motivation and involvement of individuals in the pursuit of their goals, playing a vital role in **patient-centered care**.
- **For patients:**
 - Engagement ensures care is **respectful of individual preferences**.
 - It integrates emotional, cognitive, and behavioral aspects to improve the healthcare experience.

Capabilities

- **Resource-Based View (RBV):** Capabilities are organizational routines that combine resources to gain a **competitive advantage**.
- **Key Capabilities:**
 1. **Structured IT Capabilities:**
 - **IT Generation and Reconfiguration:** Adapt technology infrastructure to external changes.
 - **IT Integration:** Coordinate data exchange within and outside the organization.
 2. **Dynamic Capabilities:**
 - Respond to environmental changes by aligning resources with consumer demands.
 - Enable **structural changes** in business processes.

Value Creation in Healthcare through Technology

Supporting Existing Value Propositions

- Focused on **cost reduction** and improving **patient outcomes**.
- Challenge: Measuring **system-level costs** when cost reduction is compartmentalized.

Creating New Value Propositions

- **Patient-Centric View:** Engages the end-user by improving **care coordination** and patient activation through digital tools like **EMR-integrated systems** and **messaging**.
- **Consumer-Centric View:** Reflects the demand for **quick and efficient services** such as process status updates, virtual care, and appointment scheduling.

The Role of Data and Intelligent Technologies

Rich Health Data Foundation

- The integration of **IoT, advanced analytics, ML, and AI** will drive improvements in:
 - **Diagnostics.**
 - **Prevention.**
 - **Patient therapy.**

Real-Time Interaction

- Technologies enable **live monitoring** of patients, allowing for immediate intervention rather than periodic check-ins.

- **Operational intelligence** ensures healthcare services are used efficiently, thereby optimizing costs.

Regulatory and Security Challenges

- The healthcare industry is **highly regulated**, and concerns over **data privacy and security** slow the adoption of technology.
- Payment models like **procedure-based payments** also hinder the shift towards value-based care.

Vision for the Future: Value-Based Healthcare

- **Intelligent healthcare providers** aim to:
 - Improve **quality of life**.
 - Deliver **value-based healthcare**.
 - Ensure a **seamless patient experience**.

Government Initiatives: Towards Digital Healthcare

GOVERNMENT INITIATIVES

Towards Digital Healthcare

ABHA (AYUSHMAN BHARAT HEALTH ACCOUNT)	NATIONAL DIGITAL HEALTH MISSION (NDHM)	ESANJEEVANI	PRADHAN MANTRI DIGITAL HEALTH MISSION (PM-DHM) PORTAL	DIGITAL PAYMENT PLATFORMS FOR HEALTHCARE
<p>A digital health ID system designed to provide citizens with a unique health ID, enabling them to access and manage their health records and avail services.</p> <p>Facilitates easy access to healthcare services, streamlines the process of health record management, and integrates with the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY) for better access to Insurance benefits.</p>	<p>A comprehensive initiative aimed at developing an integrated digital health ecosystem in India.</p> <p>Includes the creation of digital health IDs, electronic health records (EHRs), a health information exchange, and telemedicine services to enhance the accessibility and efficiency of healthcare delivery.</p>	<p>A digital platform for managing and analyzing health data.</p> <p>Supports data collection and reporting for various health programs, helping in decision-making and policy formulation.</p>	<p>An online platform for managing and accessing health services under the National Digital Health Mission.</p> <p>Provides access to digital health records, health IDs, and information about health services and benefits.</p>	<p>Platforms such as the National Payments Corporation of India (NPCI) support digital payments for healthcare services.</p> <p>Facilitate cashless transactions, streamline billing processes, and integrate with health insurance and reimbursement systems.</p>

Conclusion and Way Forward

Building Intelligent Enterprises

- Intelligent healthcare providers use **advanced IT systems** and **data** to:
 - Respond to individual needs.
 - Engage talents.
 - Disrupt and innovate business models.

Digital Transformation for Competitive Advantage

- **Agility and flexibility** are key to improving patient outcomes, reducing costs, and staying competitive.

Digital Maturity and Adoption

- Although many healthcare organizations have initiated **digital transformation projects**, few have achieved **digital maturity**.
- Future success depends on integrating intelligent technologies into **core business processes** for efficient, patient-centered care.

Moving from Reactive to Proactive Healthcare

- **Reactive Health:** Traditional model where diagnosis and treatment are responses to symptoms.
- **Proactive Health:**
 - Based on **early detection** and **continuous monitoring**.
 - Leverages passive data capture, predictive models, and multiple connected data sources for a **personalized patient experience**.

- Successful digital transformation relies on:
 - **Integration-ready applications**.
 - **Extensible platforms** that offer intuitive user experiences.

Adapting to Future Technologies

- As technologies like **ML, AI, IoT, and big data** become mainstream, healthcare organizations must continue to experiment and adapt.
- Embedding **intelligent technologies** into applications will be crucial for **ongoing innovation** and long-term success.

ARTICLES FROM DOWN TO EARTH

OCTOBER 2024

ATMOSPHERIC RIVERS ARE SHIFTING POLEWARD, RESHAPING GLOBAL WEATHER PATTERNS.

Atmospheric Rivers

- **Definition:** Atmospheric rivers are long, narrow bands of water vapour in the sky that bring heavy rain and storms to many regions across the globe, particularly the U.S. West Coast.
- **Occurrence:** They form in many parts of the world and provide over half of the mean annual runoff in these regions, including the US Southeast coasts and West Coast, Southeast Asia, New Zealand, northern Spain, Portugal, the United Kingdom and south-central Chile.

Atmospheric Rivers on the Move: Poleward Shift

- Atmospheric rivers have been shifting poleward over the past four decades.
- In both hemispheres, activity has increased along 50 degrees north and 50 degrees south, while it has decreased along 30 degrees north and 30 degrees south since 1979.

A Global Chain Reaction: Reasons for the Shift

- One main reason for this shift is changes in sea surface temperatures in the eastern tropical Pacific.
 - Since 2000, waters in the eastern tropical Pacific have had a cooling tendency, which affects atmospheric circulation worldwide.
 - This cooling, often associated with La Nina conditions, pushes atmospheric rivers toward the poles.
- The poleward movement of atmospheric rivers can be explained as a chain of interconnected processes.
 - During La Nina conditions, when sea surface temperatures cool in the eastern tropical Pacific, the Walker circulation (giant loops of air that affect precipitation as they rise and fall over different parts of the tropics) strengthens over the western Pacific.
 - This stronger circulation causes the tropical rainfall belt to expand.
 - The expanded tropical rainfall, combined with changes in atmospheric eddy patterns, results in high-pressure anomalies and wind patterns that steer atmospheric rivers farther poleward.
- Conversely, during El Nino conditions, with warmer sea surface temperatures, the mechanism operates in the

opposite direction, shifting atmospheric rivers so they don't travel as far from the equator.

Why does this Poleward Shift Matter: Global Impacts of the Shift

- A shift in atmospheric rivers can have big effects on local climates.
- **Droughts and Water Shortages:** In the subtropics, where atmospheric rivers are becoming less common, the result could be longer droughts and less water.
- **Flooding and Extreme Weather:** In higher latitudes, atmospheric rivers moving poleward could lead to more extreme rainfall, flooding and landslides.
- In the Arctic, more atmospheric rivers could **speed up sea ice melting, adding to global warming** and affecting animals that rely on the ice.

What it means for the future?

- Human-Induced Climate Change
 - So far, the shifts mainly reflect changes due to natural processes, but human-induced global warming also plays a role.
 - Global warming is expected to increase the overall frequency and intensity of atmospheric rivers because a warmer atmosphere can hold more moisture.
- **Uncertainty in Predictions:** Predicting future changes remains uncertain due largely to the difficulty in predicting the natural swings between El Nino and La Nina, which play an important role in atmospheric river shifts.

Conclusion: As atmospheric rivers continue to shift and global temperatures rise, communities need to adapt to these changes. Understanding the behavior of atmospheric rivers and their impact on local climates is crucial for managing water resources, preventing floods, and preparing for droughts in a warming world.

GLOBAL PARLIAMENTARIANS RALLY BEHIND WHO PANDEMIC AGREEMENT IN BERLIN

Introduction: Parliamentarians from around the world gathered in Berlin at the UNITE Global Summit to support the World Health Organization's (WHO) Pandemic Agreement. This move is a major step toward improving global preparedness and equitable access to healthcare during pandemics.

UNITE Global Summit

- **Purpose:** The UNITE Global Summit brings together lawmakers, health experts, and civil society leaders to tackle global health challenges.
- **Key Event:** Signing of the Global Parliamentary Statement in Support of the WHO Pandemic Agreement was the highlight of the summit.

WHO Pandemic Agreement

- The WHO Pandemic Agreement, currently under negotiation by member states, is designed to address the gaps exposed by the COVID-19 pandemic and other outbreaks such as mpox.
- The agreement focuses on enhancing global cooperation in pandemic prevention, preparedness and response, with an emphasis on equitable access to life-saving health tools, including vaccines, treatments and medical supplies.

Commitment to Global Solidarity

- The statement signed in Berlin reflects parliamentarians' commitment to ensuring equitable access to pandemic resources for all nations, particularly those with fewer resources.
- The Global Parliamentary Statement emphasised four core commitments:
 - **Equity at the core:** Ensuring equitable access to pandemic-related health tools based on public health need, particularly for lower-resourced nations

- **Global solidarity:** Strengthening international cooperation to build resilient health systems capable of preventing and responding to pandemics
- **Legislative action:** Advocating for the ratification and implementation of the Pandemic Agreement within national legislatures
- **Combating misinformation:** Promoting evidence-based health information to counter harmful misinformation.

Way towards Ratification and Implementation

- Role and Significance of Parliamentarians
 - Parliamentarians are the voice of the people and have a crucial responsibility in safeguarding public health.
 - Parliamentarians are uniquely positioned to push for the ratification and implementation of the WHO Pandemic Agreement within their national legislatures, playing a critical role in shaping global health policy.
- The agreement underscored the need for sustainable financing, research and development to support swift and effective responses to health emergencies.
- The statement signed in Berlin is expected to act as a catalyst for global parliamentary action, fostering collaboration and solidarity among nations.
 - It demonstrates a shared understanding that pandemics know no borders and that international cooperation is crucial to protect public health.

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ARTICLES FROM EPW

OCTOBER 2024

HUMAN-COMPLEMENTARY TECHNOLOGY

Context: The International Labour Organization's (ILO) World Employment and Social Outlook: September 2024 Update unambiguously links the decline in labour income share over the last two decades to technological innovations, including artificial intelligence (AI) and automation.

Technological innovations' impact on labour and equality

- **Decrease in Labour Income Share:** The labour income share, which measures the proportion of total income in a country earned by the employed, has declined by 1.6 percentage points between 2004 and 2024 indicating rising global inequality.
- **Fallacy of trickle down:** Significant improvements in economic growth and labour productivity have however, failed to translate into better distributional consequences of growth, even in the long run, cements the fallacy of trickle down economics.



Jobs for automated bots vs. humans

Things RPA is Good for	Things better left to your human workforce
Employee onboarding and offboarding	Designing a new product
Accounts Payable, accounts receivable and cash management	Producing an advertising campaign
Bank statement reconciliation	Decision making and problem solving
Pricing calculations	Financial forecasting
Inventory record management	Interacting with humans via customer service or sales

- **Technology as Labour saving tool:** Much of technology, instead of being productive and complementary to workers, is now being shaped for labour-saving, for example self-checkout kiosks in shops, which are now the norm in much of the West.
- **Increase in Low paying jobs:** With the looming threat of such non-productive automation taking up the space for decent jobs, we may be faced with a future where displaced workers are consigned to low-paying, precarious work en masse. The effects of such a negative transition are already visible in the declining share of labour income.

- **The rise of algorithmic management of work:** In far too many sectors, especially in the aftermath of the pandemic, workers are being tracked, monitored and supervised by computer algorithms, often eliminating the human hand in management.

Suggestions to make Technology more labour friendly

- **More Human friendly:** Technology needs to be human-complementary in order for its benefits to be distributed more equitably
- **Role of Policy:**
 - The ILO study is rightful in noting that the future path of technological innovations will be determined by the ability of policy to steer it in a manner that does not exacerbate inequalities and ensures wide distribution of its benefits.
 - With digitalisation and the gig economy creating new modes of labour and management, policy efforts need to be directed towards building safe and transparent working conditions.
- **Need for International Cooperation:** Given the dynamic and rather rapid nature of technological progress of late and the nascent stages of policy and regulation, it is essential that countries leverage international cooperation to share expertise and best practices in technology governance.
- **Investment in Research:** Investments in research and development of human-complementary technology need to be a global priority, warranting the addressal of structural problems with the very functioning of the technology itself.
- **Importance of worker's voice:** Importantly, workers' voices have to be centred in both the development processes of new technology and in policy efforts aimed at mitigating its disruptive effects.

Way Forward

- Even when augmented using AI, the reality is that automation doesn't replace human jobs. It follows pre-defined rules and instructions to perform tasks, but it does not have the ability to think creatively or make judgement calls like humans do.
- So, automated tools are best suited to performing repetitive and routine tasks, rather than tasks that require problem-solving or decision-making skills.

STRATEGIC AUTONOMY IN NATIONAL SECURITY

Context: In light of the Israel - Palestine and Russia - Ukraine war the article advocates that India must make cost-effective procurement choices.

Key Details

- **Critical Equipment Manufacturing capacity** Research agencies now acknowledge that Russia's production of critical equipment, such as artillery shells and others is three times that of US and NATO combined. This has exposed the weakness of the Western military-industrial complex dominated.
- **Building old school defence lines:** Although trench warfare is commonly associated with the major wars of the 20th century, trenches and obstacles still have a crucial role to play in modern warfare by determining where an enemy can launch an attack. In late 2022–early 2023, Russia focused on building these defensive lines, and the most remarkable thing about these barriers was that they were built quickly (6–11 days) depending upon the complexity of these barriers.
- **Need for layered defence systems:** Notwithstanding, it also needs to be noted that no air defence systems (ADS) or electronic warfare system can counter 100% of all threats in a high-threat environment, especially from drones that have minimal radar signatures, and therefore layered defence comprising multiple systems with experienced operators are critical, particularly for strategic defence assets.

Lessons from the Conflicts

- **Rising Asymmetric threats:** The Red Sea crisis where the Houthis have forced the rerouting of merchant ships and the Israeli–Iran exchange involving drones and missiles have accentuated the importance of asymmetric threats and raised vital questions on the potency of traditional navies and the cost-effectiveness of existing deterrence measures.
- **Non-Kinetic Warfare:** Additionally, warfare and violent conflicts are occurring at other levels besides kinetic energy. Attackers may use disinformation, cyberattacks, organised crime and other soft tools unnoticed and without possible attribution to undermine their adversaries' infrastructure (power grids, water-supply nodes, airports, ATMs, etc), institutions and political processes and their will to fight. This is known as the grey or non-attributable zone.
- **Presence of Non-state actors:** Another trend is the presence of nonstate actors in warfare. For example, in 2022, the group "Anonymous" claimed to have successfully attacked the websites of several Russian government agencies, including Gazprom and Russia.
- **Cyber Warfare:** Conflicts will increasingly revolve around information control, including cyber information

operations to counter an adversary's narratives. Ransomware and malware attacks are increasing at 400% per year and have spread globally. Cyber espionage and cyber sabotage will need to be enhanced. Critical infrastructure and high-tech companies are prime targets for state and non-state actors.

Recommendations

The most important strategic tasks for India with respect to national security are:

- Make cost-effective military procurement choices focused on indigenous development dictated by the realities of modern warfare.
- Promote a robust military-industrial complex in the public and private sectors.
- Nurture the conversion of DRDO into a DARPA-like organisation as the process is likely to encounter systemic and bureaucratic blockages.
- Diversify sources of supply for components of military production.
- Ensure that the MoD is responsible for maintaining minimum stockpiles for ammunition that are already mandated to avoid urgent purchases.
- Establish an effective parliamentary oversight mechanism with a separate subcommittee for national security. A multidisciplinary committee with a core, comprising experts in sea, air, ground, electronic warfare, cyber, space and nuclear systems will need to support this oversight mechanism. This committee would need to be appointed by Parliament to avoid conflict of interest.
- Establish a defence capability assurance and oversight agency under Parliament through a bill to regulate defence procurement.
- Establish the National Defence University.
- Set up a national wargaming centre under the National Defence University that reports to the National Security Council.
- The functioning of the National Security Council needs to be formalised by an act of Parliament.
- A dedicated government agency needs to be established under the NSA to audit infrastructure's vulnerability to cyberwarfare.
- Audit the air defence preparedness of all strategic defence assets.
- Audit the productivity norms of repair facilities and strive to upgrade norms in accordance with international standards.

Conclusion

- Envisioning the future of warfare is a challenging task due to uncertainties. Making the right national security decisions while considering geopolitical, societal, technological, economic, environmental, and military trends requires agile thinking.

- Cost-effective solutions such as defensive barriers, decoys, AI-assisted drones, killer robots, electronic warfare and cyberwarfare have critical relevance in the Indian context, not only on land but also in the air at sea.
- The effective use of autonomous systems (air and sea) in Ukraine, Israel–Gaza–Lebanon– Iran and the Red Sea raises valid questions about the cost-effectiveness of existing air defence systems and platforms such as aircraft carriers.
- The Indian national security establishment needs to anticipate and adapt to new, emerging security risks, including threats to civilian infrastructure from cyberattacks, while maintaining its focus on deterrence and cooperation. A parliamentary oversight mechanism and a National Defence University, including a national wargaming centre, must be integral to the process.

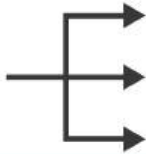
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AWARDS AND PRIZES

	Award	Winner	Details
1.	Dadasaheb Phalke Award	Mithun Chakraborty	<ul style="list-style-type: none"> Dadasaheb Phalke Award is India's highest award in the field of cinema. It is presented annually at the National Film Awards ceremony by the Directorate of Film Festivals, an organisation set up by the Ministry of Information and Broadcasting.
2.	MIDORI Prize	Vera Voronova And Ysabel Agustina Calderón Carlos	<ul style="list-style-type: none"> MIDORI Prize for Biodiversity was established by AEON Environmental Foundation during the 2010 International Year of Biodiversity. The Prize has been awarded to biodiversity champions in several fields, including policymaking, science and civil society. MIDORI Prize is a biennial international prize to honour individuals who have made outstanding contributions to the conservation and sustainable use of biodiversity at global, regional or local levels.
3.	National Anubhav Awards	-	<ul style="list-style-type: none"> National Anubhav Awards Scheme recognizes the contributions of retiring and retired government employees by encouraging them to share their valuable experiences and insights. The initiative is spearheaded by the Department of Pension & Pensioners' Welfare (DoPPW), under the Ministry of Personnel, Public Grievances, and Pensions, Government of India.
4.	National Film Awards	-	<ul style="list-style-type: none"> Ministry of Information and Broadcasting confers the prestigious National Film Awards along with cinema's highest honor, the Dadasaheb Phalke Award each year. The 70th National Film Awards were conferred on 8 October 2024 by Hon. President Draupadi Murmu.
5.	International Astronautical Federation (IAF) World Space Award	Dr. S. Somanath	<ul style="list-style-type: none"> Dr. S. Somanath, Chairman of the Indian Space Research Organisation (ISRO), has been honored with the prestigious International Astronautical Federation (IAF) World Space Award. This accolade was awarded in recognition of the remarkable success of Chandrayaan-3, India's lunar mission that made history with its soft landing on the Moon's South Pole.
6.	National Water Awards 2023	-	<ul style="list-style-type: none"> Department of Water Resources, River Development, and Ganga Rejuvenation (DoWR, RD & GR), under the Ministry of Jal Shakti, announced the winners of the 5th National Water Awards (NWA), 2023. Best State - Odisha Best Urban Local Body - Surat

7.	Femina Miss India 2024	Nikita Porwal	<ul style="list-style-type: none"> Femina Miss India contest featured 30 talented contestants who were state winners representing all 29 states and one from the Union Territories. Winner represents India at the upcoming Miss World pageant.
8.	National Kishore Kumar Award 2023	Rajkumar Hirani	<ul style="list-style-type: none"> The award is given every year to an eminent artist by the Directorate of Culture, Madhya Pradesh Government from 1997.
9.	Patrick J. McGovern Award	-	<ul style="list-style-type: none"> Chiratae Ventures, a prominent Indian venture capital fund, has recognized three influential leaders with the 2024 Patrick J. McGovern Awards. Narayana Murthy, the Founder of Infosys, received the India Lifetime Achievement Award. Shantanu Narayen, Chair and CEO of Adobe, was awarded the Global Lifetime Achievement Award. Abhinav Asthana, CEO and Founder of Postman, received the Exceptional Entrepreneurial Achievement Award.
10.	Nobel Prize in Physics 2024	John Hopfield; Geoffrey Hinton	<ul style="list-style-type: none"> For foundational discoveries and inventions that enable machine learning with artificial neural networks.
11.	Nobel Prize in Chemistry 2024	David Baker; Demis Hassabis; John Jumper	<ul style="list-style-type: none"> David Baker - For computational protein design Demis Hassabis and John Jumper - For protein structure prediction
12.	Nobel Prize in Physiology or Medicine 2024	Victor Ambros; Gary Ruvkun	<ul style="list-style-type: none"> For the discovery of microRNA and its role in post-transcriptional gene regulation.
13.	Nobel Prize in Literature 2024	Han Kang	<ul style="list-style-type: none"> For her intense poetic prose that confronts historical traumas and exposes the fragility of human life.
14.	Nobel Peace Prize 2024	Nihon Hidankyo	<ul style="list-style-type: none"> For its efforts to achieve a world free of nuclear weapons and for demonstrating through witness testimony that nuclear weapons must never be used again.
15.	Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2024	Daron Acemoglu; Simon Johnson; James Robinson	<ul style="list-style-type: none"> For studies of how institutions are formed and affect prosperity.

OBITUARIES IN NEWS

	DATE	PERSON	IMPORTANT INFORMATION
1.	3 October 2024	Mohanraj	<ul style="list-style-type: none"> Mohanraj was a Veteran Malayalam actor, renowned for his legendary role as 'Keerikkadan Jose' in Kireedam.
2.	8 October 2024	Dr. Panangipalli Venugopal	<ul style="list-style-type: none"> Former Director of the All India Institute of Medical Sciences (AIIMS). Celebrated cardiac surgeon renowned for conducting India's first heart transplant.
3.	9 October 2024	Ratan Tata	<ul style="list-style-type: none"> From torchbearer to transformer, the late Chairman Emeritus Ratan Tata played shepherd and sentinel while guiding the Tata group into a new age, and did it in his own distinctive style. He was awarded Padma Bhushan in 1998.

4.	18 October 2024	Vasant Anant Gadgil	<ul style="list-style-type: none"> • He was a Sanskrit scholar and the founder of Sharda Gyan Peetham. • He was deeply involved in researching ancient Sanskrit texts, such as the Vedas and Upanishads, and was a significant figure at the Bhandarkar Oriental Research Institute.
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IMPORTANT DAYS IN OCTOBER

	Date	Day	Significance / Remark / Detail
1.	1 October 2024	International Day of the Older Persons	<ul style="list-style-type: none"> • 2024 Theme: Ageing with Dignity: The Importance of Strengthening Care and Support Systems for Older Persons Worldwide • On 14 December 1990, the United Nations General Assembly designated October 1 as the International Day of Older Persons (resolution 45/106).
2.	1 October 2024	International Coffee Day	<ul style="list-style-type: none"> • 2024 Theme: Coffee, Your Daily Ritual, Our Shared Journey
4.	2 October 2024	Lal Bahadur Shastri Jayanti	<ul style="list-style-type: none"> • 120th birth anniversary of Lal Bahadur Shastri, the second Prime Minister of independent India.
5.	2 October 2024	Gandhi Jayanti	<ul style="list-style-type: none"> • 155th birth anniversary of Mohandas Karamchand Gandhi, commonly known as Mahatma Gandhi.
6.	2 October 2024	International Day of Non-Violence	<ul style="list-style-type: none"> • The International Day of Non-Violence is observed on 2 October, the birthday of Mahatma Gandhi, leader of the Indian independence movement and pioneer of the philosophy and strategy of non-violence. • According to General Assembly resolution A/RES/61/271 of 15 June 2007, which established the commemoration, the International Day is an occasion to disseminate the message of non-violence, including through education and public awareness.
7.	4 October 2024	World Animal Day	<ul style="list-style-type: none"> • World Animal Day, sometimes referred to as world Animal Welfare Day or World Animal Protection Day is an annual event on the 4th of October, celebrating animal rights and welfare across the globe. • World Animal Day is celebrated yearly on October 4th to align with the feast day of Saint Francis of Assisi, the patron saint of ecology and animals.
8.	5 October 2024	World Teachers' Day	<ul style="list-style-type: none"> • World Teachers' Day is held annually on 5 October to celebrate all teachers around the globe. • It commemorates the anniversary of the adoption of the 1966 ILO/UNESCO Recommendation concerning the Status of Teachers, which sets benchmarks regarding the rights and responsibilities of teachers, and standards for their initial preparation and further education, recruitment, employment, and teaching and learning conditions.
9.	7 October 2024	World Habitat Day	<ul style="list-style-type: none"> • 2024 Theme: Engaging youth to create a better urban future • The United Nations designated the first Monday of October of every year as World Habitat Day to reflect on the state of our habitats, and on the basic right of all to adequate shelter.
10.	7 October 2024	World Cotton Day	<ul style="list-style-type: none"> • The initiative of World Cotton Day was born in 2019, when four cotton producers in sub-Saharan Africa– Benin, Burkina Faso, Chad and Mali, known as the Cotton Four -proposed the World Trade Organization a World Cotton Day celebration on October 7.

11.	8 October 2024	Indian Air Force Day	<ul style="list-style-type: none"> The Indian Air Force was officially established on 8 October 1932.
12.	9 October 2024	World Post Day	<ul style="list-style-type: none"> World Post Day is celebrated each year on 9 October. The event was declared by the 1969 Universal Postal Congress in Tokyo as a means to mark the anniversary of the Universal Postal Union's (UPU) creation in 1874.
13.	10 October 2024	National Post Day	<ul style="list-style-type: none"> National Post Day is celebrated on October 10 every year and it is an extension of World Post Day, which is celebrated on October 9. National Post Day is celebrated to mark the role played by the Indian postal department in over 150 years.
14.	10 October 2024	World Mental Health Day	<ul style="list-style-type: none"> The overall objective of World Mental Health Day is to raise awareness of mental health issues around the world and to mobilize efforts in support of mental health.
15.	11 October 2024	International Day of the Girl Child	<ul style="list-style-type: none"> 2024 Theme: Girls' vision for the future On December 19, 2011, United Nations General Assembly adopted Resolution 66/170 to declare October 11 as the International Day of the Girl Child, to recognize girls' rights and the unique challenges girls face around the world.
16.	12 October 2024	World Migratory Bird Day	<ul style="list-style-type: none"> Theme: The importance of insects for migratory birds The World Migratory Bird Day campaign in 2024 will focus on the importance of insects for migratory birds, and highlight concerns related to decreasing populations of insects.
17.	13 October 2024	International Day for Disaster Risk Reduction	<ul style="list-style-type: none"> The International Day for Disaster Risk Reduction 2024 focuses on the role of education in protecting and empowering children for a disaster-free future.
18.	13 October 2024	Breast Cancer Awareness Day and Month	<ul style="list-style-type: none"> Breast Cancer Awareness Month is an international health campaign that's held every October. It is called Pink October as people around the world adopt the pink colour and display a pink ribbon to raise awareness about the importance of prevention and routine screening for the early diagnosis of breast cancer
19.	14 October 2024	World Standards Day	<ul style="list-style-type: none"> Each year on 14 October, the members of the IEC, ISO and ITU celebrate World Standards Day, which is a means of paying tribute to the collaborative efforts of thousands of experts worldwide who develop the voluntary technical agreements that are published as International Standards.
20.	15 October 2024	International Day of Rural Women	<ul style="list-style-type: none"> Theme: Rural Women Cultivating Good Food for All
21.	15 October 2024	World Students' Day	<ul style="list-style-type: none"> Every year on October 15, the World Students' Day is observed to honour the contributions of the former President Dr. APJ Abdul Kalam in the field of education.
22.	16 October 2024	World Food Day	<ul style="list-style-type: none"> World Food Day, observed annually on October 16th, serves as a global call to action in the fight against hunger and malnutrition. 2024 Theme: Right to Foods for a Better Life and a Better Future
23.	16 October 2024	World Anaesthesia Day	<ul style="list-style-type: none"> Every year on 16 October, World Federation of Societies of Anaesthesiologists (WFSA) supports anaesthesia providers the world over to celebrate their profession and have a bit of fun whilst doing it. World Anaesthesia Day commemorates the birth of anaesthesia on 16 October 1846.

24.	17 October 2024	International Day for the Eradication of Poverty	<ul style="list-style-type: none"> • 2024 Theme: Ending Social and Institutional Maltreatment Acting together for just, peaceful and inclusive societies • The observance of the International Day for the Eradication of Poverty can be traced back to 17 October 1987. • Through resolution 47/196 adopted on 22 December 1992, the UN General Assembly declared 17 October as the International Day for the Eradication of Poverty.
25.	17 October 2024	Pargat Diwas or Valmiki Jayanti	<ul style="list-style-type: none"> • Valmiki Jayanti commemorates the birth anniversary of the Sanskrit poet Maharishi Valmiki. • According to the Hindu calendar, Valmiki Jayanti falls on the full moon day of the month of Ashwin, which corresponds to September-October in the Gregorian calendar.
26.	20 October 2024	World Statistics Day	<ul style="list-style-type: none"> • In 2015, with resolution 96/282, the General Assembly decided to designate 20 October 2015 as the second World Statistics Day under the general theme "Better data, better lives," as well as to celebrate World Statistics Day every five years on 20 October.
27.	21 October 2024	Police Commemoration Day	<ul style="list-style-type: none"> • The Police Commemoration Day is observed on 21st October every year • This is day is observed as Martyr's Day in all police forces of India • The day commemorates the sacrifices of ten policemen who sacrificed their life while defending our borders with China in 1959.
28.	24 October 2024	United Nations Day	<ul style="list-style-type: none"> • United Nations Day, on 24 October, marks the anniversary of the entry into force in 1945 of the UN Charter.
29.	24 October 2024	World Development Information Day	<ul style="list-style-type: none"> • The General Assembly in 1972 established World Development Information Day to draw the attention of the world to development problems and the need to strengthen international cooperation to solve them (resolution 3038 (XXVII)).
30.	30 October 2024	World Savings Day	<ul style="list-style-type: none"> • 31st October every year is observed as World Savings Day. • It is also referred to as World Thrift Day. A day to inform people across the globe to save money in banks and not keep under the mattress.
31.	31 October 2024	Rashtriya Ekta Diwas or National Unity Day	<ul style="list-style-type: none"> • National Unity Day or Rashtriya Ekta Diwas is celebrated in India every year on October 31, to commemorate Sardar Vallabhbhai Patel's birth anniversary.

IMPORTANT SUMMITS/CONFERENCES IN NEWS

	Summit/Conference	Details
1.	AYUSH Medical Value Travel Summit	<ul style="list-style-type: none"> • Took place in Mumbai. • To strengthen India's position in Medical Value Travel (MVT) by integrating traditional Indian systems of medicine Ayurveda, Yoga, Unani, Siddha, and Homeopathy (Ayush) with modern healthcare systems. • Theme - Global Synergy in Ayush: Transforming Health and Wellness through Medical Value Travel
2.	G7 Call	<ul style="list-style-type: none"> • Italian Prime Minister Giorgia Meloni convened a call of G7 leaders to discuss the escalating crisis in the Middle East. • Italy highlighted the need for the full implementation of U.N. Resolution 1701, which brought an end to the 2006 Israel-Hezbollah conflict. • The 50th G7 summit was held from June 13 to 15, 2024, in Fasano, Apulia, Italy. Hosted by Prime Minister Giorgia Meloni.

3.	44th and 45th ASEAN Summit + 21st India-ASEAN Summit	<ul style="list-style-type: none"> Hosted by Laos in Vientiane. It brought together leaders from ASEAN countries and partners, emphasizing resilience and connectivity across key areas. Outcome: Adoption of the ASEAN Vision Statement on the Indo-Pacific underscored ASEAN’s central role in regional security and cooperation. PM Modi unveiled a 10-point plan aligned with the theme Enhancing Connectivity and Resilience.
4.	India Digital Agri Conference 2024	<ul style="list-style-type: none"> Co-organized by the Indian Chamber of Food and Agriculture (ICFA) and IIT Ropar TIF – AWaDH in New Delhi. It highlighted the need to transition from traditional to digital farming, emphasizing cutting-edge innovations and collaboration between farmers, researchers, and tech developers.
5.	SCO Islamabad Summit 2024	<ul style="list-style-type: none"> SCO Islamabad Summit 2024 was the 23rd annual Council of Heads of Government (CHG) of the Shanghai Cooperation Organisation held between 15 and 16 October 2024 in Islamabad, Pakistan. External Affairs Minister Dr. S Jaishankar represented India at the summit. The summit focused on several critical issues, including regional security, economic cooperation, and combating terrorism.
6.	World Telecommunication Standardization Assembly (WTSA-24)	<ul style="list-style-type: none"> The World Telecommunication Standardization Assembly is held every four years and defines the next period of study for ITU Telecommunication Standardization Sector. This year’s focus includes critical technologies like 6G, AI, and IoT.
7.	National Conference on the Rights of Older Person	<ul style="list-style-type: none"> Organised by National Human Rights Commission on its 31st foundation day.

IMPORTANT TERMS IN NEWS

	Term	Meaning and Details
1.	Keffiyeh	<ul style="list-style-type: none"> It is a headdress that has become heavily associated with Palestinian solidarity.
2.	Cyber Slavery	<ul style="list-style-type: none"> It refers to a situation where an individual is allegedly held against their will and forced to carry out cyber fraud.
3.	PUSA-44	<ul style="list-style-type: none"> Pusa-44 is a variant of paddy bred by the Indian Agricultural Research Institute (IARI) in New Delhi. It was released for large-scale cultivation in 1993. Pusa-44 takes 155-160 days to grow, from the time of sowing its seeds in nurseries to harvesting the grain.
4.	Cadaver Donation	<ul style="list-style-type: none"> It sees a person donate their entire body (rather than individual organs) to science after death. Anyone over the age of 18 years can legally consent to become a cadaver donor.
5.	Sarco Pod	<ul style="list-style-type: none"> It is a coffin-sized, air-tight machine designed by Exit International. It is used for euthanasia in Switzerland. A person lying inside it could press a button to initiate the dying process, flooding the air inside it with nitrogen gas.
6.	Blue Line border	<ul style="list-style-type: none"> The 120-km Blue Line is a UN-recognised demarcation line to indicate that Israel had withdrawn its military from southern Lebanon. It separates Lebanon from Israel and the Golan Heights, but it is not an official international border.

7.	Dragon Drones	<ul style="list-style-type: none"> Dragon drones essentially release a substance called thermite — a mixture of aluminium and iron oxide. It can burn through almost anything, from clothes to trees to military-grade vehicles, and can even burn underwater.
8.	Bone Ossification Test	<ul style="list-style-type: none"> Ossification is the natural process of bone formation. An ossification test is a medical procedure that analyses bones in order to determine age
9.	Marine Heat Waves	<ul style="list-style-type: none"> Marine Heat Waves (MHWs) are defined by the unusual warming of ocean waters. In recent years, global warming has made MHWs more frequent and intense.

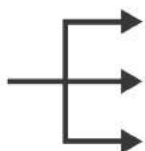
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OCTOBER - DAILY MCQs FROM THE HINDU & INDIAN EXPRESS

DAILY MCQ PRACTICE

Q 1. Consider the following with reference to the Senior care Ageing Growth Engine (SAGE) initiative:

1. The primary purpose of SAGE initiative is to offer financial assistance to the elderly.
2. Ministry of Health and Family Welfare is responsible for the implementation of the SAGE initiative.
3. One of the key goals of the SAGE initiative is to provide housing for the elderly.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) Only three (d) None

Q 2. Which of the following best describes Bharat Small Modular Reactors (BSMR)?

- (a) They are designed solely for military applications
- (b) They are large nuclear reactors that operate independently
- (c) They are compact and factory-fabricated reactors designed for scalability and safety
- (d) They are reactors that require extensive cooling systems

Q 3. Consider the following statements regarding Current Account Deficit:

1. It is the difference between exports and imports of goods and services in a given time frame.
2. India's current account deficit has reduced in the first quarter of FY25 due to reduction in merchandise trade deficit.

Which of the statements above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 4. The Palghat Gap and Shencottah Gap are located in ...

- (a) Eastern Ghats (b) Satpura Range
- (c) Western Ghats (d) Vindhya Range

Q 5. Consider the following with reference to the Article 13(2) of the Indian Constitution:

1. It falls under the Part III of the Indian Constitution.

2. It provides that the State shall have the power to make laws for the protection of the environment.

3. In context of the article, the term 'law' refers to all laws made by the Parliament and State Legislatures.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 6. Which of the following is a limitation on the rights conferred by Article 26 of the Indian Constitution?

- (a) Restrictions imposed by the Constitution itself
- (b) Limitations based on political beliefs
- (c) Limitations based on economic status
- (d) Restrictions based on religion

Q 7. It is a trans-boundary river that originates in Tibet and is part of the Koshi or Sapta Koshi river system in Nepal. It is helping Mount Everest to grow higher by eroding rock and soil at its base. The above lines describe which of the following rivers?

- (a) Tamur River (b) Barun River
- (c) Arun River (d) Kali River

Q 8. Consider the following statements regarding Epidemic Diseases Act (EDA), 1897:

1. It defines dangerous, infectious diseases and epidemics.
2. It has no provisions for the processes required for dissemination of drugs and vaccines.

Which of the statements above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 9. Which of the following authority has the power to make regulations for the peace and good governance of Scheduled Areas under the 5th Schedule?

- (a) The Parliament (b) The Governor of the State
- (c) The State Legislature (d) The Union Home Minister

Q 10. Consider the following with reference to 'The Sixth Schedule of the Indian Constitution':

1. Article 244 of the Indian Constitution mentions the Sixth Schedule.

2. The primary purpose of the Sixth Schedule is to protect the rights and interests of tribal communities.
3. The Panchayati Raj institutions of administrative structure is provided for in the Sixth Schedule.
4. The President of India has the authority to create Autonomous District Councils in the Sixth Schedule areas.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) Only three (d) All four

Q 11. Elephant Census in India is carried out by ...

- (a) National Biodiversity Authority
- (b) Zoological Survey of India
- (c) National Board of Wildlife
- (d) Wildlife Institute of India

Q 12. Consider the following statements regarding Mpox:

1. It is a viral infectious disease cause by the monkeypox virus.
2. It can be contracted sexually and spread through skin-to-skin contact.
3. No vaccine for the prevention of disease is available.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 13. Consider the following with reference to 'The Prison Manuals in India':

1. The prison manual in India is governed by Code of Criminal Procedure, 1973.
2. The central government is responsible for the administration of prisons in India.
3. According to the prison manual in India, prisoners in India have the Right to Vote.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 14. Which of the following is the main function of the U.S. Commission on International Religious Freedom (USCIRF)?

- (a) To monitor and report on religious freedom globally

- (b) To organize interfaith conferences
- (c) To provide military aid to nations violating religious freedom
- (d) To fund religious organizations worldwide

Q 15. Consider the following statements regarding Chagos Archipelago:

1. It is a group of islands in the Indian Ocean belonging to Maldives.
2. Diego Garcia is the largest island in the archipelago.

Which of the statements above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 16. It is a military alliance established in 1949, aimed at ensuring collective defence among its member states in response to external aggression. It operates under the principle that an attack on one member is considered an attack on all its members. Above paragraph describes which of the following international bodies?

- (a) OECD (b) G-20
- (c) FVEY (d) NATO

Q 17. Which of the following statements are correct in respect of 'The PM Kissan Samman Nidhi Scheme (PM-KISAN)':

1. It's main objective is to provide income support to small and marginal farmers.
2. The financial support is directly transferred to the bank accounts of beneficiaries through Direct Benefit Transfer (DBT).
3. Ministry of Rural Development is responsible for implementing the PM-KISAN scheme.

Select the answer using the code given below:

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 & 3

Q 18. Consider the following statements:

1. The Article 21 of the Indian Constitution guarantees the Right to Dignity.
2. The Article 29 of the Indian Constitution guarantees Right Against Forced Labour.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 19. Consider the following statements regarding S-400 Triumf:

1. It is a long-range air defence missile system developed by Russia.
2. It is designed to target ballistic and cruise missiles and cannot engage with aircraft or drones.
3. India has operationalised and deployed five units of S-400 in its strategic and border areas.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) Only three (d) None

Q 20. Consider the following statements regarding components of India's Forex Reserves:

1. Gold is the largest constituent of India's Forex reserves.
2. In absolute terms Reserve Position in the IMF is the smallest constituent in India's Forex reserves.
3. Amounts lent under the SAARC and ACU currency swap arrangements are excluded from Foreign Currency Assets.

Which of the statements above is/are correct?

- (a) 1 only (b) 1 and 2 only
(c) 2 and 3 only (d) 1, 2 & 3

Q 21. Consider the following with reference to 'The India-Maldives relations':

1. The Maldives lies southwest to the Andaman and Nicobar Islands.
2. The Duncan Passage acts as a natural barrier between India and the Maldives
3. Both India and Maldives are members of Shanghai Cooperation Organization (SCO).
4. The Andaman Sea separates India and the Maldives.

How many of the above is/are correct?

- (a) Only two (b) Only three
(c) All four (d) None

Q 22. Consider the following pairs:

	Country	Recently seen in news
1.	Tunisia	Conflict between forces leading to civil wars
2.	United Kingdom	Migrant movements crossing the channel
3.	Sudan	Voting's for presidential elections

How many of the above pairs is/are correctly matched?

- (a) Only one (b) Only two
(c) All three (d) None

Q 23. Consider the following statements regarding Monetary Policy Committee (MPC):

1. It is constituted under the Banking Regulation Act, 1949.
2. Deputy Governor of RBI is an ex-officio member of the committee.
3. The key role of MPC is to target inflation.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 24. Which of the following countries send the highest number of tourists to India:

- (a) USA (b) UK
(c) Nepal (d) Bangladesh

Q 25. Which of the following is the main objective of the Ni-kshay Mitra initiative?

- (a) To improve vaccination rates
(b) To fund medical research
(c) To support TB patients
(d) To promote awareness about HIV

Q 26. Consider the following with reference to 'Passively managed Mutual Funds':

1. The primary characteristic of a passively managed mutual fund is It involves frequent buying and selling of securities.
2. Exchange-Traded Funds (ETFs) are often considered passively managed because they are actively traded throughout the day.
3. The Index Fund is an example of a passively managed mutual fund.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 27. Consider the following statements regarding Marburg Virus Disease (MVD):

1. It is caused by Marburg virus which belongs to the filovirus family.
2. The first outbreak occurred in West Africa in 19th century.

Which of the statements above is/are correct?

- (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2

Q 28. Consider the following countries:

1. Brazil 2. Ecuador
3. Guyana 4. Peru
5. Paraguay

Amazon River passes through which of the above countries? Select the correct code:

- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
 (c) 1 and 4 only (d) 1, 4 and 5 only

Q 29. Which of the following statements are correct in respect of 'The Nobel Prize in Physics':

1. John J. Hopfield and Geoffrey E. Hinton were the winners of the 2024 Nobel Prize in Physics.
2. The main contribution of the 2024 Nobel Prize in Physics laureates were advancements in particle physics.
3. Artificial intelligence has greatly benefited from the work of the 2024 Nobel Prize laureates.

Select the answer using the code given below:

- (a) 1 and 2 only (b) 2 and 3 only
 (c) 1 and 3 only (d) 1, 2 and 3

Q 30. Which of the following best describes the impact of dehyphenation on India-Israel relations?

- (a) It has led to increased military conflict
- (b) It promotes equal partnerships with both nations
- (c) It reduces the importance of trade agreements
- (d) It allows deeper engagement with Israel independently from Palestine

Q 31. Nobel Prize 2024 in Physics is awarded for:

- (a) Experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter
- (b) Foundational discoveries and inventions that enable machine learning with artificial neural networks
- (c) Experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science
- (d) Groundbreaking contributions to our understanding of complex physical systems

Q 32. Which of the following statements best describe Deep Learning

- (a) A linear rule-based system for decision making.
- (b) A method of data analysis that involves clustering and classification of small datasets.
- (c) A machine learning technique that uses shallow neural networks to model data.
- (d) A subset of machine learning that uses multi-layered neural networks to automatically learn complex patterns from large datasets.

Q 33. Consider the following statements regarding Living Planet Report:

1. It is an annual report of World Wildlife Fund (WWF).
2. According to the report the monitored global wildlife population declined by more than 70% in last 50 years.
3. The population decline is due to habitat loss and degradation only.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Q 34. Consider the following statements regarding Comprehensive Annual Modular Survey (CAMS):

1. Its primary objective is to collect data to generate indicators related to education, out-of-pocket medical expenditure, use of mobile and internet, financial inclusion, ICT skills, possession of assets, etc.
2. According to the survey, Kerala leads among states in percentage of households owning a computer.

Which of the statements above is/are correct?

- (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2

Q 35. Which of the following is a key operational advantage of the MQ-9B?

- (a) It has a low operational cost compared to manned aircraft
- (b) It is completely autonomous with no human control
- (c) It can only operate in clear weather conditions
- (d) It is designed for high-speed interception

Q 36. Consider the following statements:

1. The decrease in the Cash Reserve Ratio (CRR) increases the liquidity in the banking system.
2. The Central Bank will decrease the Cash Reserve Ratio (CRR) to combat high inflation.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 37. Consider the following with reference to 'The Bharat Ratna':

1. The Bharat Ratna is awarded for excellence in academics.
2. The Bharat Ratna was first awarded in 1962 by Prime Minister Jawahar Lal Nehru.
3. There is no limit to number of people who can be awarded Bharat Ratna in an year.
4. Dr. S. Radhakrishnan was the first recipient of the Bharat Ratna.

How many of the above is/are correct?

- (a) Only two (b) Only three
(c) All four (d) None

Q 38. Consider the following statements:

1. Peros Banhos is the largest island in the Chagos Archipelago and is home to a significant U.S. military base.
2. The United Kingdom administers the Chagos Archipelago as a British Indian Ocean Territory.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 39. Which of the following tech giants is facing an anti-trust case for illegal monopoly of its search engine?

- (a) Apple (b) Microsoft
(c) Meta (d) Google

Q 40. Consider the following statements regarding Antarctica:

1. Antarctica is warming twice as fast as the global average.
2. Plant cover across the Antarctic Peninsula has increased over the past decades.
3. Increased plant cover lowers the albedo over Antarctica.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 41. Consider the following regarding Nobel Prizes:

	Nobel Prize in ...	Awarded by ...
1.	Physiology or Medicine	Royal Swedish Academy of Sciences, Stockholm, Sweden

2.	Physics	Karolinska Institute, Stockholm, Sweden
3.	Chemistry	Royal Swedish Academy of Sciences, Stockholm, Sweden
4.	Literature	Swedish Academy

How many of the above pairs are correctly matched?

- (a) Only one (b) Only two
(c) Only three (d) All four

Q 42. Consider the following regarding winners of 2024 Nobel Prizes:

	2024 Nobel Prize in ...	Awarded to ...
1.	Physiology or Medicine	Victor Ambros
2.	Physics	David Baker
3.	Peace	Nihon Hidankyo
4.	Literature	Han Kang

How many of the above pairs are correctly matched?

- (a) Only one (b) Only two
(c) Only three (d) All four

Q 43. Which of the following is the main focus of the Wilmington Declaration?

- (a) To promote civil rights for all citizens
(b) To declare independence from British rule
(c) To establish white supremacy and restore control to white Democrats
(d) To outline the rights of African Americans

Q 44. Consider the following with reference to 'The Sixth Schedule of the Indian Constitution':

1. The Sixth Schedule of the Indian Constitution provides for the creation of the Autonomous District Councils (ADCs).
2. The Article 244 of the Indian Constitution provides for the administration of tribal areas in the north-eastern states.
3. The Sixth Schedule was designed to safeguard the rights of the indigenous tribal population in the Northern and north-eastern states.
4. Under the Sixth Schedule, the Autonomous District Councils (ADCs) have the authority to collect taxes on professions, trades, and employment.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) Only three (d) All four

- Q 45. Which of the following best describes Net Interest Margin (NIM):
- Total interest earned on loans
 - Difference between an institution's total assets and total liabilities
 - Percentage of non-performing assets in the institute's portfolio
 - Difference between interest earned and interest paid, expressed as a percentage of total assets

Q 46. Consider the following ancient sites in India:

	Ancient Site	State/UT
1.	Maski	Kerala
2.	Lothal	Gujarat
3.	Burzahom	Jammu & Kashmir
4.	Nagarjungkonda	Andhra Pradesh

How many of the above pairs are correctly matched?

- Only one
- Only two
- Only three
- None

Q 47. Consider the following with reference to 'The Wholesale Price Index (WPI)':

- National Statistical Office (NSO) is responsible for publishing the WPI.
- It primarily measure changes in the cost of living for consumers.
- Higher WPI inflation leads to higher interest rates.
- Supply chain disruptions can lead to an increase in WPI.

How many of the above is/are correct?

- Only one
- Only two
- Only three
- All four

Q 48. What effect does a decrease in the bank rate have on the economy?

- It encourages banks to lend more
- It discourages consumer spending
- It leads to an increase in loan rates
- It has no effect on the money supply

Q 49. Consider the following statements regarding Europa Clipper:

- It is spacecraft launched by European Space Agency (ESA) for the study of Mars.
- Aim of the mission is to look for life on the Red Planet.

Which of the statements above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Q 50. Sveriges Riksbank Prize 2024 in Economic Sciences is awarded for:

- Having advanced our understanding of women's labour market outcomes
- Studies of how institutions are formed and affect prosperity
- Research on banks and financial crises
- Methodological contributions to the analysis of causal relationships

Q 51. A bone ossification test is primarily used for ...

- Measuring the mineral density of bones.
- Identifying the genetic mutations in bone structure.
- Detecting pathogens and infections in bones.
- Determining age of a person by examining the development of bones.

Q 52. What is Terminal High Altitude Area Defence (THAAD), recently seen in the news?

- An Israeli radar system
- India's indigenous anti-missile programme
- An American anti-missile system
- A defence collaboration between Japan and South Korea

Q 53. Consider the following statements:

Statement 1: The area sown under coarse cereals such as millets has dropped by 10 million hectares since the 1950s.

Statement 2: The push for high-yielding crops has led to the decline of resilient and nutritious crops.

Which one of the following is correct in respect of the above statements?

- Both statement 1 and Statement 2 are correct and statement 2 explains statement 1
- Both statement 1 and Statement 2 are correct and statement 2 does not explains statement 1
- Statement 1 is correct, but Statement 2 is incorrect
- Statement 2 is correct, but Statement 1 is incorrect

Q 54. Consider the following with reference to 'The Right to Food':

- The Right to Food primarily guarantee subsidized agricultural products.
- Universal Declaration of Human Rights international document recognizes the Right to Food.
- Ownership of food production facilities is an important component of the Right to Food.

How many of the above is/are correct?

- Only one
- Only two
- All three
- None

Q 55. Consider the following crops:

1. Barley
2. Gram
3. Safflower
4. Soyabean

How many of the above crops are grown in Rabi season?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Q 56. Arrange the following places from North to South:

1. Saser La
2. Durbuk
3. Karakoram Pass
4. Galwan
5. Daulet Beg Oldie

Select the correct code:

- (a) 1, 2, 3, 4 and 5
- (b) 2, 3, 1, 5 and 4
- (c) 3, 5, 1, 4 and 2
- (d) 2, 5, 1, 3 and 4

Q 57. Which of the following ministry is responsible for implementing the PM Garib Kalyan Yojana?

- (a) Ministry of Health and Family Welfare
- (b) Ministry of Finance
- (c) Ministry of Consumer Affairs, Food and Public Distribution
- (d) Ministry of Rural Development

Q 58. Consider the following with reference to the National Pharmaceutical Pricing Authority (NPPA):

1. The NPPA is responsible for ensuring that essential drugs are available at affordable prices under Drug Price Control Order (DPCO).
2. The function of the NPPA is fixing or revising prices of controlled bulk drugs and formulations.
3. NPPA works under the Ministry of Chemicals and Fertilizers.

How many of the above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q 59. Consider the following statements regarding Eddy Currents in oceans (Eddies):

1. Eddies are smaller, temporary loops of swirling water that can travel long distances before dissipating.
2. They can transport heat, nutrients, and marine organisms over long distances.
3. Eddies contribute to ocean mixing and can support marine ecosystems by upwelling nutrient-rich water.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q 60. Section 6B of the Citizenship Act, 1955 is not applicable to:

1. Scheduled Areas under the Fifth Schedule to the Constitution.
2. Tribal Areas under the Sixth Schedule to the Constitution.
3. Areas under the Inner Line notified under the Bengal Eastern Frontier Regulation, 1873.

Select the correct code:

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1 and 3 only

Q 61. The Gender Development Index (GDI) is published as part of which of the following report?

- (a) Global Gender Gap Report
- (b) The World Economic Forum Report
- (c) World Health Organization Report
- (d) United Nations Development Programme (UNDP) Human Development Report

Q 62. Consider the following with reference to 'The Section 6A of the Citizenship Act':

1. Section 6A of the Citizenship Act, 1955, was introduced to implement the Assam Accord.
2. As per the Assam Accord, people who entered Assam after 31st December 1985 will be accepted as the Indian citizens.
3. According to Section 6A of the Citizenship Act, those who entered Assam between 1st January 1966 and 31st December 1985 would be deported.
4. The Foreigners Tribunal is responsible for identifying foreigners under Section 6A of the Citizenship Act in Assam.

How many of the above is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Q 63. Global Supply Chain Stress Index is released by ...

- (a) World Economic Forum (WEF)
- (b) International Monetary Fund (IMF)
- (c) World Bank
- (d) World Trade Organization (WTO)

Q 64. Consider the following statements regarding Swavlamban Shakti exercise:

1. It is a bilateral military exercise between the Armies of India and Nepal.

2. It is conducted by Indian Army's Sudarshan Chakra Corps and aims to integrate new technology equipment into Army's offensive strategies.

Which of the statements above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 65. Which of the following architectural style is Tungnath temple known for?

- (a) Nagara (b) Vesara
(c) Kalinga (d) Dravidian

Q 66. Consider the following with reference to 'The Benami Transactions (Prohibition) Amendment Act of 2016':

1. Its objective is to curb black money and illegal property transactions.
2. Income Tax Department is responsible for investigating benami transactions under the 2016 Amendment Act.
3. The timeline for an appellate tribunal to dispose of an appeal under the act is within 1 year.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 67. Consider the following with reference to 'The Green Hydrogen':

1. The primary method of producing green hydrogen is through electrolysis of water using renewable energy.
2. The main advantages of using green hydrogen as an energy source is that it has a high energy density compared to coal.
3. The role of electrolyzers in green hydrogen production is to split water into hydrogen and oxygen.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 68. Which of the following initiatives have been launched by QUAD countries to counter China's Belt and Road Initiative (BRI)?

- (a) Build Back Better World (B3W)
(b) Trans-Pacific Partnership (TPP)

- (c) Indo-Pacific Economic Corridor (IPEC)
(d) Global Connectivity Initiative

Q 69. Consider the following statements regarding National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED):

1. It was established in 2011 by the 97th Amendment of the Constitution.
2. NAFED is registered under the Multi State Co-operative Societies Act.
3. It aims to promote Co-operative marketing of agricultural produce to benefit the farmers.

How many of the above pairs are correctly matched?

- (a) Only one (b) Only two
(c) Only three (d) All four

Q 70. Consider the following statements regarding Giant Pandas:

1. China is the only country in the world where they are found in their natural forest habitat.
2. They are categorised as critically endangered in the IUCN Red List.

Which of the statements above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 71. Consider the following statements regarding *Caenorhabditis elegans* (*C. elegans*):

1. It is a non-parasitic, free-living nematode commonly found in soil environments.
2. It is not pathogenic and is used frequently in biological research as a model organism.

Which of the statements above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 72. Consider the following countries:

1. Kazakhstan 2. Kyrgyz Republic
3. Iran 4. Turkmenistan

How many of the above countries are member states of Shanghai Cooperation Organisation (SCO)?

- (a) Only one (b) Only two
(c) Only three (d) All four

Q 73. Consider the following with reference to 'The 74th Constitutional Amendment Act, 1992':

1. The act deals with the Panchayati Raj Institutions.
2. This act led to the establishment of the Gram Panchayats.

3. Part IX-A of the Indian Constitution was introduced by the 74th Constitutional Amendment Act.
4. Reservation of seats for Scheduled Castes (SCs) and Scheduled Tribes (STs) in urban local bodies is a key aspect of the Act.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) Only three (d) All four

Q 74. Which of the following best describes the Nature Restoration Law (NRL)?

- (a) A local initiative for urban planning
- (b) A non-binding recommendation for biodiversity enhancement
- (c) A voluntary guideline for member states
- (d) A binding legal framework for ecosystem restoration

Q 75. Which of the following statements are correct in respect of 'Dandakaranya':

1. Dandakaranya has been since centuries associated with the Industrial mining.
2. Dandakaranya includes parts of Chhattisgarh, Odisha, Telangana, Andhra Pradesh, and Maharashtra.
3. Dandakaranya is known for its significant population of tribal communities.

Select the answer using the code given below:

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

Q 76. Consider the following with reference to 'The International Monetary Fund (IMF)':

1. The function of IMF is to facilitate international trade and ensure exchange rate stability.
2. The headquarters of the IMF is located in New York.
3. As of 2024, there are a total number of 185 member countries.
4. The United States holds the largest voting share in the IMF.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) Only three (d) All four

Q 77. The 30x30 (30 by 30) target is associated with ...

- (a) Vienna Convention for the Protection of the Ozone Layer
- (b) Convention on Biological Diversity
- (c) United Nations Convention to Combat Desertification

- (d) United Nations Framework Convention on Climate Change

Q 78. Consider the following statements regarding Di Ammonium Phosphate (DAP):

1. It is a water-soluble fertiliser required at the time of sowing.
2. It contains more than 50% phosphorus, nutrient needed at early growth stage of root establishment and development.

Which of the statements above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 79. Consider the following with reference to the entries included in the Union List in the Seventh Schedule of the Constitution :

1. Defence
2. Public Health
3. Inter-State Trade and Commerce

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 80. Which of the following conditions are favourable for the formation of a tropical cyclone?

- (a) High atmospheric pressure
- (b) Cold water temperatures
- (c) Strong trade winds
- (d) Warm ocean water and low vertical wind shear

Q 81. Consider the following methods:

1. Solar Radiation Management
2. Direct Air Capture
3. Carbon Dioxide Removal

How many of the above Geoengineering methods can be used to counter the global warming?

- (a) Only one (b) Only two
(c) All three (d) None

Q 82. Consider the following statements regarding Jama Masjid, Delhi:

1. It was built by Mughal Emperor Shah Jahan in his capital Shahjahanabad.
2. It is a protected monument governed by the Ancient Monuments and Archaeological Sites and Remains Act, 1958.

Which of the statements above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 83. Cone of Uncertainty is associated with which of the following events?

- (a) Earthquake (b) Volcano Eruption
- (c) Flood (d) Cyclone

Q84. Consider the following statements regarding Indian Flapshell Turtle:

1. It is a freshwater turtle species commonly found in South Asia.
2. It is one of the most smuggled turtle species in India and is listed Vulnerable by IUCN.

Which of the statements above is/are is correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q85. Consider the following with reference to the National Commission for Protection of Child Rights (NCPCR):

1. The objective of the NCPCR is to protect and promote the rights of children in India.
2. It was established under the Commission for Protection of Child Rights Act, 2005.
3. The President of India appoints the members of the NCPCR.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q86. Which of the following sports is typically *not* included in the Commonwealth Games?

- (a) Badminton (b) Cricket
(c) Rugby Sevens (d) Baseball

Q87. Consider the following pairs:

	Schedules of Indian Constitution	Purpose
1.	1 st	List of subjects under the State List
2.	7 th	Disqualification grounds of defection
2.	8 th	Lists the official languages recognized by the Indian Constitution
4.	10 th	The allocation of seats in the Rajya Sabha

How many of the above pairs is/are correctly matched?

- (a) Only one (b) Only two
(c) All three (d) None

Q88. What is the maximum number of ministers allowed in a state government as per the 91st Constitutional Amendment, 2003?

- (a) 15% of the total number of members in the Legislative Assembly
(b) 10% of the total number of members in the Legislative Assembly
(c) 20% of the total number of members in the Legislative Assembly
(d) 25% of the total number of members in the Legislative Assembly

Q89. Consider the following:

1. Sell-off by Foreign Portfolio Investors (FPIs)
2. Conflict in West Asia
3. Weak Corporate Results

How many of the above are factors behind the October fall of Sensex and Nifty?

- (a) Only one (b) Only two
(c) All three (d) None

Q90. Consider the following statements regarding Semaglutide:

1. It is the active ingredient in popular blood sugar control and weight loss drugs.
2. It can reduce the risk of Alzheimer's disease in people with type 2 diabetes.

Which of the statements above is/are is correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

ANSWER KEY

1.	d	2.	c	3.	a	4.	c
5.	b (1and 3)	6.	a	7.	c	8.	b
9.	b	10.	b (1and 2 only)	11.	d	12.	b (1 and 2 only)
13.	d	14.	a	15.	b	16.	d
17.	a	18.	a	19.	a (1 only)	20.	c
21.	d	22.	a (2 only)	23.	b (2 and 3 only)	24.	d
25.	c	26.	a (3 only)	27.	a	28.	c
29.	c	30.	d	31.	b	32.	d
33.	a (2only)	34.	a	35.	a	36.	a
37.	d	38.	b	39.	d	40.	c
41.	b (3 and 4only)	42.	c (1,3 and 4)	43.	c	44.	c (1,2 and 4 only)
45.	d	46.	c (2, 3 and 4only)	47.	c (1,3, and 4 only)	48.	a
49.	d	50.	b	51.	d	52.	c
53.	a	54.	a (2 only)	55.	c (1,2 and 3 only)	56.	c
57.	c	58.	c	59.	c	60.	c
61.	d	62.	b (1 and 4 only)	63.	c	64.	b
65.	a	66.	b (1 and 2 only)	67.	b (1 and 3 only)	68.	a
69.	b (2 and 3 only)	70.	a	71.	c	72.	c (1,2 and 3 only)
73.	b	74.	d	75.	b	76.	b (1 and 4 only)
77.	b	78.	a	79.	b (1and 3 only)	80.	d

81.	c	82.	a	83.	d	84.	c
85.	c	86.	d	87.	a (3 only)	88.	a
89.	c	90.	c				

For Detailed Explanation

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DAILY MAINS ANSWER WRITING PRACTICE

- Q1. Societal attitude shaped by patriarchy influence public reactions and media coverage of violence against women. Comment. What steps are needed to address the patriarchal biases in society? (GS 1, 15 Marks; 250 Words)
- Q2. Mahatma Gandhi's vision of women empowerment balance traditional feminine values with modern feminist ideals. Comment. What were the limitations of his approach in the context of evolving Indian society? (GS 1; 10 Marks; 150 Words)
- Q3. Government decided to lift the ban on the exports of Non-Basmati White Rice. Discuss the reasons behind this decision. What are the likely impacts of lifting the ban on the exports of Non-Basmati White Rice? (GS 3, 15 Marks, 250 Words)
- Q4. Describe the various facets of Mahatma Gandhi's philosophy. How is Gandhi's philosophy reflected in the constitution of India? (GS 1 & 2; 15 Marks; 250 Words)
- Q5. Critically analyse the effectiveness of smog towers and cloud seeding in combating air pollution in Indian cities. (GS 3; 15 Marks; 250 Words)
- Q6. Discuss the science behind frequent and extreme rainfall and flooding globally. How is climate change impacting global rainfall? (GS 1 & 3; 10 Marks; 150 Words)
- Q6. Define care economy. What are its characteristics and how it is different from monetised economy? Write a short note on International Labour Organization (ILO)'s 5R Framework for decent care work. (GS 3; 15 Marks; 250 Words)
- Q7. What is microRNA? How was microRNA discovered? Discuss the significance of understanding gene regulation. (GS 3; 10 Marks; 150 Words)
- Q8. What is a supercomputing? Discuss the objectives, application areas and significance of National Supercomputing Mission. (GS 3; 15 Marks; 250 Words)
- Q9. What are the recommendations of the Kovind Committee? Discuss the benefits of implementing simultaneous elections and the challenges and concerns associated with simultaneous elections. (GS 2; 15 Marks; 250 Words)
- Q10. In light of Maldives President Mohamed Muizzu's state visit to India, discuss the recent irritants in India-Maldives relations. Also, give the contextual reasons of Maldives' changed approach leading to the state visit. (GS 2; 10 Marks; 150 Words)

- Q11. Discuss the different ethical values and insights from the life of Ratan Tata. (GS 4; 15 Marks; 250 Words)
- Q12. What are the purposes of waste to energy technologies? Describe the different conversion processes in waste to energy. Write a short note on the challenges for waste to energy plants in India. (GS 3; 15 Marks; 250 Words)
- Q13. In light of the NaMo Drone Didi Scheme, discuss the various benefits of using drones for the application of fertilisers and pesticides over manual application. (GS 3; 10 Marks; 150 Words)
- Q14. Discuss the challenges faced by urban local bodies in India. Suggest reforms to enhance the effectiveness of urban local bodies in managing urban issues. (GS 2; 15 Marks; 250 Words)
- Q15. Discuss the main causes of recent diplomatic tensions between India and Canada. What are the potential implications of this rift in Indo-Canadian relations? (GS 2; 15 Marks; 250 Words)
- Q16. Discuss the significance of ASEAN (summit) and related East Aisa Summit in the context of regional security and economic cooperation amidst China's increasing influence. (GS 2; 15 Marks; 250 Words)
- Q17. The world is witnessing rapid rise in sea levels. Discuss the causes of rising sea levels and the ways to respond to the rising sea levels around the world. (GS 1 and 3; 15 Marks; 250 Words)
- Q18. Elections are fundamental components of a working democracy. Discuss the various electoral reforms in India since independence. (GS 2; 10 Marks; 150 Words)
- Q19. Discuss the implications of Marine Heat Waves on marine ecosystems, climate patterns, and global weather phenomena. Suggest some potential measures to mitigate the impact of marine heat waves. (GS1 and 3; 15 Marks; 250 Words)
- Q20. What is BRICS? Discuss the reasons for BRICS collaboration. What are the basic challenges for BRICS as a grouping? (GS 2; 15 Marks; 250 Words)
- Q21. What is Section 6A of the Citizenship Act, 1955? How was it introduced and discuss the grounds on which it was challenged in the Supreme Court? (GS 2; 15 Marks; 250 Words)
- Q22. The current structure of United Nations Security Council (UNSC) reflects outdated power dynamics. Comment. Discuss the potential reforms in UNSC that can make it more equitable and relevant. (GS 2; 15 Marks; 250 Words)

For Detailed Explanation

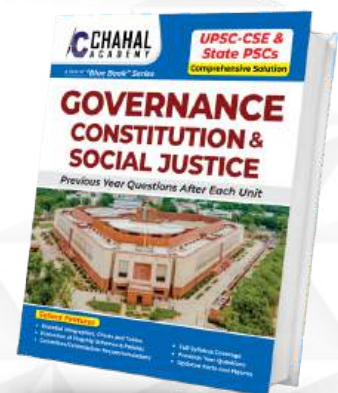
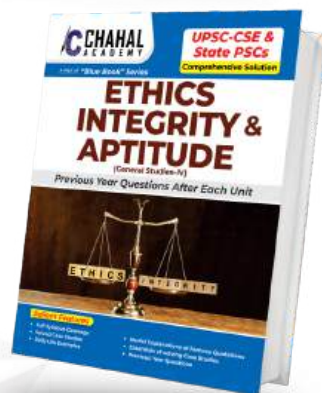
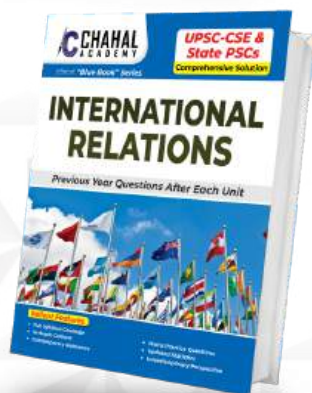
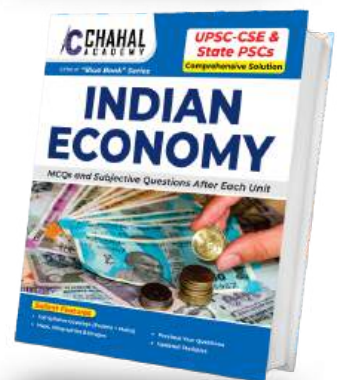
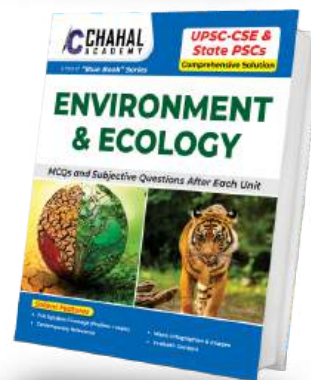
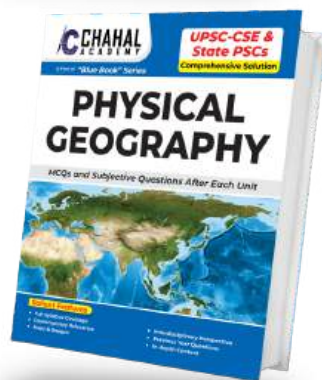
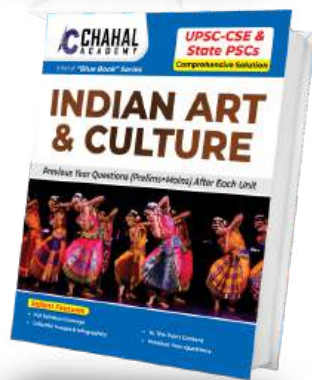
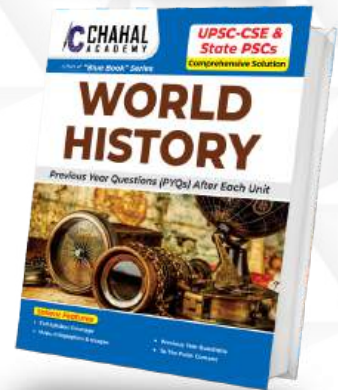
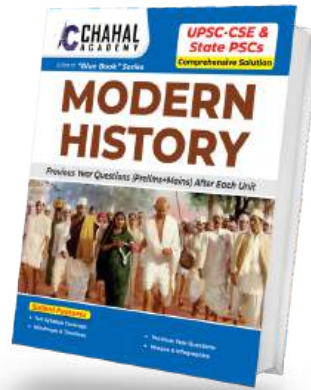
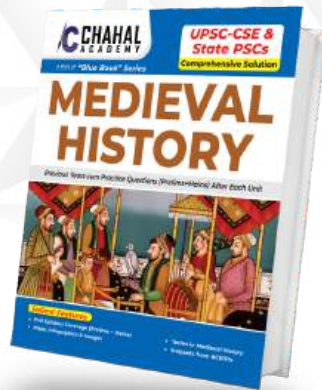
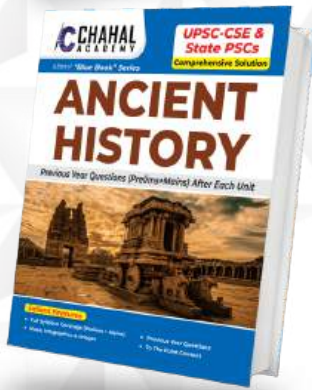
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