VAJIRAM & RAVI
INDEX

Social Justice

Victim Compensation

Special Kits For Sexual Assault Cases

World Health Day

International Convention on World Homoeopathy Day

ICMR Launches MERA India

Candida Auris

World Haemophilia Day

Mosquirix - Vaccine for Malaria

WHO Guidelines For Children Under The Age Of 5

Bridge Courses For Dentists

WHO Guidelines on Digital Health Technology

World Immunization Week

Antibiotics Information Dissemination

National Institutional Ranking Framework 2019

International Relations

Bangladesh-Bhutan-India-Nepal initiative

Suspension of LoC Trade between J&K and PoJK

India Gets Access To Bolivia's Lithium

Qatar to Abolish Exit Visa System

Indo-Pacific Wing

UN Arms Trade Treaty

US Top Court Ruling Against Global Funding Agency

Economic Growth And Development

India's Foreign Trade

Supreme Court Quashes RBI Circular On Insolvency

RBI Study Finds Large Banks To Be More Efficient

RBI Has Too Many Coins

Migration and Development Brief 2018

India's Electric Mobility Transformation

World Economic Outlook April 2019

Agriculture

Global Food Policy Report 2019

Global Report On Food Crises 2019

Technology

New State Of Matter

Homo Luzonensis

Café Scientifique

Most Ancient Molecule Discovered

EMISAT

First Picture of a Black Hole

Curbing Antibiotics Resistance

Genome Sequencing

Cell Based Meat

3D Printed Heart

Kandhamal Haldi Gets GI Tag

Pepsico Sues Farmers

Environment and Biodiversity

State Of The Global Climate

Global Cooling Coalition

State of Global Air

Global Assessment of Biodiversity and Ecosystem Services

Bharat Stage VI Fuel

New Data From Global Forest Watch

Security

Easter Attacks in Sri Lanka

TikTok Ban

Press Council Guidelines to Media on Poll Reporting

'Online Harms' White Paper

Iran's Revolutionary Guards

Assam Rifles

Induction Of Women In Military Police

Ballistic Missile Defence Programme

1. <u>GS PAPER 1</u>
Indian Culture And Heritage

Bharati Script

In News

- Taking cue from European languages, several of which have the same (Roman letter–based) script, a team at IIT Madras has, over the last decade, developed a unified script for nine Indian languages, named the Bharati script.

- The scripts that have been integrated include Devnagari, Bengali, Gurmukhi, Gujarati, Oriya, Telugu, Kannada, Malayalam and Tamil. English and Urdu have not been integrated so far as Urdu and English alphabet systems have a very different phonetic organisation.

- The team has also developed a method for reading documents in Bharati script using a multi-lingual optical character recognition (OCR) scheme.

- The team has created a finger-spelling method that can be used to generate a sign language for hearing-impaired persons. And in collaboration with Innovation Labs TCS, work is going on a system that can help people sign documents using a finger-spelling method and future plans include developing a new Braille system with the Bharati script.

- In general, optical character recognition schemes involve first separating (or segmenting) the document into text and non-text. The text is then segmented into paragraphs, sentences, words and letters and then each letter has to be recognised as a character in some recognisable format such as ASCII or Unicode.

- The scripts of Indian languages pose a problem for such a character recognition because the vowel and consonant-modifier components are attached to the main consonant part. This difficulty is removed in the Bharati script which can be easily read. In Bharati characters, these different components are segmentable by design, so OCR works quite accurately and the OCR engines give almost 100% accuracy even with mild noise added.

Garia Festival

In News

- **Garia puja** is a festival of Tripura usually held from the last day of the month of Chaitra till the seventh day of the month of Vaishakha (April).

- It is celebrated as a harvest festival by the ethnic tribes by offering prayers to a bamboo pole considered to be Lord Garia. The devotees also sacrifice roosters as part of the rituals.

- The puja is followed by traditional dance derived from the Garia dance or the dance of Shiva and other cultural activities. Garia dance is very popular among the Tripuris and the Reangs.

- Symbolic of the worship of deities as well as of the socio-economic activities of the households, these dances represent hunting, fishing, food-gathering and various other activities.

Saraswati Samman

In News

- Telugu poet K Siva Reddy has been conferred the prestigious Saraswati Samman, 2018, for his collection of poems titled Pakkaki Ottigilite (Turning Aside While Lying Down).

- Pakkaki Ottigilite, published in 2016, is an anthology of 104 poems in blank verse. It captures the responses of the poet over the years to social change, the evolution of his own self and his dynamic relationship with the world.

- The award, instituted by the KK Birla Foundation, is given annually for outstanding prose or poetry literary works written in any 22 Indian language listed in Schedule VIII and published during the preceding 10 years.

- The selection committee is assisted by five regional committees and 22 language committees consisting of eminent writers, scholars and critics in various languages from all parts of the country.

- It is the highest recognition in the field of Indian literature and carries a cash prize of Rs 15 lakh, apart from a citation and a plaque.

- To felicitate writers, the KK Birla Foundation has instituted three awards in the field of literature. These are the Saraswati Samman, Vyas Samman (for Hindi) and Bihari Puraskar (for Hindi and Rajasthani writers of Rajasthan).

- The inaugural award in 1991 was given to Harivanshrai Bachchan for his four volume autobiography.

World Heritage Day

In News

- World Heritage Day is an annual event celebrated on 18 April every year. It aims to preserve the human heritage and recognize the efforts of all the relevant orgnizations including scientists, archaeologists, geographers and engineers.

- This year the theme is Rural Landscapes, which is linked to the theme of the 2019 ICOMOS Scientific Symposium on Rural heritage to take place in October in Marrakesh, Morocco.

- In the year 1982, the International Council on Monuments and Sites declared 18th April as World Heritage Day to raise awareness about monuments and other sites which form a part of our history and culture.

- UNESCO approved of this day in the year 1983 and since then the day is celebrated with an aim to enhance awareness of the importance of cultural heritage of humankind, and redouble efforts to protect and conserve the human heritage.

World Heritage Site

- World Heritage site is a natural or man-made site, area, or structure recognized as being of outstanding international importance and therefore deserving special protection.

- It is selected by UNESCO and is legally protected by international treaties. The sites are judged important to the collective interests of humanity.

- To be selected, a World Heritage Site must be an already classified landmark, unique in some respect as a geographically and historically identifiable place having special scientific, cultural or physical significance (such as an ancient ruin or historical structure, building, city, complex, desert, forest, island, lake, monument, mountain, or wilderness area). It may signify a remarkable accomplishment of humanity, and serve as evidence of our intellectual history on the planet.

Rural Landscapes

- Rural landscapes are defined as terrestrial and aquatic areas co-produced by human-nature interaction used for the production of food and other renewable natural resources, via agriculture,

animal husbandry and pastoralism, fishing and aquaculture, forestry, wild food gathering, hunting, and extraction of other resources.

- They are multifunctional resources and have cultural meanings attributed to them by people and communities.

- They encompass an increasing accumulation of tangible and intangible heritage which is in constant adaptation to environmental, cultural, social, political and economic conditions and are the most common type of continuing cultural landscape.

Role Of Communities In The Conservation Of Rural Landscapes

- While the urban population rate is growing and has reached a global figure of 54.82% in 2017, the population of rural areas also continues to grow, despite its decline in terms of percentage share. This has a twofold effect in rural areas and, while some areas are being abandoned, others are suffering from human pressure.

- Furthermore, the ecological footprint that urban areas have on rural zones, and the changes in the rural landscapes that this footprint induces, as well as the consequences for both the environment and communities cannot be ignored.

- The conservation of rural landscapes puts an emphasis on the relation between heritage and society, and on the obvious and direct benefits that heritage conservation has not only on the communities that have created, modified and actually bear those rural landscapes, but also on the society whose ecological footprint these landscapes sustain.

Indian New Year

In News

- New year is celebrated all across the world on January 1. This, however, is in accordance with the Gregorian calendar. It's the harvesting season which is mostly synonymous with the new year celebrations in India.

- Being a diverse nation, new year in India is celebrated in various regions at various times of the year depending on solar or lunar calendars.

- As per the solar calendar, the new year is celebrated during the spring harvest time on April 13/14/15 as Vaisakhi or Baisakhi in north and central India, Rongali Bihu in Assam, Tamil Putthandu in Tamil Nadu, Vishu in Kerala, Bishuva Sankranti in Odisha and Poila Boishakh in Bengal.

- As per the lunar calendar, new year is celebrated in various parts of India during March/April. Ugadi is the New Year's Day for the Hindus of Maharashtra, Andhra Pradesh, Karnataka and Telangana. Gudi Padwa is celebrated in Maharashtra, Goa and Konkan belt as new year. Cheiraoba in Manipur, Navreh in Kashmir and Cheti Chand is celebrated by Sindhi Hindus as new year.

Maharshi Badrayan Vyas Samman Awards

In News

- The Vice President recently conferred around 100 President's Certificate of Honour and Maharshi Badrayan Vyas Samman Awards to scholars in Classical Languages

- At the award ceremony the Vice President also called for a national movement for promotion of mother tongue and according a sense of dignity & a sense of pride to those who speak, write and

communicate in Indian languages while harnessing the power of technology to preserve & promote country's languages

- The **Maharshi Badrayan Vyas Samman** distinction is conferred on persons in recognition of their substantial contribution in the field of Sanskrit, Persian, Arabic, Pali, Prakrit, Classical Oriya, Classical Kannada, Classical Telugu and Classical Malayalam.

- The award was introduced in the year 2002, is given to selected young scholars in the age group of 30 to 45 years. It carries a certificate of honour, a memento and a one time cash prize of Rs.1 lakh

Modern Indian History

Jallianwala Bagh

In News

- April 13, 1919, marked a turning point in the Indian freedom struggle. It was Baisakhi that day, a harvest festival popular in Punjab and parts of north India.

- Local residents in Amritsar decided to hold a meeting that day to discuss and protest against the confinement of Satya Pal and Saifuddin Kitchlew, two leaders fighting for Independence, and implementation of the Rowlatt Act, which armed the British government with powers to detain any person without trial.

- The crowd had a mix of men, women and children. They all gathered in a park called the Jallianwala Bagh, walled on all sides but for a few small gates, against the orders of the British.

- The protest was a peaceful one, and the gathering included pilgrims visiting the Golden Temple who were merely passing through the park, and some who had not come to protest.

- While the meeting was on, Brigadier-General Reginald Edward Harry Dyer, who had crept up to the scene wanting to teach the public assembled a lesson, ordered 90 soldiers he had brought with him to the venue to open fire on the crowd.

- It was not only the shooting that killed the people. Several were killed in stampedes while fleeing the spot. Around 120 bodies were fished out from the well. Many wounded, who could not move died during night.

- The firing ended only when the troops ran out of ammunition; most of the 1,650 rounds met their target, judging from the official tally of 379 dead and some 1,200 wounded.

Aftermath

- General Dyer reasoned these killings terming them as punishment for those who defied his ban on conducting public gatherings.

- Considered the 'The Butcher of Amritsar' in the aftermath of the massacre, General Dyer was removed from command and exiled to Britain with a gift of 26,000 pounds, which was a huge sum in those days.

- Rabindranath Tagore and Mahatma Gandhi, as a sign of condemnation, renounced their British Knighthood and Kaiser-i-Hind medal respectively.

Battle of Kangla Tongbi

In News

- The Platinum Jubilee of the Battle of Kangla Tongbi War was commemorated on 07 Apr 2019 by Army Ordnance Corps at Kangla Tongbi War Memorial near Imphal honouring the valiant brave

hearts of Ordnance Personnel of 221 Advance Ordnance Depot who made their supreme sacrifice in the line of duty during a battle of World War-II.

● The Battle of Kangla Tongbi, considered one of the fiercest battles of World War II, was fought by Ordnance personnel of 221 Advance Ordnance Depot (AOD) on the night of 6/7 April 1944.

● In their attempt to extend their line of communication to Imphal, Japanese forces had planned a three pronged offensive to capture Imphal and had advanced towards Kangla Tongbi. But, a small but determined detachment of 221 AOD put up stiff resistance against the advancing Japanese forces. This shook the enemy and forced the Japanese to withdraw leaving many dead.

● The Kangla Tongbi War Memorial is a mute testimony to this battle and the unflinching devotion to duty of the Ordnance personnel of 221 AOD, 19 of whom made the supreme sacrifice. It conveys to the world at large that Ordnance personnel, apart from being professional logisticians, are second to none in combat, being equally proficient soldiers, should the occasion demand.

Post-Independence

Khasi Kingdoms To Revisit Agreements

In News

● A federation of 25 Himas or Khasi kingdoms that have a cosmetic existence today, plan to revisit the 1948 agreements that made present-day Meghalaya a part of India.

● The revisiting in consultation with legal experts and academicians is aimed at safeguarding tribal customs and traditions from Central laws in force or could be enacted, such as the Citizenship (Amendment) Bill

● The 25 Khasi states had signed the Instrument of Accession and Annexed Agreement with the Dominion of India between December 15, 1947, and March 19, 1948. The conditional treaty with these states was signed by Governor General Chakravarty Rajagopalachari on August 17, 1948. The Khasi states, though, did not sign the Instrument of Merger unlike most other states in India.

● During the British rule, the Khasi domain was divided into the Khasi states and British territories. At that time, the British government had no territorial right on the Khasi states and they had to approach the chiefs of these states if they needed land for any purpose.

● After independence, the British territories became part of the Indian dominion but the Khasi states had to sign documents beginning with the Standstill Agreement that provided a few rights to the states.

● Though the Constitution has provided self-rule to a considerable extent through tribal councils, there has been an increasing demand for giving more teeth to the Khasi states.

Society

UNESCAP Report

Syllabus: Poverty and Developmental Issues

In News

• An additional annual investment of USD 1.5 trillion, equivalent to a dollar per person per day, would allow countries to achieve the Sustainable Development Goals by 2030, as per the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) annual report.

- UNESCAP is the regional development arm of the United Nations for the Asia-Pacific region, established in 1947 with its headquarters in Bangkok, Thailand. Among other things, ESCAP provides a forum for its member States to promote regional cooperation and collective action in pursuit of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs).

UNESCAP Report

- The survey, titled 'Survey 2019: Ambitions Beyond Growth', was launched by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP).
- This year's report provides a practical guide to policymakers on a critical aspect of the 2030 Agenda for Sustainable Development, that is, the cost to achieve the Goals. T
- he report shows that the investments required to build an equitable and green future for the region are largely affordable, especially considering the synergies among the Goals.

Progress on SDGs

The Asia-Pacific region is entering the fourth year of implementing the transformative UN 2030 Agenda for Sustainable Development. Despite much progress, the region is not on track to reach the 17 SDGs. Despite booming prosperity, many are getting left behind with basic needs, such as the freedom for all from hunger and poverty, ill-health and gender-based discrimination, and equal opportunity for all still being elusive.

Three Priorities In Working Towards That Future As Set Out In The 2030 Agenda

- **Ambitions Beyond Growth:** Although the Asia-Pacific region has emerged as an economic powerhouse, prioritizing GDP growth at all costs has resulted in heightened inequality and environmental degradation. We must raise our ambitions beyond just economic growth. The 2030 Agenda and its 17 SDGs provide a clear blueprint for raising our ambitions, towards putting the people and the planet first. The 2019 Survey calls upon the Asia-Pacific region to prioritize ambitions beyond economic growth and invest in human well-being and planetary health, with $669 billion needed to support basic human rights and develop human capacities, and $590 billion to secure humanity's future and live in harmony with nature.

- **Cost to achieve the Goals:** The Survey for 2019 looks at the strategic investments required to accelerate progress. It concludes that, to attain the Goals by 2030, an additional annual investment of $1.5 trillion – equivalent to 5 per cent of their combined GDP in 2018, or about 4 per cent in terms of the annual average GDP for the period 2016-2030 is required. This means that at an investment of less than $1 per person per day would enable 400 million people to escape extreme poverty and malnutrition (Goals 1 and 2); deliver a quality education for every child and youth (Goal 4); basic universal health care (Goal 3); improved access to transport, ICT, clean water and sanitation (Goals 6, 9, 11 and 17); Universal access to electricity and clean cooking (Goal 7), Climate/disaster-resilient infrastructure (Goals 9 and 13) etc.

- **Ensuring no country is left behind:** For a region as large and diverse as Asia and the Pacific, the composition of the investment gap would vary considerably across subregions and country groups. Closing the investment gap required is within reach for many countries, but the gap is widest in countries which can least afford to narrow it, including for least developed countries and small island developing States, which are the most heavily affected by climate change. To mobilize additional resources, the Survey stresses that – in addition to making public spending more efficient – the international community and the private sector need to step up. We must develop strong partnerships and regional cooperation to ensure that no country is left behind. Guided by the Regional Road Map, North-South, South-South and triangular cooperation as well as strengthened

multilateral financing mechanisms will be essential to accelerating the pace of sustainable development.

Raising The Resources:

In general, fiscal policy should play a more proactive role in supporting near- and long-term development needs, from social expenditures to infrastructure outlays and climate action. The report said innovative financial instruments such as green bonds and promoting new investor classes can help leverage the massive USD 51 trillion in assets managed by the private financial sector in the developing Asia-Pacific (APAC) region. In addition, there is considerable potential to raise tax revenues in the region.

Conclusion

The Survey calls for a holistic policy focus on the pillars of sustainable development and outlines a path towards a prosperous and inclusive future, serving as a basis for dialogue, not only among policymakers, but also academia and civil society. Importantly, it makes a comprehensive assessment of the investment needed to reach the SDGs in the region by 2030, and provides tools for policymakers to translate ambitions into actions. Leadership will be crucial in making the transition to a development strategy that balances all dimensions of human and planetary well-being.

Green Urban Areas

Syllabus: Urbanization, Their Problems, and Their Remedies

In News

- A National Seminar on Greenery and Landscaping was recently organized by the Central Public Works Department (CPWD), as a part of its continued effort for green and clean sustainable development.
- Horticulturists, architects and engineers from within CPWD and from other government and private organizations participated in the seminar.

Recommendations

- Green Urban Areas play an important role in the social and natural sustainability, improve quality of life, have a major impact on the conservation of energy and reduce the energy requirement of the building. Hence, in order to maintain a sustainable environment, pollution free clean air, it is essential to take up plantation work.
- Cost of land has increased manifold and there is hardly any area for greenery in urban areas. Hence, plantation, greenery and other environment friendly applications should be planned around the building by way of dwarf trees, small shrubs, ground covers, hanging baskets and creepers.
- There is a need to adopt wood alternatives in building construction and use of alternate materials like bamboo needs to be encouraged.
- Orientation and proper training should be imparted to people engaged in landscaping and horticulture, for implementation of new technologies in this field to save labour and cost of the project in long run.
- Emphasis should be given for conserving and transplanting indigenous and grown up trees. At the same time, herbal and medicinal plants need to be encouraged.
- Water conserving irrigation method like drip irrigation, sprinkler irrigation and pop up system needs to be adopted along with the use of organic manure.

● Green initiative needs to be taken up on a mission mode by every nation, city, society and individual so that future generations may lead a happy and a healthy life.

Need for Green Urban Spaces

● Green Urban spaces such as parks and sports fields as well as woods and natural meadows, wetlands or other ecosystems, represent a fundamental component of any urban ecosystem. They facilitate physical activity and relaxation, and form a refuge from noise.

● Urban parks and gardens play a critical role in cooling cities, and also provide safe routes for walking and cycling for transport purposes as well as sites for physical activity, social interaction and for recreation. Recent estimates show that physical inactivity, linked to poor walkability and lack of access to recreational areas, accounts for 3.3% of global deaths.

● Having access to green spaces can reduce health inequalities, improve well-being, and aid in treatment of mental illness. Some analysis suggests that physical activity in a natural environment can help remedy mild depression and reduce physiological stress indicators.

Resilient Cities Asia-Pacific 2019 Congress

Syllabus: Urbanization, Their Problems, and Their Remedies

In News

● The 4th Resilient Cities Asia-Pacific 2019 Congress was recently organised by ICLEI – Local Governments for Sustainability and hosted by South Delhi Municipal Corporation in New Delhi.

● Resilient Cities is the annual global platform for urban resilience and climate change adaptation. It is convened by ICLEI and co-hosted by the World Mayors Council on Climate Change and the City of Bonn and was launched in 2010 with the goal of forging partnerships and dialogues that matter.

● It offered a combination of high-level plenaries and technical sessions on the implementation and achievement of the Sustainable Development Goals, the Nationally Determined Contributions (NDCs), and the New Urban Agenda of 2016, while at the same time brought together experts and practitioners who shared their experiences and encouraged cities to take action on resilience.

● The main target of the event were local governments in the Asia Pacific region. National and local governments were brought together to discuss the opportunities and mechanisms of implementing the SDGs and NDCs. The outcomes will be presented in the NDC Conference to be held in Berlin in June this year.

Objectives Of The Conference

● Share and learn about good urban resilience practices and show-case innovative ideas, solutions and initiatives.

● Provide local governments with exposure and access to tools and processes that help mainstream resilience considerations into policy and practice.

● Provide a networking platform to promote concerted and coordinated action in Asia among the main players in the field of urban resilience.

● Explore tangible opportunities for creating partnerships between local govts and the private sector

● Bring together funders and cities and facilitate the match-making between available financial resources and current cities' needs.

Need For the Asia Pacific Forum

● The Asia-Pacific Forum on Urban Resilience and Adaptation - Resilient Cities Asia Pacific Congress (RCAP) is a response to heightened demand from the Asia Pacific Region, which encouraged ICLEI

to expand the congress series to include Resilient Cities Asia-Pacific, bringing the event and the focus to the Asia-Pacific region, catering to the situation, challenges and opportunities of local governments specifically in this region.

● Current changes in climate, combined with rapid and often unplanned urbanisation, make Asia one of the regions of the world most vulnerable to the impacts of climate change.

● Increasing temperatures, changing precipitation patterns, intensification of extreme weather events and rising sea levels are already a reality in the region. At the same time, increasing population and spreading of human settlements in low lying, flood prone coastal areas magnify the risks coming from climate change related disasters, thus increasing the vulnerability of people, especially the urban poor, who live in hazardous areas.

ICLEI

● ICLEI – Local Governments for Sustainability, founded in 1990 as the International Council for Local Environmental Initiatives, is a global network of cities, towns and regions committed to building a sustainable future.

● The international network was established when more than 200 local governments from 43 countries convened at its inaugural conference, the World Congress of Local Governments for a Sustainable Future, at the United Nations in New York in 1990. Today, the ICLEI network includes more than 1,750 local and regional governments in 100+ countries.

2. GS PAPER 2
Constitution, Polity, And Governance

Egypt's Constitutional Changes

Syllabus: Comparison of the Indian constitutional scheme with that of other countries

In News

- Egypt held a three-day referendum on constitutional amendments.

- The changes would *allow Egyptian President Abdel-Fattah el-Sissi* to potentially stay in **office until 2034**.

- It would also bolster the role of the military and expand the president's power over judicial appointments.

Background

- Parliament of Egypt had approved these amendments in February 2019.

- Once passed from Parliament, these changes **must be approved by a referendum** to enter into force.

Key Amendments

A. The Presidency

- The most significant amendment **extends presidential terms from four to six years** while **technically maintaining the two-term cap** stipulated in the current charter.

- However, a "**transitional article**" has been introduced, applying exclusively to el-Sissi.

- This would allow him to be elected for **two more six-year terms** after his current, *second term expires in 2022*.

- The amendments also introduce a role for one or more vice presidents.

B. The Military

- The amendments declare the country's military "**guardian and protector**" of the Egyptian state, democracy, the constitution and the civil nature of the state.

- It also grants **military courts wider jurisdiction** in trying civilians.

- The amendments also enshrine **veto power for Egypt's Supreme Council of the Armed Forces over choice of defense minister**, a role that had been set to expire with el-Sissi's second mandate.

- It guarantees a lasting political role for the military in state policies.

C. The Judiciary

- It gives the president a **large measure of control over the judiciary**, empowering him to appoint top judges, including the head of the Supreme Constitutional Court.

- It also put him at the **head of a new council**, presiding over judicial affairs.

- The changes **largely remove judicial review of legislation**, until now a power held by State Council judges.

- Such a review **would only be allowed if requested by Parliament** or the government.

D. Parliament Chambers And Representation

- Other amendments include reforming the Parliament and bringing back a lower chamber, or Senate, with mainly an advisory role.

- The Senate would have a **minimum of 250 members**, with **two thirds elected directly** and the **remainder appointed by the president**.

- In the upper, legislative chamber which is to have a **minimum of 450 elected lawmakers**, a <u>25 percent quota is allotted for women</u>.

- The proposals also assure "**adequate" representation** for <u>workers, farmers, youth and people with special needs in the legislature</u>.

Analysis

- In view of Egypt's catastrophic transformation after the 2013 military coup, these drastic changes could generate further deterioration as al-Sisi tailors the <u>political system around himself</u>.

- Mandate of Military has been so redefined that even a coup against an elected government could be legitimized.

- The 2014 constitution granted the armed forces an unprecedented degree of autonomy and shielded them from civilian control. The planned amendments would cement the military's position as the sacrosanct centre of the political order even further.

- Egypt's judiciary has had a relatively high degree of independence for decades. The planned constitutional amendments would undermine this and strengthen executive control.

- Many fear that the changes will *further limit the space for dissent after a wide-ranging security crackdown*.

National Court of Appeal

Syllabus: Structure, organization, and functioning of Judiciary and Related Issues

In News

- The manifesto of the Indian National Congress (INC) has a section on the Judiciary, which promises, among other things, to make the Supreme Court (SC) a Constitutional Court that will hear and decide cases involving the interpretation of the Constitution. It also promises to establish a new **Court of Appeal (Cessation benches)** that would sit in multiple Benches of 3 judges each in 6 locations and hear civil and criminal appeals from the High Courts (HC).

- The world's first constitutional courts were set up in Europe at **Austria in 1920** and in Germany after World War II. Today, **55 countries** have constitutional courts, including most European or civil law jurisdictions.

Arguments In Favour Of Constitutional Court And Cessation Benches

- *Initial role:* In the early decades of the Republic, the SC, too, functioned largely as a constitutional court, with some 70-80 judgments being delivered every year by Constitution Benches of five or more judges who ruled, as per **Article 145(3),** on matters involving a **substantial question of law** as to the interpretation of the Constitution. This number has now come down to 10-12. Due to their heavy workload, judges mostly sit in two or three judge Benches to dispose of all kinds of cases.

- *Leads to large pendency:* More than **65,000 cases** are pending in the SC and disposal of appeals takes many

Legal/Constitutional provision

Article 130 says that the Supreme Court shall sit in Delhi or in such other place or places, as the Chief Justice of India may, with the approval of the President, from time to time, appoint.

years. Several cases involving the interpretation of the Constitution by five or seven judges have been pending for years.

- ***Also suggested by LCI:*** The **Tenth Law Commission of India (95th Report)** under Justice K K Mathew recommended that the SC should consist of two Divisions, namely (a) Constitutional Division, and (b) Legal Division, and that only matters of Constitutional law may be assigned to the proposed Constitutional Division. The **Eighteenth Law Commission** under Justice A R Lakshmanan **(229th Report, 2009)** recommended that a Constitution Bench be set up at Delhi to deal with constitutional and other allied issues and four **Cassation Benches** be set up in the Northern region/zone at Delhi, the Southern region/zone at Chennai/Hyderabad, the Eastern region/zone at Kolkata and the Western region/zone at Mumbai to deal with all appellate work arising out of the orders/judgments of the HCs of the particular region.

- ***Legal access:*** **Article 39A** says that the state shall secure that the operation of the legal system promotes justice, on a basis of equal opportunity and shall ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities. Indeed, travelling to New Delhi or engaging expensive SC counsel to pursue a case is beyond the means of most litigants.

- ***International practice:*** Many countries around the world have Courts of Cassation that decide cases involving non-Constitutional disputes and appeals from the lower level of courts. These are courts of last resort that have the power to reverse decisions of lower courts.

Arguments Against Constitutional Court and Cessation Benches

- ***SC view:*** Standing Committees of Parliament recommended in 2004, 2005, and 2006 that benches of the court be set up elsewhere. But the SC has not agreed with the proposal, which in its opinion would dilute the prestige of the court.

- There is also a concern regarding sharing of power under **Article 136** with inferior court.

- ***Focus on lower courts:*** Legal experts say that the focus should be on Court of first instance *i.e.* trail court to reduce need for approaching higher courts.

- ***Create one more level:*** The establishment of such court will add one more level of adjudication rather than systemically solving the problem.

Way Forward

To deal with the backlog of cases, there is need for systemic changes like more number of changes, implementing National Litigation policy rather than creating a new system.

Issue of Judicial Accountability

Syllabus: Structure, organization, and functioning of Judiciary and Related Issues

In News

- The manner in which the Supreme Court (SC) responded on the judicial side to allegations of sexual harassment made by a former employee against the Chief Justice of India (CJI) has raised issue both of Judicial independence and accountability.

- An issue was taken up by a special Bench constituted by CJI Ranjan Gogoi, comprising himself (in violation of principle of natural justice), Justice Arun Mishra and Justice Sanjiv Khanna.

> **Natural justice** comprises two things:
>
> 1. Rule against bias (*nemo iudex in causa sua*) i.e. no one should be judge in his own case
>
> 2. The right to a fair hearing (*audi alteram partem*) i.e. no one should be punished without being heard.

- On a mention by the Solicitor-General, it was listed as **'Re: Matter of Great Public Importance Touching upon the Independence of the Judiciary'**.

Current Provisions For Inquiry And Removal Of Judges

- ***Constitutional procedure:*** A judge of the Supreme Court cannot be removed except by an order of the President passed after an address by each House of Parliament supported by a majority of the total membership of that House and by a **majority of not less than two-thirds** of the members of that House present and voting has been presented to the President in the **same session** for such removal on the ground of **proved misbehaviour or incapacity**.

- ***Meaning of misbehaviour:*** The Constitution does not define 'misbehaviour' and 'incapacity'. But the **Judicial Standards and Accountability Bill, 2010**, which tried to lay down enforceable standards of conduct for judges, proposed to widen the definition of 'misbehaviour' by including corruption or lack of integrity, which has the effect of subverting the administration of justice. Failure to declare assets and liabilities, or willfully giving false information are also included within the definition of misbehaviour.

- ***Code of conduct:*** In 1997, SC circulated a document titled **'Restatement of Values of Judicial Life'**, a guide containing the essential elements of ideal behaviour for judges so that their independence and impartiality are beyond reproach. The Full Court passed a resolution that an 'in-house procedure' would be adopted for action against judges for acts of commission or omission that go against accepted values of judicial life.

- ***In-house procedure:*** Allegations of misconduct against serving judges of the superior judiciary are dealt with through an 'in-house procedure'. The allegations are examined by the judge's peers, outside agencies are kept out. This on one hand ensure independence of the judiciary and at same time preserve the faith of the people in the impartiality and independence of the judicial process.

> **Judicial Standards and Accountability Bill, 2010**
>
> - Judges will be required to declare their assets and liabilities, and also that of their spouse and children.
>
> - The Bill establishes the National Judicial Oversight Committee, the Complaints Scrutiny Panel and an investigation committee. Any person can make a complaint against a judge to the Oversight Committee on grounds of 'misbehaviour'.
>
> - A motion for removal of a judge on grounds of misbehaviour can also be moved in Parliament. Such a motion will be referred for further inquiry to the Oversight Committee.
>
> - Complaints and inquiries against judges will be confidential and frivolous complaints will be penalized.
>
> - The Oversight Committee may issue advisories or warnings to judges and also recommend their removal to the President.

- ***The possible outcomes of the inquiry committee:*** If inquiry committee finds that there is substance in the allegations, the committee can hold that the misconduct is serious enough to warrant removal from office. This calls for initiation of proceedings to remove the judge. The judge concerned would be advised to resign or take voluntary retirement. If the judge is unwilling to quit, the Chief Justice of the High Court concerned would be advised to withdraw judicial work from him, and the President of India and the Prime Minister would be informed of the situation. Such an action may clear the way for Parliament to begin the political process for impeachment. In case, the committee finds substance in the allegation, but it is not grave enough to warrant removal from office, the judge concerned would be advised accordingly.

Final Analysis/Way Forward

- While judges indeed require powerful protection against motivated accusations, due process demands that an expeditious, thorough, fair and impartial probe is carried out in the matter. The

extraordinary developments at the country's highest seat of justice offer an opportunity to revisit some larger questions around judicial accountability.

- To place judicial performance beyond scrutiny would be myopic. Power without responsibility is the anti-thesis of constitutionalism. Accountability of public officials, including judges, is the very essence of a mature democracy.

- By ensuring judicial accountability it will promotes at least three discrete values: the rule of law, public confidence in the judiciary, and institutional responsibility.

Prison Violence And Problems Faced By Undertrials

Syllabus: Structure, organization, and functioning of Judiciary and Related Issues

In News

- A Delhi court has pulled up the prison authorities for failing to respond to charges levelled by an undertrial. The undertrial has alleged that the jail superintendent branded 'Om' on his back with hot metal and said he would convert him to Hinduism.

- Earlier, the SC had constituted **Justice Amitava Roy Committee** for suggesting prison reform. The panel will also probe the reasons for violence in prisons and correctional homes and recommend preventive measures.

Issues Faced by The Undertrials

- *Overcrowding of prisons and inadequacy of prison staff:* According to the National Criminal Records Bureau's **Prison Statistics 2015**, the occupancy rates of jails in India is more than 150 %

- *Lack of legal aid:* Many undertrials are unaware of their rights and cannot afford legal aid or to appoint legal representative.

- *Prison violence:* Another complaint is the brutality & venality of prison officials against the prison inmates.

- *Sanitation, unhygienic food and health problems:* There are no serious effort being taken to protect these basic human rights of the prisoners.

- *Women prisoners:* There are cases of sexual violence, especially against the women prisoners, leading to possible HIV/STD cases.

Way Forward

- The recommendations of the **A N Mulla Committee** and the **V R Krishna Iyer Committee** for Women Prisoners in the 1980s proved to be the harbinger of reforms in some prisons in the country, including Delhi's Tihar Jail.

- But as the recent cases in Delhi show, the working of these reforms hinge on the sensitivity of the jail personnel. They would do well to go back to the basic principle enshrined in most prison manuals, for providing basic minimum facilities to maintain human dignity.

First Past The Post System

Syllabus: Elections and Representation of People's Act

In News

- In the run up to the Lok Sabha election some of the experts have called for the replacement of the first past the post system (FPPS) with the proportional representation system (PRS).

- Due to FPPS system, the groups of parties, which managed to get less than 50% of the total votes polled in 2014 election had managed to get more than 75% of the total seats in the Parliament.

About First Past The Post System And Proportional Representation

- *About FPPS:* In FPPS the country is divided into constituencies and the candidate securing maximum number of votes wins the election.

- *About PRS:* In PRS, the country may or may not be divided into constituencies and the available seats are allocated to contesting parties in the proportion of votes won by them.

Benefits of FPPS/Disadvantages of PRS

- *Stability:* FPPS has been known for providing stability in the electoral system of India. Thus, assures stable terms for the party in power, with the requisite numbers in the House to ensure implementation of its policies.

- *Tried and tested system:* The FPPS is used not just in India, but also many other major democracies like the **US, UK and Canada**. Moreover, since the Indian system is so much inspired from these three, it is not surprising that the Indian framers went for a more tried and tested system.

- *Simple:* FPPS is also useful because it is simple to use and easy to understand. Thus, makes it uncomplicated.

- *Assess individual candidate:* FPPS allows voters an opportunity to assess the performance of a candidate rather than having to accept a list of candidates presented by a party, as under the PRS.

- *Better focus on constituency:* It also ensures that there is a link between a constituency and its representative in the legislature and incentivizes representatives to serve their constituents well.

Benefits of PRS/Disadvantages of FPPS

- *Exclusion of smaller parties:* The principal criticism leveled against the FPPS is that it leads to the exclusion of small or regional parties from the Parliament.

- *Not true representative:* There is common discrepancy in the vote share and seat share in results. **For ex-** in 2014 election, NDA won only 31% of the total votes cast and therefore 69% of those who voted did not vote in favor of it.

- *Encourages election vices:* FPPS often encourages caste, religion, ethnicity and regional politics.

- *Low election expenditure:* In FPPS the election expenditure is higher, this leads to issue such as higher corruption *etc.*

Way Forward

Both electoral systems have their own merits and demerits. Thus, it is suggested from the experience of other countries to follow a **hybrid pattern** combining elements of both the system.

Model Code of Conduct

Syllabus: Elections and Representation of People's Act

In News

- Recently, there has been perceptions that the ECI has responded inadequately to violations of the Model Code of Conduct (MCC).

- Some examples in this election include the Prime Minister's announcement on national television of India's first anti-satellite weapon test, the Rajasthan Governor making statements in favour of the ruling party, leaders of the ruling party invoking the Indian Army in their election campaign *etc.*

About MCC

- **Aim:** The MCC is a unique Indian innovation for free and fair conduct of elections.

- **About MCC:** It is a set of guidelines though not law, providing a list of do's, don'ts and direction for the government functionaries, parties and candidates during the election process.

- **Enforcement date:** It comes into force when the ECI announces election dates and remain in force till the election result.

- **Some of the examples of MCC directions:** Important provisions include barring governments from making policy announcements to sway voters and restraining political actors from inciting hatred against any group or bribing or intimidating voters.

Contents of MCC

- Part I: Deals with general precepts of good behaviour expected from candidates and political parties.

- Parts II and III: Focus on public meetings and processions.

- Parts IV and V: Describe how political parties and candidates should conduct themselves on the day of polling and at the polling booths.

- Part VI: It is about the authority appointed by the EC to receive complaints on violations of the MCC.

- Part VII: It is on the party in power.

- Part VIII: It is on manifestos.

Lacunas In the MCC

- **Lack of deterrence effect:** It is often seen that there has been flagrant violation of MCC and EC has failed to respond adequately.

- **Impact developmental activities:** There is often a complaint that the MCC comes in the way of developmental activities as no new development initiative can be launched.

- **Legal backing:** Many experts have suggested that the reprimand, restriction imposed by the EC are not sufficient and there is a need for statutory backing for MCC.

- **Capacity of ECI:** ECI lacks adequate monetary and fiscal resources to adequately monitor MCC.

- **Inadequate power:** The EC does not have the power to disqualify candidates who commit electoral malpractices. At best, it may direct the registration of a case. Moreover, the EC also does not have the power to deregister any political party.

- **Absence of appeal mechanism:** Parliamentary Standing Committee is of the opinion that there is absence of an immediate appeal mechanism against the wrongful decision of Returning Officer/ECI.

Way Forward

The current mechanism for enforcement of MCC is adequate but at the same time there is a need for strengthening the institution of ECI as a whole.

HC Upholds President's Decision To Cancel Vellore Poll

Syllabus: Elections and Representation of People's Act

In News

The Madras High Court (HC) at a special sitting dismissed two writ petitions filed against the President's decision to rescind the poll notification for the Vellore parliamentary constituency in the wake of complaints of large-scale distribution of cash to voters.

Process Of Rescinding The Poll

- **Petitioner's contention:** The Petitioner claimed that the constitution does not confer upon the President any power to countermand an election and therefore, a gazette notification issued by the

- **Union Ministry of Law and Justice** notifying the decision of the President to rescind the poll notification should be declared *ultra vires.*

- *Legal provisions:* The EC has power to make recommendation for countermanding the polls to the President by exercising powers conferred on it under **Article 324** of the Constitution, **Section 21** of the General Clauses Act of 1897 and other enabling powers aimed at ensuring the conduct of free and fair elections.
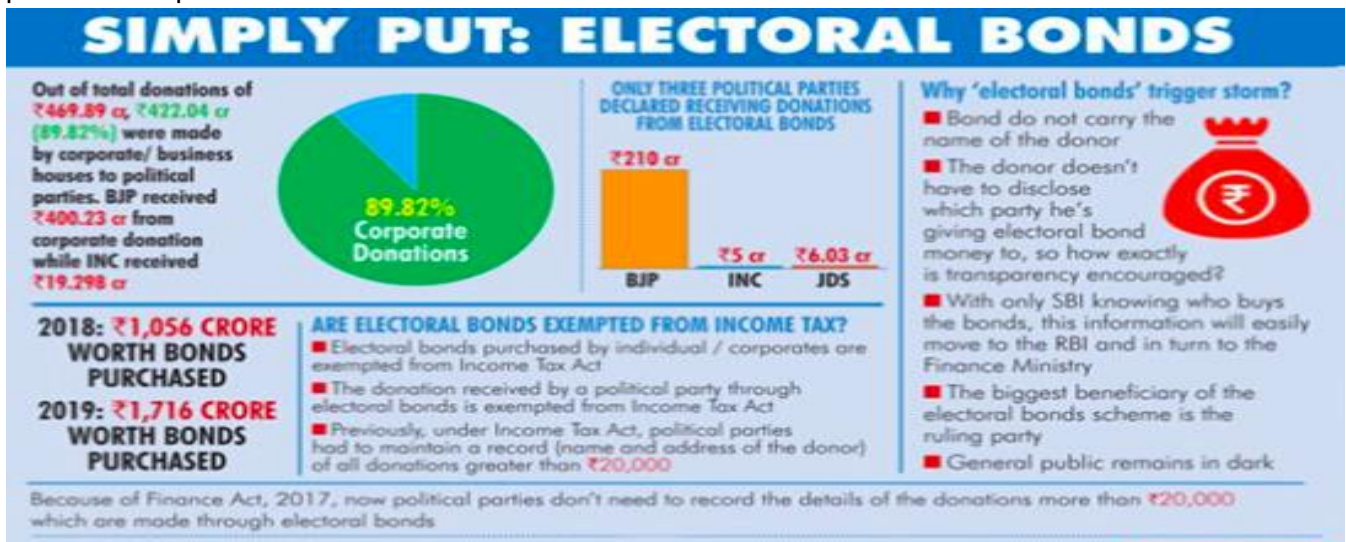
In Countermanding the election are re-held for all the booths in the constituencies, while in repoll the reelection are held for some of the booths in the constituencies.

- *HC's decision:* HC held that since it was the President who had notified the polls on 19th March 2019 on the basis of a recommendation made by the EC and by exercising powers conferred on him under **Section 14** of the Representation of the People Act of 1951, he was right in partially rescinding the notification on the basis of EC's subsequent recommendation.

- *Rationale decision:* Moreover, the decision to rescind the poll notification for Vellore was not taken overnight and was, in fact, a well thought out decision taken on receipt of multiple reports from the IT department, two Expenditure Observers, and the Chief Electoral Officer.

Electoral Bond Scheme

Syllabus: Elections and Representation of People's Act

In News

Recently, the Central Government's Electoral Bond Scheme has been challenged by the CPI(M)'s petition in Supreme Court.

Arguments In Favour Of The Scheme

- *Transparency:* Some experts says that the scheme enhances transparency in political funding.

- *Reduce black money:* Under the Scheme the use of bank routes would reduce under-the-table cash transactions, thus reduce the black money in the economy. Moreover, as the transactions through banks would incentivise the use of white money and KYC requirements of banks would ensure paper trails.

- *Privacy:* The Scheme also protects the privacy of donors, which is the fundamental right guaranteed under the Constitution.

- *Non-victimization of the donor:* The non-disclosure of the identity of the donor safeguard the donor from political victimization.

- *Enforcement action possible:* The records of the purchaser are always available in the banking channel and may be retrieved as and when required by enforcement agencies.

Arguments Against The Scheme

- *Lack of transparency:* Under the scheme, both the purchaser of the bond and the political party receiving the money have a right to not disclose the identity of the donor.

- *Outside public scrutiny:* Only public sector banks can issue the bonds, thus transaction will be outside the scope of public scrutiny and it will lie exclusively with the banks.

- *Removal of various safeguards:* The scheme dismantles several restrictions that checked illegal corporate sponsoring previously. **For example**, any artificial juridical person can now make donations. This means that even **foreign donations are now allowed**.

- *Foreign influence:* The Commission also flagged the issue of laws being changed to allow political parties to receive contributions from foreign companies, which would allow unchecked foreign funding of political parties that could lead to Indian policies being influenced by foreign companies.

- *Fear of black money:* The requirement that a company has to be in existence for **three years** for it to make political donations has also been removed. This ignores all the concerns regarding the use of shell companies to siphon black money into the system.

- *No oversight of EC:* **Section 29(C)** of the Representation of People Act, 1951, requires every political party to submit an annual report to the Election Commission about details of contributions in excess of **Rs 20,000**. This requirement has been done away with in the case of electoral bonds through an amendment.

- *EC's contention:* As the information on the money received through such bonds is not reported, it cannot be ascertained whether the political party has taken any donation in violation of provisions of the Representation of the People Act, which prohibits the political parties from taking donations from government companies and foreign sources.

- *Corporate-political nexus:* The requirement to disclose in the profit and loss account the name of the political party to which a donation has been made, has also been removed. Moreover, with the removal of the **7.5% cap** on the net profits of the last **three years** of a company, corporate funding has increased manifold, as there is now no limit to how much a company, including loss-making ones, can donate. This opens up the possibility of companies being brought into existence by unscrupulous elements primarily for routing funds to political parties through anonymous and opaque instruments like electoral bonds.

Way Forward

The policy on electoral bonds thus needs to recognize the complementary nature of the rights to privacy and information, namely, to make the state more accountable.

A Crisis Of Credibility For EC

Syllabus: Constitutional/Statutory/Regulatory/Quasi-Judicial Bodies

In News

On April 8, 2019 in a letter to the President of India, a group of retired bureaucrats and diplomats, in the context of recent incidents, expressed concern over the Election Commission's (EC) weakened conduct and the institution suffering a crisis of credibility.

Points Of Concern In Respect Of ECI

- *Appointment process:* The appointment to EC is made by the executive whims and fancies, without having an independent body as in case of other appointments like Information Commissioners, Lokpal *etc.*

- *Tenure security:* Currently only, Chief Election Commissioner (CEC) has security of tenure and not other two Election Commissioners (ECs). Thus, only the CEC is protected from being removed except through impeachment.

- *Fear of executive interference:* There is absence of legal provision or government resolution regarding the fact that the senior most EC should be automatically elevated as CEC.

- *Budget:* The budget of the ECI is not a charged expenditure, but is voted by the Parliament.

- *Lack of power over political parties:* The EC despite being the registering authority under **Section 29A** of the Representation of the People Act, 1951, it has no power to de-register parties, even for the gravest of violations.

- **Article 324** of the Constitution provides for vesting of the power of superintendence, direction and control of elections with the Election Commission.

- The superintendence, direction and control of the preparation of the electoral rolls for, and the conduct of, all elections to Parliament and to the Legislature of every State and of elections to the offices of President and Vice-President held under this Constitution, including the appointment of election tribunals for the decision of doubts and disputes arising out of or in connection with elections to Parliament and to the Legislatures of States shall be vested in a Commission viz. Election commission.

Way forward

- Elections are the bedrock of democracy and the EC's credibility is central to democratic legitimacy. Hence, the guardian of elections itself needs urgent institutional safeguards to protect its autonomy.

- There is a need for depoliticizing appointments through a broad-based consultation, as in other countries. In its **255th report**, the Law Commission recommended a collegium, consisting of the Prime Minister, the Leader of the Opposition and the Chief Justice of India.

- Further, the system of removal of Election Commissioners also needs correction.

Government Wants Powers To Probe Complaints Against Information Commissioners

Syllabus:Constitutional/Statutory/Regulatory/Quasi-Judicial Bodies

In News

The proposal to inquire into complaint against Chief Information Commissioner (CIC) and Information Commissioners (ICs) has been seen by the Central Information Commission as an attempt to erode its independence and undermine its role as per the Right To Information (RTI) law.

Proposal For Inquiry

- The government has proposed setting up bureaucrat-led committees that would sit and decide on complaints against the CIC and ICs.

- For the former, the committee is proposed to include the Cabinet Secretary; Secretary, DoPT; and a retired CIC. For ICs, the committee will include Secretary (Coordination) in the Cabinet Secretariat; Secretary, DoPT; and a retired IC.

Grounds of Removal of CIC and ICs

Section 14(3) lists the grounds for removal which includes:

- if he/she is adjudged an insolvent,

- has been convicted of an offence which involves moral turpitude

- engages during his/her term of office in any paid employment outside

- Is unfit to continue in office by reason of infirmity of mind or body

- or has acquired such financial or other interest as is likely to affect prejudicially his functions as the CIC or an IC.

- The findings of the committee would be submitted to the President. If he is of the opinion there are reasonable grounds for inquiry, he would refer it to the Chief Justice of India (CJI), who may nominate a SC judge to conduct an inquiry.

The Negative Implications

- *Political interference:* A committee with majority bureaucrats scrutinizing complaints against ICs will skew checks and balances in favour of the political executive.

- *Impact independence:* This proposal is an attempt by the political dispensation to influence the working of the ICs. This will take away the independence of an institution that has served the citizen's demand for more transparency in the government. It will also make the Commission more vulnerable to government pressure.

- *Against provisions of RTI Act:* Section 14(1) of RTI Act insulates CIC/ICs, saying they can be removed only by the President after the Supreme Court, on a Presidential reference has, on inquiry, called for the removal.

- *Mechanism already established:* As of now, when there is a complaint against any ICs, the convention is to place it in the Commission's meeting. It has been the practice that CIC attends to complaints against ICs and if there is a complaint against the CIC, it is attended to by the sitting IC.

World Summit on the Information Society Awards

Syllabus: Important aspects of governance, transparency and accountability (e-governance, RTI etc)

In News

- Two schemes of the West Bengal government **Utkarsh Bangla and Sabooj Sathi** have won the prestigious World Summit on the Information Society (WSIS) awards of the United Nations.

- Out of 1062 nominations in 18 categories, Utkarsh Bangla got the topmost award and emerged a winner in Capacity Building category, while Sabooj Sathi ranked in the first five as a champion project under ICT application: E-Government category.

- The West Bengal government had received another UN award in 2017 for its Kanyashree project, a targeted conditional cash transfer scheme aimed at promoting education among girls.

- The Utkarsh Bangla project aims at creating a pool of 6 lakh skilled candidates every year who are industry ready.

- Under the Sabooj Sathi scheme, bi-cycles are distributed to students between class IX and XII studying in government run and government aided schools and madrasas of the state. The project has had a far-reaching effect and has drastically reduced the number of dropouts in schools, particularly in the rural areas and facilitated a major step towards women empowerment.

WSIS

- The **World Summit on the Information Society** (**WSIS**) was a two-phase United Nations-sponsored summit on information, communication and, in broad terms, the information society that took place in 2003 in Geneva and in 2005 in Tunis.

- One of its chief aims was to **bridge the global digital divide separating rich countries from poor countries** by spreading access to the Internet in the developing world. The conferences established 17 May as World Information Society Day.

- WSIS prizes is an international contest to create an effective mechanism to evaluate and recognise individuals, governments and private bodies for outstanding success in implementing development oriented strategies that leverage the power of ICT as an enabler of development.

● The contest is open to all stakeholders: governments, private sector, civil society, international organizations, academia, and others. The 18 prize categories are linked to the WSIS Action Lines outlined in the Geneva Plan of Action.

● The first WSIS prizes were awarded in 2012 and have been awarded each year thereafter.

SC Upholds Right To Information Over Official Secrets Act

Syllabus: Important aspects of governance, transparency and accountability (e-governance, RTI etc)

In News

• The Supreme Court (SC) dismissed the government's plea to declare the Rafale jets' purchase documents a secret, while upholding the right of free speech of The Hindu to publish the defence papers in a series of articles since February 2019.

• With this, the court dismissed preliminary objections raised by the government against petitions seeking a review of the December 14, 2018 judgment of the SC, which upheld the deal for purchase of 36 Rafale jets.

• The court would now hear the Rafale review petitions on merits. It would examine the pleas on the basis of three published documents.

Decision of the SC

• ***Freedom of expression:*** The Hindu's right to publish the Rafale documents was in consonance with the constitutional guarantee of freedom of speech.

• ***No protection under OSA:*** The SC rejected the government argument that stolen documents came under the protection of the Official Secrets Act, 1923 (OSA). Thus, they were not admissible in evidence in a court of law. Thus, the SC said neither OSA nor any other law empowers the government to stop the media from publishing the documents nor the court from examining them.

• ***RTI supersedes OSA:*** SC further reasoned that the Right to Information (RTI) Act has superseded the colonial OSA of 1923. RTI Act mandates disclosure of even secret government records in the greater public interest under **Section 8(2)**. Moreover, **Section 24** of the Act provides that allegations of corruption as well as human rights violations should not be exempted from disclosure under the law.

Final Analysis

The SC has consistently expanded and enlivened the citizen's right to scrutinize government decision-making and sought to ensure that those who expose corruption and wrongdoing are not vulnerable to intimidation. Thus, the Court verdict should be seen in this light.

Supreme Court On RBI's Disclosure Policy

Syllabus: Important aspects of governance, transparency and accountability

In News

• The Supreme Court (SC) gave the Reserve Bank of India (RBI) a last opportunity to withdraw a **Disclosure Policy, 2016** to the extent to which it stonewalls revelation of every other kind of information under the **Right to Information Act**, including the list of wilful defaulters and annual inspection reports.

• A Bench of Justices L. Nageswara Rao and M.R. Shah found the policy of the Central Bank to be directly contrary to the court's judgment of December 2015.

Timeline On Disclosure Norms

- In 2011, the Central Information Commission noted that the public has the right to know how banks are functioning, and directed the RBI to disclose the names of banks that had been penalized or served show-cause notices. The RBI was ticked off by the CIC for failing to uphold the interest of the public and not fulfilling its statutory duty to depositors, the economy and the banking sector, by privileging individual banks' interests over its obligation to ensure transparency. However, the central bank refused the information on the grounds of protecting fiduciary and commercial interests.

- In *RBI v/s Jayantilal N. Mistry case, 2015*, the Supreme Court noted that the RBI could not withhold information sought under the RTI Act on the grounds of economic interest, commercial confidence, fiduciary relationship or public interest. The court had also observed that there was no fiduciary relationship between the RBI and the financial institutions.

- In November 2016, RBI came up with a disclosure policy that allowed departments to withhold certain information related to banks under the RTI Act, including the list of wilful defaulters and annual inspection reports (containing critical assessment of the functioning of banks and financial institutions).

RBI's Arguments For Non-Disclosure Of List Of Willful Defaulters

- *Twin challenge:* RBI has claimed that it involves risk to the country's economic interest and its fiduciary relationship with lenders/bankers to avoid sharing information on the largest defaulters with RTI applicants.

- *Violate banking secrecy law:* The RBI has resisted disclosure of defaulters on the ground that it would violate banking secrecy laws.

- *Trust issues and general impact:* The RBI also believe that will weaken the trust among depositors and impact the financial markets and stocks of listed banks.

- *Impact ongoing probe:* The RBI had also reasoned that any disclosure of information might jeopardize probe against defaulters.

Arguments In Favour Of Disclosure

- *SC also backed:* The Supreme Court (SC), in its 2015 order, mandates disclosure of names of the willful defaulters.

- *Legally mandated:* The RBI is liable to provide information regarding inspection report and other documents to the general public. Thus, the central bank should comply with the provisions of the RTI Act, which mandate disclosure of public information.

- *No fiduciary relationship:* The RBI has no legal duty to maximize the benefit of any public sector or private sector bank and thus there is no relationship of trust between them. The SC also endorsed the same in 2015, when it held that the RBI is clearly not in any fiduciary relationship with any bank.

- *Practically possible:* The compliance with the verdict is possible since the RBI has the right to obtain information from the banks under **Section 27 of Banking Regulation Act**. Under this, RBI collect information from the banks in due course to update their voluntary disclosures from time to time as a practice under **Section 4(1)(b) of RTI Act**.

- *Taxpayer finally faces the brunt:* RBI argument that contract between bankers and their borrowers forbid it from making these details public does not hold water as due to the misdeeds of willful defaulters, the taxpayer are being asked to bear the cost.

- *Involvement of public money:* RBI should also comply with the CIC's directive as loans to corporate borrowers are disbursed from public deposits and bad loans are a cost to the economy.

- *Deterrent effect:* The disclosure will also put pressure on defaulters, even as banks have to use every possible way to recover loans. Thus, there is no reason why fraud and mala fide should be hidden from the public.

- *International best practice:* Countries such as **Sweden, Finland and Norway** even publish everyone's income-tax returns. India has a distance to go.

Way forward

The information can't be withheld in perpetuity. One approach could be to provide this information after the RBI and the bank or an institution and its board have achieved closure and taken action based on regulatory findings, to limit any damage.

World Press Freedom Index 2019

Syllabus: Important aspects of governance, transparency and accountability

In News

● The World Press Freedom Index 2019 was recently released by Reporters Sans Frontieres (RSF), also known as Reporters Without Borders, an **international NGO based in Paris**.

● Published annually by RSF since 2002, the index mesares the level of media freedom in 180 countries. It assesses the level of pluralism, media independence, the environment for the media and self-censorship, the legal framework, transparency, and the quality of the infrastructure that supports the production of news and information. However, it does not evaluate government policy.

● The scores measure constraints and violations, so the **higher the score, the worse the situation**. Because of growing awareness of the index, it is an extremely useful advocacy tool.

Highlights of The Report

● **Norway is ranked first** in the 2019 Index for the third year running while Finland (up two places) has taken second place from the Netherlands (down one at 4th). An increase in cyber-harassment caused Sweden (third) to lose one place.

● At the bottom of the Index, both Vietnam (176th) and China (177th) have fallen one place and **Turkmenistan (down two at 180th) is now last**, replacing North Korea (up one at 179th).

● Only 24 percent of the 180 countries and territories are classified as **good or fairly good**, as opposed to 26 percent last year.

● The index highlights that **hatred of journalists has degenerated into violence**, contributing to an increase in fear around the world. Threats, insults and attacks are now part of the occupational hazards for journalists in many countries.

● Many **authoritarian regimes** have fallen in the index. They include Venezuela (148th), where journalists have been the victims of arrests and violence by security forces, and Russia (149th), where the Kremlin has used arrests, arbitrary searches and draconian laws to step up the pressure on independent media and the Internet.

● As a result of an increasingly hostile climate, the United States (48th) has fallen three places in this year's Index and the media climate is now classified as problematic. Never before have US journalists been subjected to so many death threats or turned so often to private security firms for protection.

● Abusive judicial proceedings may be designed to gag investigative reporters by draining their financial resources, as in France or in Malta. They could also result in imprisonment, as in Poland, where journalists are facing possible jail terms for linking the head of the ruling party to a questionable construction project, and in Bulgaria where two journalists were arrested after spending several months investigating the misuse of EU funds.

● The level of violence used to persecute journalists who aggravate authorities no longer seems to know any limits. Saudi columnist Jamal Khashoggi's gruesome murder in the Saudi consulate in Istanbul last October sent a chilling message to journalists well beyond the borders of Saudi Arabia (172nd).

● With totalitarian propaganda, censorship, intimidation, physical violence and cyber-harassment, the Asia Pacific region continues to exhibit all of the problems that can beset journalism and has a virtually unchanged regional score.

● Disinformation is also becoming a big problem in the region. As a result of the manipulation of social networks in Myanmar, anti-Rohingya hate messages have become commonplace and the seven-year jail sentences imposed on two Reuters journalists for trying to investigate the Rohingya genocide was seen as nothing out of the ordinary.

Indian Scenario

● India has dropped two places on the index to be **ranked 140th**, with the lead up to the ongoing Indian general elections flagged as a particularly dangerous time for journalists.

● Violence against journalists including police violence, attacks by Maoist fighters and reprisals by criminal groups or corrupt politicians is one of the most striking characteristics of the current state of press freedom in India.

● The report also observed how journalists were often subjected to self-censorship, with the anti-sedition law invoked and criminal prosecutions used to limit the freedom of the press.

● **At least six Indian journalists were killed in connection with their work in 2018** and a number of doubts surround a seventh case. These murders highlighted the many dangers that Indian journalists face, especially those working for non-English-language media outlets in rural areas.

● An alarming rate of coordinated **hate campaigns are being waged on social networks** against journalists who dare to speak or write about contentious subjects. The campaigns are particularly virulent when the targets are women. The emergence of a #MeToo movement in the media in 2018 has lifted the veil on many cases of harassment and sexual assault to which women reporters have been subjected.

● Finally, coverage of regions that the authorities regard as sensitive, such as Kashmir, continues to be very difficult. Foreign reporters are barred from Kashmir and the Internet is often disconnected there.

Reporters Sans Frontieres

● It is an **international non-profit, non-governmental organization** based in Paris that conducts political advocacy on issues relating to freedom of information and freedom of the press.

● It has two primary spheres of activity: one is focused on Internet censorship and the new media, and the other on providing material, financial and psychological assistance to journalists assigned to dangerous areas.

Checkpoint Tipline by Whatsapp

Syllabus: Important aspects of governance, transparency and accountability

In News

- WhatsApp has launched a new initiative called Checkpoint Tipline that is aimed to help WhatsApp users in India to determine if a message that they have received contains fake news.

- WhatsApp users in India will be able to submit their queries about uncertain information or rumors they have received to the Checkpoint Tipline on WhatsApp, following which they would be notified if the message that they have received contains any misleading information.

- Launched by PROTO, the tipline will create a database of rumours circulating in India during the election season. When users would share a query with a suspicious message with the tipline, it would check the message shared by the user against its own database to notify the users if the claim made by the message is indeed true.

- The response will indicate if information is classified as true, false, misleading, disputed or out of scope and include any other related information that is available.

- The verification centre, will be able to review rumors in the form of pictures, video links or text. Apart from English, it will cover four regional languages - Hindi, Telugu, Bengali and Malayalam.

- This is not the first time the global messaging platform has tried to filter the barrage of information exchanged every day by billions of users. The other efforts to battle fake news are social campaigns and the five forward limit.

- **PROTO**, which is developing the verification and research frameworks for India, will be joined in this cause by Dig Deeper Media and Meedan. The two organisations already have experience working on misinformation-related projects around the world.

Social Justice

Victim Compensation

Syllabus: Mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

In News

The Supreme Court (SC) has ordered the Gujarat government to pay Rs. 50 lakh to Bilkis Yakoob Rasool Bano, a gang-rape survivor of the 2002 communal riots in Gujarat. The Court also directed State government to provide her with a government job and a house.

Legal Provisions For Victim Compensation

- *Section 357A, CRPC:* The Code of Criminal Procedure was amended in 2008 to insert Section 357A under which every State government has to prepare a scheme to set up a fund from which compensation can be paid to victims of crime and their dependents who have suffered loss and injury and who may require rehabilitation.

- *Other steps:* Further, the Centre has created a **Central Victim Compensation Fund**. On SC directions, the National Legal Services Authority has prepared a **Compensation Scheme for Women Victims/Survivors of Sexual Assault/Other Crimes-2018.** The scheme proposes a uniform payment of **Rs. 5 lakh** to the maximum of **Rs. 10 lakh** to gang-rape survivors in any part of the country. Further, in the case of rape and unnatural sexual assault, the victim will get a minimum of **Rs. 4 lakh** and the maximum of **Rs. 7 lakh**.

Final Analysis

- The SC has endeavoured to achieve restitutive justice. Compensation to victims is a relatively less recognized component of criminal justice as current system focusses specially on the accused.

- Further, there is a need to streamline the schemes and ensure that the compensation process is not done in an *ad hoc* manner.

Special Kits For Sexual Assault Cases

Syllabus: Mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

In News

Ministry of Home Affairs (MHA) has distributed over 3,100 special kits among states and union territories, for collecting blood and semen samples, besides other evidence, in sexual assault cases.

Background

Incidents of crime against women rose from 3,29,243 in 2015 to 3,38,954 in 2016. According to National Crime Records Bureau in 2015, as many as 34,651 cases of rape were registered in the country and the figure increased to 38,947 in 2016. The data for 2017 and 2018 is yet to be published.

Details of The Kit

- The Sexual Assault Evidence Collection Kits (SAECK) or 'rape investigation kits' are designed to carry out immediate medico-legal investigation and aid in furnishing evidence in sexual assault and rape cases.

- The kits are expected to help law enforcement agencies to ensure effective investigation in a timely manner for better prosecution and convictions in sexual assault cases.

- These kits also contain instructions on collection of evidence from the crime scene. The SAECKs would be sent to the closest laboratory and within two months the results would be out.

- Police investigators, prosecutors and medical officers are being given training on how to use the kits in the event of any such case happening in their area of jurisdiction.

- The Delhi-based Lok Narayan Jai Prakash National Institute of Criminology and Forensic Sciences (LNJP NIC&FS) is undertaking training of medical officers from states and union territories on medico-legal procedures, including evidence collection and handling of forensic material in sexual assault cases.

- The kits were procured with financial support under the central government's Nirbhaya Fund, which was named after the 2012 Delhi gang-rape victim.

World Health Day

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

- World Health Day was recently celebrated on the 7th of April. The day marks the **anniversary of the World Health Organization** which was **founded in 1948**.

- The day is an opportunity to communicate about the importance of equity in health-care services, for not only the health of individuals, but also for the health of economies and society at large.

- In 1948, the WHO held the First World Health Assembly, the Assembly decided to celebrate 7 April of each year, with effect from 1950, as the World Health Day.

- It is one of eight official global health campaigns marked by WHO, along with World Tuberculosis Day, World Immunization Week, World Malaria Day, World No Tobacco Day, World AIDS Day, World Blood Donor Day and World Hepatitis Day.

- This year's theme is **Universal Health Coverage: Everyone, Everywhere**. It refers to the providing of essential healthcare services to a person while ensuring that the use of these does not expose the user to financial distress.

- Key to achieving UHC is ensuring that **everyone can obtain the care they need, when they need it, right in the heart of the community**. It includes the full spectrum of services needed throughout life—from health promotion to prevention, treatment, rehabilitation, and palliative care—and is best based on a strong primary health care system.

- The UHC roadmap is based on 5 attributes of high-performing health systems: quality, efficiency, equity, accountability, sustainability and resilience.

- Progress is being made in all the regions of the world, but millions of people still have no access at all to health care. Millions more are forced to choose between health care and other daily expenses such as food, clothing and even a home.

- According to a report in WHO, at least half of the world's population do not have full coverage of basic health services. Moreover, around 100 million people are still being pushed into poverty because they have to pay for health care.

- UHC is firmly based on the WHO constitution of 1948 declaring health a fundamental human right and on the Health for All agenda set by the Alma Ata declaration in 1978. UHC cuts across all of the health-related Sustainable Development Goals (SDGs) and brings the hope of better health and protection for the world's poorest.

International Convention on World Homoeopathy Day

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

- A two day convention was recently organised by the Central Council for Research in Homoeopathy (CCRH), an autonomous research organisation under the Ministry of AYUSH, to observe the World Homoeopathy Day.

- The World Homoeopathy Day is observed to commemorate the birth anniversary of the **founder of Homoeopathy, Dr. Christian Fredrich Samuel Hahnemann**.

- India's annual market size for Homeopathy is 516.9 million US dollars with 100 million patients following it out of 500 million patients worldwide with a global market size of 3.73 billion US dollars.

- The **CCRH Archives on Homeopathy**, a digital repository of accumulated knowledge in homeopathy, having important homoeopathic literary material spread all over the world was officially launched at the convention

- With an aim to recognise exemplary work in homoeopathy, AYUSH awards relating to this stream of alternative medicine for lifetime achievement, best teacher, young scientist and best research paper were conferred at the event.

Need For The Convention

- The Council takes this as an opportunity to review the path trodden so far, take stock of the challenges faced and to formulate future strategies for development of homoeopathy.

- The convention, witnessed signing of two agreements with PG homoeopathic colleges. The vision behind the agreement is to **provide impetus to research infrastructure**, which, in turn will further orient the students towards research.

- It is important to bridge the gap between science and tradition through research and ensure safety, quality control and consistency of products for the credibility of homoeopathy.

- There is an imminent need to focus on improving the quality of education and enhancing the success rate of an average practitioner and ensure the production and availability of high quality homoeopathic drugs in the market.

- A wide range of topics including utilisation of existing research by clinicians, drug development and validation, research initiatives, documented clinical experiences and the road ahead for homoeopathy were discussed at the convention.

ICMR Launches MERA India

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

- The Indian Council of Medical Research has launched the 'Malaria Elimination Research Alliance (MERA) India' - a conglomeration of partners working on malaria control - in order to prioritise, plan and scale up research to eliminate the disease from India by 2030.

- The principal activity of the alliance is to prioritise, plan, conduct, scale up and translate relevant research in a coordinated and combinatorial way in order to have a tangible impact on the population who are at risk of malaria

Government's Efforts

- The National Vector Borne Diseases Control Program (NVBDCP) of India has developed a comprehensive framework to achieve the overarching vision of Malaria free India by 2030.

- NVBDCP's National Strategic Plan clearly recognises the critical role of research to support and guide malaria elimination efforts.

- Over the past two decades, India has made impressive progress in malaria control. The malaria burden has declined by over 80 per cent, 2.03 million cases in 2000 to 0.39 million in 2018, and malaria deaths by over 90 per cent, 932 deaths in 2000 to 85 in 2018.

Significance Of The Alliance

- The alliance will facilitate trans-institutional coordination and collaboration around a shared research agenda which responds not only to programmatic challenges and addresses gaps in available tools, but also proactively contributes to targeted research.

- It does not intend to duplicate international efforts rather aims to complement this on a national scale while contributing to the broader global agenda.

- It aims to harness and reinforce research in coordinated and combinatorial ways in order to achieve a tangible impact on malaria elimination.

National Vector Borne Diseases Control Program

- It is an umbrella programme for prevention and control of vector borne diseases viz. Malaria, Japanese Encephalitis (JE), Dengue, Chikungunya, Kala-azar and Lymphatic Filariasis.

- The States are responsible for implementation of programme, whereas the Directorate of NVBDCP, Delhi provides technical assistance, policies and assistance to the States in the form of cash & commodity.

- Malaria, Filaria, Japanese Encephalitis, Dengue and Chikungunya are transmitted by mosquitoes whereas Kala-azar is transmitted by sand-flies.

- The transmission of vector borne diseases depends on prevalence of infective vectors and human-vector contact, which is further influenced by various factors such as climate, sleeping habits of human, density and biting of vectors.

Candida Auris

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

- Healthcare facilities in several countries have reported that a type of yeast called Candida auris has been causing severe illness in hospitalized patients. It has been reported in 32 countries, including India and Pakistan.

- A top American hospital had to rip out ceiling and floor tiles to get rid of the infestation in the room of a patient after his death. A hardy fungus, it may have killed a third of the several hundred people it has infected, and is at the new threat horizon of drug-resistant microorganisms.

- The current panic notwithstanding, the fungus was first identified in 2009 from yeast isolates from the ear of a Japanese patient, and described as a new species after RNA sequencing. Retrospective review of Candida strain collections found that the earliest known strain of C. auris dates to 1996 in South Korea.

Detection

- Specialized laboratory methods are needed to accurately identify C. auris, as with standard laboratory methods it can be misidentified which may lead to inappropriate management, making it difficult to control its spread in healthcare settings.

- As identification of C. auris requires specialized laboratory methods, infections likely have occurred in other countries but have not been identified or reported.

Drug Resistance

- That C. auris is difficult to identify, may have had a role to play in the development of its resistance. Healthcare personnel oblivious to it for long, continue to prescribe antibiotics — giving the organism time to acclimatise to the medication.

- Most C. auris infections are treatable with a class of antifungal drugs called echinocandins. However, some C. auris infections have been resistant to all three main classes of antifungal medications, making them multidrug-resistant and more difficult to treat.

- In such situations, multiple classes of antifungals at high doses may be required to treat the infection. However, the cause for C. auris rampage lies deeper, in the over-use of antifungals in agriculture and animal husbandry.

Vulnerable Targets

- Candida auris has gained infamy as a hospital-acquired infection, and like other resistant organisms, preys on people with poorly developed or compromised immune systems, including newborns, the elderly and diabetics.

- Patients who have been hospitalized in a healthcare facility a long time, have a central venous catheter, or other lines or tubes entering their body, or have previously received antibiotics or antifungal medications, appear to be at highest risk of infection with this yeast.

- Environmental factors probably play a role in outbreaks in healthcare settings that include prolonged survival in healthcare environments, probably due to skin colonization of patients and asymptomatic carriers.

- It is unlikely that routine travel to countries with documented C. auris infections would increase the chance of someone getting sick from it. Infections have occurred primarily in patients who were already in the hospital for other reasons.

- People who travel to these countries to seek medical care or who are hospitalized there for a long time may have an increased risk.

Symptoms

- Symptoms may not be noticeable, because patients with infection are often already sick in the hospital with another serious illness or condition.

- Moreover, symptoms depend on the part of the body affected. It can cause many different types of infection, such as bloodstream infection, wound infection, and ear infection. It also has been isolated from respiratory and urine specimens, but it is unclear if it causes infections in the lung or bladder.

Prevention

- The key is to prevent the fungus from spreading, so the management of the infection is hinged on isolation of the patient, ideally in a single room, with strict hand hygiene.

- It is recommended that everyone who has come in contact with a patient should be screened for the fungus, and all equipment used for the care of the patient should be cleaned every day in accordance with clinical care recommendations.

Independent Emergence

- Whole genome sequencing of C. auris specimens from countries in the regions of eastern Asia, southern Asia, southern Africa, and South America has been conducted. It produces detailed DNA fingerprints of organisms.

- It was found that isolates within each region are quite similar to one another, but are relatively different across regions. These differences suggest that C. auris has emerged independently in multiple regions at roughly the same time.

- Whether resistance is of medical or agricultural origin, the solution is the same - public education against the arbitrary use of antimicrobial drugs. It did not work earlier, when it was a largely theoretical issue. But now that organisms like C. auris are actually killing patients and contaminating entire hospital wards, as it has done in the US, UK and Spain, it is hoped that with proper information dissemination people will be more receptive.

World Haemophilia Day

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

- World Haemophilia Day is recognised on April 17th to increase awareness of haemophilia and other inherited bleeding disorders.

● It was started in 1989 by the World Federation of Hemophilia (WFH) which chose to bring the community together in honour of WFH founder Frank Schnabel's birth anniversary.

Haemophilia

● Haemophilia is a medical condition, mostly inherited, in which the ability of blood to clot is severely reduced, so that even a minor injury can cause severe bleeding.

● Blood contains many proteins called clotting factors that can help to stop bleeding. People with hemophilia have low levels of either factor VIII or factor IX.

● About one third of new cases are caused by a new mutation of the gene in the mother or the child. In these cases, there is no previous history of hemophilia in the family.

Types

There are different types of hemophilia. The following two are the most common:

● Hemophilia A (Classic Hemophilia): It is caused by a lack or decrease of clotting factor VIII and occurs in about 1 in 5,000 births

● Hemophilia B (Christmas Disease): It is caused by a lack or decrease of clotting factor IX. Its incidence is rarer at about 1 in 20,000 births

Prevalence Among Men

● Because of the genetics involved in the way the sex of a child is determined, men are more vulnerable to haemophilia than women.

● The sex of an individual is determined by a pair of sex chromosomes (a chromosome is a DNA molecule that contains genetic information). Females are identified with an XX pair of sex chromosomes, and males with an XY pair.

● Haemophilia is caused by a defect in the X chromosome. If a girl is born with one defective X chromosome, her other X chromosome can compensate for it. In such a case, she is a carrier of haemophilia but will not suffer from the condition herself. Only if both her X chromosomes are defective will she suffer from haemophilia herself.

● On the other hand, if a boy is born with a defective X chromosome, he does not have the second X chromosome to compensate for it, and will suffer from haemophilia. That is the reason haemophilia is more common among men.

● Britain's Queen Victoria (1819-1901) is the world's most widely known carrier of haemophilia. From her, the condition spread among a number of European royal families, which is why haemophilia was **once known as the royal disease**.

Haemophilic Incidence

● According to the World Federation of Haemophilia's Annual Global Survey 2017, released in October 2018, there were over 1.96 lakh persons living with haemophilia across the world in 2017.

● In the country-wise data, India emerges with the highest count at nearly 19,000. According to expert estimates around 80% cases go unregistered, so the actual count is close to 2 lakh. The large number of unregistered cases is due to the absence of proper diagnostic facilities in remote areas.

Treatment

● There is no known cure for this disorder and the key to leading a better life with haemophilia is early detection and condition management. Only by expanding the net of diagnostic labs in the districts of the country can the problem of haemophilia be solved.

- Medical management of the condition includes infusing blood clotting factor concentrates into the body to prevent bleeding. This is called prophylactic therapy and is administered on the basis of the patient's weight. It also entails giving injections to the patient whenever they bleed, also called on demand prophylactic therapy, however the treatment is very expensive.

- Other ways of managing the disease is exercising regularly, avoiding contact sports, maintaining good dental hygiene and following safe practices.

Mosquirix - Vaccine for Malaria

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

- Malawi in southeastern Africa will be the first country to begin immunising children against malaria using the only licensed vaccine, Mosquirix, to protect against the mosquito borne disease.

- India will be watching the rollout in Africa with great interest because it is among the 11 countries with 70% of the world's burden of malaria, though it has managed to reduce the disease burden in the last few years.

- According to the 2018 World Malaria report, it has registered a 24% decrease between 2016 and 2017. However, 1.25 billion Indians — 94% of its population — are still at risk of malaria.

Malaria

- Malaria is caused by the infectious parasite Plasmodium. It spreads through female mosquito named Anopheles which invades the human skin and deposits the Plasmodium sporozoites.

- It causes symptoms that typically include fever, tiredness, vomiting, and headaches. In severe cases it can cause yellow skin, seizures, coma or death.

Mosquirix

- The vaccine RTS, S, with trade name Mosquirix is the first malaria vaccine licensed to be used against malarial parasite Plasmodium Falciparum.

- The vaccine will be given in four doses: three doses between 5 months and 9 months of age and the fourth dose around the completion of 2nd year.

- It is the only vaccine till date which showcased significant impact on malaria infection. It has been tested among children and proved to prevent 4 in 10 malarial cases, including 3 in 10 cases of life-threatening severe malaria

- It is made through the contribution of scientists at GSK and developed under the partnership of nonprofit organization PATH and has also received support from Bill and Melinda Gates Foundation.

Significance

- Malaria, according to the World Health Organisation, remains one of the world's leading killers, claiming the life of one child every two minutes. Worldwide, malaria kills 435 000 people a year, most of them children.

- At a time when the very scientific basis and veracity of vaccines are being challenged and doubted as the rise vaccine hesitancy shows, the malaria vaccine pilots is a reinforcement of the age-old adage of medicine – prevention better than cure.

- It is also important because as global warming becomes more and more severe there are predictions of vectors such as mosquitos seeing an explosive rise the world over, including in areas where they are traditionally not found.

- According to WHO, from 2000 to 2015, there was a 62% reduction in malaria deaths, , and a 41% reduction in the number of cases. However, more recent data suggests that, malaria is making a comeback with 219 million cases in 2017, compared with 217 million in 2016.

- The tools to deal with it are modestly effective, but drugs and insecticides wear out and after 10-20 years, mosquitoes become resistant. There's a real concern that in 2020s, cases are going to jump back up again

Effectiveness of the Vaccine

- While the launch of the vaccine is a landmark event, many have questioned its effectiveness because a previous trial showed Mosquirix protects only about one-third of immunised children.

- However, the world cannot wait for a perfect option because the next generation of the vaccine may take years to develop as it took more than 30 years and more than $500 million for an international consortium to develop Mosquirix.

- As per WHO the vaccine is a "complementary malaria control tool" to be used in addition to bed nets treated with insecticide, spraying indoor areas with insecticides and prompt diagnosis and treatment of the disease.

- The power of vaccine can't be denied and when combined with other precautionary measures for malaria the outcome can be highly positive. The advent of Mosquirix can change the entire dynamics and can help in saving innumerable lives.

WHO Guidelines For Children Under The Age Of 5

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

- WHO has recently launched the guidelines on physical activity, sedentary behaviour and sleep for children under the age of 5 years.

- The guidelines were developed by a WHO panel of experts, which assessed the effects on young children of inadequate sleep, and time spent sitting watching screens or restrained in chairs and prams. They also reviewed evidence around the benefits of increased activity levels.

Need For The Guidelines

- The guidelines are issued as part of a campaign to tackle the global obesity crisis and ensure that young children grow up fit and well.

- The guidelines build on data gathered in countries including Canada and Australia, which show that as many as 75 per cent of children do not have healthy lifestyles. 40 million children around the globe — around six per cent of the total — are overweight. Of that number, half are in Africa and Asia.

Recommendations

- Sedentary behaviours, whether riding motorised transport rather than walking or cycling, sitting at a desk in school, watching TV or playing inactive screen-based games are increasingly prevalent and associated with poor health outcomes.

- Quality sedentary time spent in interactive non-screen-based activities with a caregiver, such as reading, storytelling, singing and puzzles, is very important for child development.
- Further, it is important to manage the use of digital tools and watch both their benefits and the risks.

Infants (Less Than 1 Year)

- Be physically active several times a day in a variety of way**s**, particularly through interactive floor-based play. For those not yet mobile, this includes at least 30 minutes in prone position (on their stomach) spread throughout the day while awake.
- Not be restrained for more than 1 hour at a time. Screen time is not recommended. When sedentary, engaging in reading and storytelling with a caregiver is encouraged.
- 14–17 hours (0–3 months of age) or 12–16 hours (4–11 months of age) of good quality sleep, including naps.

Children 1-2 Years Of Age

- Spend at least 180 minutes in a variety of types of physical activities at any intensity, **i**ncluding moderate-to-vigorous-intensity physical activity, spread throughout the day
- For 1-year-olds, sedentary screen time (such as watching TV or videos, playing computer games) is not recommended. For those aged 2 years, sedentary screen time should be no more than 1 hour, less is better.
- Have 11-14 hours of good quality sleep, including naps, with regular sleep and wake-up times.

Children 3-4 Years Of Age

- Spend at least 180 minutes in a variety of types of physical activities at any intensity, of which at least 60 minutes is moderate to vigorous intensity physical activity, spread throughout the day
- Sedentary screen time should be no more than 1 hour; less is better. Have 10–13 hours of good quality sleep.
- The key is to replace prolonged restrained or sedentary screen time with more active playtime, while making sure young children get enough good quality sleep.

Bridge Courses For Dentists

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

Ministry of health and family welfare and NITI Aayog have come up with a proposal of **allowing dentists to practice family medicine through a bridge course**. The proposal has already received a nod from Prime Minister's Office.

Need For The Step

- As per WHO, the doctor population ratio should be 1:1000. However, according to union health ministry, **there is less than one doctor for every 1000 people in the country**.
- Further, more than 65% of health professionals are available in urban part of India for 31% of population, whereas in rural areas 33% of health professionals are available for 70% of population, which adds to the inequity.
- On a yearly basis more than 30,000 dentist pass, out of which 3000-4000 go for post graduate education in country, whereas some go abroad or practise as dentist. Recent surveys show that

there is a lot of insecurity in the graduate dentists not only because of the inadequate post graduate seats but also due to the low oral health awareness among the Indian population.

Modalities Of The Course

● Only B.D.S graduates recognised by Dental Council of India will be eligible for the bridge course.

● The admission will be given either through common entrance or through cumulative B.D.S marks or merit can be decided considering 50% of cumulative BDS marks and 50% of common entrance.

● According to DCI, the syllabus curriculum, scheme of examination, method of evaluation, awarding degree and registration will be same as recommended for M.B.B.S course by MCI.

Significance

● The idea is to scale up medical education in India by leveraging dentists to provide primary health care thereby reducing the gaps of current shortfall of doctors in the country.

● Post BDS Medical Bridge course will train the dentist to avail the opportunities and be able to conduct professional requirements to provide medical health care as an additional skilled health care performance.

● The course design is such that it takes care of socioeconomical background, literacy ratio, aspect of poverty, pattern of disease, the changing lifestyle, health priority and access to general health as well as dental health.

Opposition From IMA

● However, the proposal has met stern opposition from the Indian Medical Association (IMA). IMA has alleged that idea of bridge courses and mid-level practitioners to fill the gap doctors in rural areas is a myth

● Earlier a proposal to let AYUSH practitioners practise modern medicine, under the National Medical Commission Bill 2017 had faced a similar opposition from IMA.

● As per IMA, there is no shortage of doctors in the country. It says around 63,250 MBBS graduates come out of 494 medical colleges of India, while there are only 23,729 post graduate seats. The underlying problem is that the Government does not have the capacity to absorb rest of them.

● Low expenditure on health by successive Governments is one of the biggest reason for the miserable status of health care delivery in the country. Non creation of new posts, new Public Health Centres (PHCs) and Community Health Centres(CHCs) due to budget constraints adds to the problem.

● It fears that an attempt to provide half baked medical care to the citizens through mid-level practitioners might have dangerous outcomes.

● Every allied profession to medicine has a unique identity and serves a specific purpose. Dentists, Nurses, Optometrists and Pharmacists have a role and should contribute their services in the respective fields. To baptize them as mid-level medical practitioners through a bridge course is being indifferent to the needs of patient safety and patient care.

Indian Medical Association

● The **Indian Medical Association** (**IMA**) is a **national voluntary organisation** of Doctors of Modern Scientific System of Medicine in India, which looks after the interest of doctors as well as the well being of the community at large.

● **Headquartered in Delhi, it was established in 1928** as the All India Medical Association, renamed Indian Medical Association in 1930. It is a society registered under The Societies Act of India.

WHO Guidelines on Digital Health Technology

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

- The World Health Organization (WHO) has released recommendations on ways that countries can use digital health technology, accessible via mobile phones, tablets and computers, to improve people's health and essential services.

- Harnessing the power of digital technologies is essential for achieving universal health coverage. Ultimately, digital technologies are not ends in themselves, they are vital tools to promote health, keep the world safe, and serve the vulnerable.

- The recommendations are a result of a two-year-long research by the WHO on digital technologies, including consultations with global experts, so that such tools may be used for maximum impact on health systems and people's health.

Key Recommendations

- Health systems need to respond to the increased visibility and availability of information. People must be assured that their data is safe and that they are not being put at risk because they have accessed information on sensitive health topics, such as sexual and reproductive health issues.

- It stresses on the importance of providing supportive environments for training, dealing with unstable infrastructure, as well as policies to protect privacy of individuals, and governance and coordination to ensure these tools are not fragmented across the health system.

- Encourage policy-makers and implementers to review and adapt to these conditions if they want digital tools to drive tangible changes and provide guidance on taking privacy considerations on access to patient data.

- In the domain of telemedicine, which allows people living in remote locations to obtain health services by using mobile phones, web portals, or other digital tools it is important that consultations are conducted by qualified health workers and that the privacy of individuals' health information is maintained.

- The guidelines emphasise the importance of reaching vulnerable populations, and ensuring that digital health does not endanger them in any way.

- Structural issues in the settings where digital technologies are being used, available infrastructure and the health needs being addressed should be given due consideration as digital interventions, depend heavily on the context and ensuring appropriate design.

- The use of digital technologies offers new opportunities to improve people's health But the evidence also highlights challenges in the impact of some interventions. If digital technologies are to be sustained and integrated into health systems, they must be able to demonstrate long-term improvements over the traditional ways of delivering health services.

World Immunization Week

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

- Celebrated in the last week of April, World Immunization Week (April 24 - 30) aims to promote the use of vaccines to protect people of all ages against diseases.

- Immunisation saves millions of lives every year and is widely recognised as one of the world's most successful and cost-effective health interventions.
- The theme of this year's campaign is Protected Together: Vaccines Work!, and it the campaign will celebrate Vaccine Heroes from around the world — from parents and community members to health workers and innovators — who help to ensure everyone is protected, at all ages, through the power of vaccines.

Vaccination

- When foreign invaders such as bacteria or viruses enter the body, immune cells called lymphocytes respond by producing antibodies, which are protein molecules. These antibodies fight the invader known as an antigen and protect against further infection.
- Vaccines are made of dead or weakened antigens. They can't cause an infection, but the immune system still sees them as an enemy and produces antibodies in response. After the threat has passed, many of the antibodies break down, but immune cells called memory cells remain in the body.
- When the body encounters that antigen again, the memory cells quickly produce antibodies and strike down the invader before it's too late.
- Vaccines also work on a community level. Some people can't be vaccinated, either because they are too young, or because their immune systems are too weak. But if everyone around them is vaccinated, unvaccinated people are protected by something called herd immunity. In other words, they're unlikely to even come in contact with the disease, so they probably won't get sick.

Vaccine Penetration

- In 2017, the number of children immunized – 116.2 million – was the highest ever reported. Since 2010, 113 countries have introduced new vaccines, and more than 20 million additional children have been vaccinated
- Global vaccination coverage remains at 85%, with no significant changes during the past few years. An additional 1.5 million deaths could be avoided, if global immunization coverage improves.
- Uptake of new and underused vaccines is increasing. But despite gains, all of the targets for disease elimination—including measles, rubella, and maternal and neonatal tetanus—are behind schedule, and over the last two years the world has seen multiple outbreaks of measles, diphtheria and various other vaccine-preventable diseases.
- Most of the children missing out are those living in the poorest, marginalized and conflict-affected communities.
- In order for everyone, everywhere to survive and thrive, countries must intensify efforts to ensure all people receive the lifesaving benefits of vaccines. Additionally, those countries that have achieved or made progress towards the goals must work to sustain the progress they have made.

Importance of Vaccination

- Immunization prevents illness, disability and death from vaccine-preventable diseases including cervical cancer, diphtheria, hepatitis B, measles, mumps, pertussis (whooping cough), pneumonia, polio, rotavirus diarrhoea, rubella and tetanus.
- Expanding access to immunization is vital for achieving the Sustainable Development Goals, poverty reduction and universal health coverage.
- Routine immunization provides a point of contact for health care at the beginning of life and offers every child the chance at a healthy life from the earliest beginnings and into old age.

● Immunization is also a fundamental strategy in achieving other health priorities, from controlling viral hepatitis, to curbing antimicrobial resistance, and providing a platform for adolescent health and improving antenatal and newborn care.

Antibiotics Information Dissemination

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

In News

● After an alert by the National Co-ordination Centre of the Pharmacovigilance Programme of India (PvPI) the Central Drugs Standard Control Organisation (CDSCO) has directed the drug manufacturers to ensure that information related to adverse reactions from some commonly-used antibiotics be made available to the general public.

● Recommendations of the PvPI were discussed by the subject expert committee under the DCGI and after detailed deliberations, it was decided to incorporate the safety warnings.

● All zonal and sub-zonal officers have been instructed to direct the manufacturers of these formulations to mention the additional reaction in the package insert or promotional literature of the drug to alert patients and healthcare providers about the important safety concerns.

● The information of adverse drug reactions is important given that India faces a problem of misuse of antibiotics. It's a reminder for those who do not think twice before popping antibiotics and will also help in regulating the use of antibiotics.

PvPI

● India earlier depended on foreign agencies to learn about adverse drug reactions. In July 2010, the Pharmacovigilance Programme of India (PvPI) was approved by the Ministry of Health and Family Welfare (MOHFW), with the primary objective of creating a nation-wide system for patient safety reporting.

● The mission of PvPI is to safeguard the health of the Indian population by ensuring that the benefit of use of medicine outweighs the risks associated. Since there exist considerable social and economic consequences of adverse drug reactions there is a need to engage healthcare professionals and the public at large, in a well structured programme to build synergies for monitoring adverse drug reactions in the country.

● The purpose of the PvPI is to collate data, analyze it and use the inferences to recommend informed regulatory interventions, besides communicating risks to healthcare professionals and the public.

CDSCO

● CDSCO under Directorate General of Health Services, is the National Regulatory Authority (NRA) of India. The Drugs & Cosmetics Act,1940 and rules 1945 have entrusted various responsibilities to central & state regulators for regulation of drugs & cosmetics.

● Under the Drugs and Cosmetics Act, CDSCO is responsible for approval of drugs, conduct of clinical trials, laying down the standards for drugs, control over the quality of imported drugs in the country and coordination of the activities of state drug control organizations by providing expert advice.

● Further CDSCO along with state regulators, is jointly responsible for grant of licenses of certain specialized categories of critical Drugs such as blood and blood products, I. V. Fluids, Vaccine and Sera.

National Institutional Ranking Framework 2019

Syllabus: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

In News

- The National Institutional Ranking Framework 2019 was recently announced by the President. At the release he asserted that recent expansion in higher education has widened access and improved equity although quality still remains a concern.

- NIRF was approved and launched by the MHRD in September 2015. The first rankings were released by MHRD in 2016.

- Overall, 3,127 institutions applied for different categories of the NIRF this year. The rankings have been announced under nine categories – overall, universities, engineering, colleges, management, pharmacy, medical, architecture and law.

- The Indian Institute of Technology, Madras (IIT-Madras) has topped the ranking of higher education institutions, followed by the Indian Institute of Science, Bengaluru, and IIT-Delhi.

- Seven IITs appear in the top 10 list, while Jawaharlal Nehru University, Delhi and Banaras Hindu University, Varanasi, take the remaining places.

- This framework outlines a methodology to rank institutions across the country. The methodology draws from the overall recommendations and broad understanding arrived at by a Core Committee set up by MHRD, to identify the broad parameters

Parameters

- **Teaching, Learning & Resources:** These parameters are related to the core activities of any place of learning. They lay emphasis on measuring numbers and quality of faculty, library and lab resources and general facilities for development of young persons.

- **Research, Professional Practice & Collaborative Performance:** Excellence in teaching and learning is closely associated with the scholarship of the faculty and students. Equally, faculty members are expected to make their knowledge and expertise available to benefit the society and industry. These parameters, therefore, attempt to measure the quantity and quality of research output as seen through international data bases, IPR generation and interface with industry and fellow professionals.

- **Graduation Outcomes:** This parameter forms the ultimate test of the effectiveness of the core teaching/learning activity, and measures the student graduation rate and their success in finding appropriate placement in industry and Government or taking up higher studies.

- **Outreach and inclusivity:** It lays special emphasis on representation of women and socially challenged persons in student and/or faculty populations, & also on outreach activities of institution.

- **Perception:** The ranking methodology gives a significant importance to the perception of the institution by its stakeholders viz. public, academics and employers.

International Relations

Bangladesh-Bhutan-India-Nepal initiative

Syllabus: India and its neighbourhood- relations

In News

- The Bhutan government has decided to **send the bill for ratification** of the **Bangladesh-Bhutan-India-Nepal (BBIN) initiative** for road and rail connectivity to its upper senate.

- So far, Bhutan **has been reluctant to ratify** the agreement due to various concerns.

- Bhutanese suspicion has been that the pact **will overwhelm the smallest country in South Asia with traffic, tourists and pollution**.

Background

- Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicles Agreement (MVA) was signed in 2015.

- **Bangladesh, India, and Nepal** have already **ratified the MVA** and *have agreed to start implementation of the MVA among the three signatory countries, with Bhutan joining after it ratifies the Agreement.*

- In January 2018, Bangladesh, India and Nepal had agreed on the **text of the operating procedures for passenger vehicle movement in the sub-region** under BBIN MVA.

- ADB has been providing technical, advisory, and financial support to the BBIN MVA initiative as part of its assistance to the **South Asia Subregional Economic Cooperation (SASEC) program**.

SASEC Program

- It a projects-based economic cooperation initiative that brings togetherthe BBIN countries, Maldives, Sri Lanka and more recently, Myanmar.

- ADB is the secretariat of SASEC.

- The trial runs for cargo vehicles under the MVA were **conducted along the Kolkata-Dhaka-Agartala and Delhi-Kolkata-Dhaka routes** in the past.

- The trials were successful in establishing the Agreement's economic benefits.

Benefits of BBIN MVA

- Strengthen sub-regional cooperation

- Promote spirit of economic integration emphasised in the SAARC Charter

- Promote seamless movement of goods and passengers across borders

- Facilitate greater People to people contact

- Likely to yield maximum dividends for the two Himalayan land-locked counties of Nepal and Bhutan.

Challenges

- Customs and tariff issues are yet to be settled among the four countries.

- Many border crossing points do not have integrated check posts.

- India has already had bilateral trade and transit treaties with all the three countries. Will BBIN-MVA supersede these bilateral agreements or reinforce them?

- Coordination between inter-ministerial departments as well as between central and state agencies, especially in India, has been a major problem in implementing agreements.

- It has been observed that in India, on many occasions, state agencies either delay consignments or stop them for security checks with ulterior motives.

Suspension of LoC Trade between J&K and PoJK

Syllabus: India and its neighbourhood- relations

In News

- India has **suspended LoC trade in Jammu & Kashmir** w.e.f 19-04-2019.

- This action was taken based on reports that the *Cross LoC trade routes are being misused by the Pakistan based elements for funnelling illegal weapons, narcotics and fake currency* etc.

Reasons Stated By Ministry Of Home Affairs

- The trade has **changed its character to mostly third party trade.**

- Products from other regions, including foreign countries, are finding their way through this route.

- Unscrupulous and anti-national elements are using the route as a conduit for Hawala money, drugs and weapons, under the garb of this trade.

- During investigations by NIA, it was found that persons closely associated with banned terrorist organizations involved in fuelling terrorism/separatism were largely involved in LoC trade.

- Investigations have further revealed that some individuals, who have crossed over to Pakistan, and joined militant organizations have opened trading firms in Pakistan.

- These trading firms are under the control of militant organizations and are engaged in LoC trade.

About LoC Trade

- The cross-LoC trade between Jammu and Kashmir and PoK started in 2008 as "Kashmir specific confidence building measures" in a bid to improve India-Pakistan relations. It was hoped that the cross border trade would help in establishing a "bottom up" approach to peace-building.

- Two crossing points, Srinagar-Muzaffarabad at Salamabad, Uri, and Poonch-Rawalakot at Chakan da Bagh, Poonch were opened for trade.

- The agreement was for zero duty trade for a list of 21 items, which include handicrafts, saffron, mushrooms, fruit, cereals, honey, spices and carpets.

- The LoC trade was meant to facilitate the exchange of goods of common use between local populations across the LoC in Jammu & Kashmir.

A FEW ITEMS, SMALL NUMBERS

THE CROSS-LOC trade is technically not considered bilateral trade. When it was started in 2008, trade was allowed twice a week, which was increased to 4 days a week in 2011.

THE INDIA-PAKISTAN Joint Working Group on Cross-LoC Confidence Building Measures, which reviews the cross-LoC trade, last met in March 2014.

UNTIL RECENTLY, only the initial 21 items, which included embroidery items, bananas, red chilli, dry fruits and mangoes, were allowed to be traded.

THE TRADE since 2008 is valued at approximately Rs 7,000 crore.

- Since it began, goods of an estimated worth more than Rs. 6,000 crore have been traded over the LoC points.

- The trade takes place **four days a week**. The Trade is based on **Barter system and zero duty basis**.

Previous Suspension

- There have been previous suspensions. Once in 2015, trade was suspended for 40 days after drugs were discovered in a truck from Muzaffarabad.

- The longest suspension came during the post-Burhan Wani killing agitation in the Valley, for three months.

- There were other brief spells when trade was suspended, mostly at Chakan da Bagh, on account of heavy cross-border shelling.

How is cross-LoC Trade Different

- Business across the LoC is different because it works on a **barter system** between traders on both sides of Kashmir. So far, 21 goods has been approved for barter.

- Since the Line of Control is disputed between India and Pakistan and not recognised as an International Boundary (IB), the goods are referred to as '**traded out'** and '**traded-in'**, instead of exports and imports.

- Also, unlike regular cross-border trade between India and Pakistan at the Wagah-Attari border, cross-LoC trade takes place only four days a week.

Significance of LoC Trade

- Cross border trade had proved it could be insulated from the ups and downs in the India-Pakistan relationship, and had begun to establish a "**bottom up" approach to peace-building**.

- It has generated **significant number of employment** across the border.

- Trade has attracted divided families and some former combatants and provided a **non-violent and alternative vision for change and conflict transformation**.

India Gets Access To Bolivia's Lithium

Syllabus: Effect of policies and politics of developed and developing countries on India's interests

In News

- India has signed a Memorandum of Understanding (MoU) with Bolivia for development and industrial use of lithium—a prime component used in batteries for electric vehicles.

- As per the US Geological Survey, **salt flats in the highlands of the Salar de Uyuni alone contain nine million tonnes of lithiu**m—over a quarter of the world's known deposits.

Significance

- Bolivia is estimated to hold over 60 per cent of the world's reserves for lithium, which is required for lithium-ion batteries for portable electronic and electric vehicles, but has not yet started producing it commercially.

- India is the second largest manufacturer of mobile phones in the world and has the ambitious goal of 30 per cent electric vehicles by 2030.

- But India imports all its lithium-ion batteries since India has no known sources of lithium, and zero lithium-ion battery manufacturing capabilities currently.

- Hence, India is heavily dependent on China, Taiwan and Japan for import, especially of batteries required for portable electronics.

- This partnership will make Bolivia one of the major providers of lithium for India's e-mobility and e-storage needs.

Qatar to Abolish Exit Visa System

Syllabus: Effect of policies and politics of developed and developing countries on India's interests

In News

- Qatar is set to **abolish its controversial exit visa system** for all foreign workers by the **end of 2019**.

- This would allow most workers to leave the country without exit permits from their employers.

Series of Labour Reforms

- In September 2018, Qatar approved legislation to scrap the **"kafala", or sponsorship system**.

- Qatar has introduced a **monthly minimum wage** of 750 riyals ($206).

- It also agreed to work closely with the ILO, which now has an office in the capital.

- Qatar has been selected **as the 2022 World Cup hos**t.

- Qatar committed to labour reform following an Amnesty International report that the 2022 World Cup host was failing to stop widespread labour abuse.

About Kafala System

- It is a sponsorship system which requires that foreign workers obtain permission from their employers to leave the country.

- Kafala means 'to guarantee' or '**to take care of' in Arabic**.

- Under the system, a migrant worker's immigration status is legally bound to an individual employer or sponsor ('kafeel') during the contract period.

- The migrant worker cannot enter the country, transfer employment nor leave the country for any reason without first obtaining explicit written permission from the kafeel.

- Many human right activists have termed this system as **modern-day slavery.** It also **restricts labour mobility** and hence affects the economy in longer run.

Indo-Pacific Wing

Syllabus: Effect of policies and politics of developed and developing countries on India's interests

In News

- Making a strong strategic statement, India has set up a new Indo-Pacific division in foreign office.

- This wing will specifically deal with the region's policies.

Key Highlights

- The new division is intended to give a coherent architecture to the policy, which was *articulated by PM Narendra Modi at the Shangri-La Dialogue in 2018*.

- The **division will integrate** the *Indian Ocean Rim Association (IORA), ASEAN region and the Quad (*a group of like-minded democracies comprises the US, Japan, India and Australia*) to the Indo-Pacific table*.

- As of now, it remains unclear whether the different trilateral groupings in the region, such as *India-Japan-US, India-Australia-Indonesia and India-Australia-Japan* would be part of this division's responsibility.

Significance Of This Step

- MEA's territorial division are **crucial for policy making**. Hence, the creation of an Indo-Pacific division is a big step.

- The move is an effort to bring the nations of the Indo-Pacific region **under one umbrella for greater cohesion and focus**.

- The US military in May 2018, renamed its Pacific Command the US Indo-Pacific Command. Although largely symbolic, it underscored the growing importance of India to the Pentagon.

- Hence, creation of a **point man in the form of secretary** for Indo-Pacific region is a laudable step.

- India has *not appointed a general or an admiral or created a military command* to deal with the Indo-Pacific. It highlights the fact that **India views this region as a diplomatic issue**.

Factors Which Led To A Rise In **India's** Role And Influence In The **Indo-Pacific** Region

- As India's **economy grows**, its influence in the region is also seeing a commensurate rise.

- India has set up **additional naval bases** recently in its strategically-located Andaman and Nicobar Islands, which lie very close to the Straits of Malacca.

- New Delhi's strategic relations with countries like the US and Japan are improving rapidly.

- Concerns over **Beijing's growing assertiveness** in the region have brought together India, Japan, Australia and the US together in the 'Quad'.

- New Delhi's **relations with regional grouping**s like the Association of South East Asian Nations (ASEAN) are also improving.

Challenges

- **Increased terrorism** in South Asia might bog down New Delhi in the subcontinent.

- **Many connectivity initiatives**, such as India-Myanmar-Thailand trilateral highway and the Indian-funded Kaladan Multi-Modal Transport Corridor Project in Myanmar, are **running behind schedule**.

- India faces **huge domestic challenges** although it has become the "fastest growing major economy in the world".

- In addition, New Delhi runs a **huge trade deficit** with countries like China.

- Although its relations with countries like Japan and Vietnam have improved, these have **not translated into big improvements** on the trade front in spite of the favourable government-to-government relations.

UN Arms Trade Treaty

Syllabus: Bilateral, regional and global groupings and agreements.

In News

- Donald Trump has announced that the **US will withdraw its support** for a **United Nations treaty regulating the global arms trade**.

- The US **signed the treaty in 2013** but never ratified it.

Analysis

- Trump government has described this agreement as a **misguided document** and an **intrusion on US sovereignty**.

- It also claimed that the treaty allows **foreign bureaucrats to trample on citizens' Second Amendment freedom**.

- However, many critics have termed this as yet another myopic decision that jeopardizes US security based on false premises and fearmongering.

- Un-signing the treaty will *undermine international peace and security, increase irresponsible and illegal sales of conventional weapons, and harm the American economy*.

- As the **biggest arms exporter**, the U.S. signature to the ATT was an important step towards **ensuring that dangerous weapons stay out of the wrong hands**.

- However, the current decision would **open floodgates for arms sales with weakened human rights criteria**, which could potentially fuel brutal conflicts, and make everyone less safe.

Multilateral Treaties from which USA has withdrawn:

- UN's migrant and refugee pact

- Trans-Pacific Partnership (TPP)

- Paris Agreement on Climate Change

- UN's culture and education body, UNESCO

- From Iran nuclear deal

- UN Human Rights Council

- Intermediate-Range Nuclear Forces treaty with Russia

About The Treaty

- The UN General Assembly adopted a historic Arms Trade Treaty on 2 April 2013.

- This is the **first-ever global treaty** to establish international norms aiming to prevent *conventional weapons from being used for war crimes and human rights abuses*, or *being diverted for illegal use.*

Key Facts About The Treaty

- The treaty was discussed at the global conference from in July 2012 in New York, however, no agreement was reached.

- The treaty came into effect in December 2014.

- The only nations opposed to the ATT were Iran, North Korea, and Syria.

- So far, while 130 countries have originally signed the treaty, only 101 ratified and joined it.

- The world's largest arms traders including the US, China and Russia have not joined the treaty.

Why India Abstained On Arms Trade Treaty

- India had been a vigorous participant in the Treaty's negotiating process.

- However, the final draft did not meet its expectations and it chose to abstain when the treaty was put to vote at the UNGA on the 2nd of April, 2013.

- As an arms importing state, India expected that the treaty **would ensure a "balance of obligations"** between exporting and importing states.

- However, India was disappointed with the outcome text which was **allegedly tilted in favour of the exporting states**.

- The treaty was designed in a way that it could be easily exploited as a justification to **unilaterally deny arms to an importing country**. This would **threaten India's national security** imperatives.

- The treaty **does not include non-state actors** in its purview, and therefore does not address the pressing **concern of illicit trafficking and use of conventional arms by non-state actors**. This is a major lacuna which may serve to make the treaty ineffective.

US Top Court Ruling Against Global Funding Agency

Syllabus: Important International institutions, agencies and fora- their structure, mandate.

In News

- The US Supreme Court ruled in **favour of a group of fishermen and a Gujarat village panchayat** in a suit against the **US-headquartered International Finance Corporation (IFC)**.

- The case relates to alleged pollution caused by a Gujarat-based power plant partly funded by IFC.

About The Project

- The coal-fired power plant is situated near **Mundra port in Gujarat's Kutch district** and with a **capacity of 4,150 MW.**

- It is the *country's first to deploy **energy-efficient supercrictical technology*** (which results in energy efficiency 40.5% higher compared to other coal-based power technologies).

- It was awarded in 2007 to Coastal Gujarat Power Limited, a subsidiary of Tata Power.

- It reached **full generation capacity in March 2013**, and has since been **selling power to utilities in Gujarat, Maharashtra, Haryana, Punjab and Rajasthan**.

Concerns of Fishermen

- The plant operates a cooling technology that requires much more water than the system it got clearance for.

- The water is eventually discharged into the sea, and the complainants have alleged that it has affected marine life.

Background

- **In 2015**, these fishermen filed a suit, through EarthRights International, against IFC in the Federal District Court for the District of Columbia.

- They contended that the funding agency should be held responsible for air, land and water pollution caused by the plant.

- IFC claimed **absolute immunity** from such litigation under the **US International Organisation Immunities Act (IOIA)**, 1945. The district court ruled in IFC's favour.

- In 2017, the petitioners moved the Court of Appeals for the district, which upheld the verdict. The petitioners then moved the US Supreme Court.

- In February 2019, the Supreme Court reversed the Appeals Court judgment.

- It ruled **IFC enjoys only "restrictive immunity" in activities abroad**, and remanded the matter back to the lower court for adjudication on damages.

Why This Judgement Is Important

- This judgement is termed as historic decision **making international organisations like the World Bank and its affiliates liable for legal action**.

- Till now, it was a widely held belief that international organisations enjoy absolute immunity.

- However, the top court has clarified that these organisations are granted same immunity from suit as is enjoyed by foreign governments.

- Foreign governments are **entitled to immunity only with respect to their sovereign acts**, not with respect to commercial acts.

- Hence, it opens the door for other such **lending organisations to be taken to court over negligence and funding without proper clearances**.

- It will bring **more accountability** among international organisations.

About IFC:

- IFC—a **sister organization of the World Bank** and **member of the World Bank Group**—is the largest global development institution focused exclusively on the private sector in

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developing countries.

- It is headquartered in **Washington, D.C., United States**.

- It offers investment, advisory, and asset management services to encourage private sector development in developing countries.

- It was established in 1956 as the private sector arm of the World Bank Group to advance economic development by investing in strictly for-profit and commercial projects.

3. <u>GS PAPER 3</u>

Economic Growth and Development

India's Foreign Trade

Syllabus: Indian Economy

In News

The Ministry of Commerce & Industry has released the exports and imports data for April-March 2018-19. India's overall exports (Merchandise and Services combined) in April-March 2018-19* are estimated to be USD 535 Billion, exhibiting a positive growth of about 8 per cent over the same period last year. Overall imports in April-March 2018-19 are estimated to be USD 631 Billion, exhibiting a positive growth of about 8.5 per cent over the same period last year.

*Note: Services data pertains to April-February 2018-19 as February 2019 is the latest data available.

Fact File

I. Merchandise Trade

Exports:

- **March 2019:** Export during March 2019 were USD 32.5 Billion exhibiting a positive growth of 11 per cent compared to March 2018. Major commodity groups of export showing positive growth were Organic & Inorganic chemicals, Engineering goods, RMG of all textiles, Drugs & Pharma and Petroleum products..

- **2018-19:** Cumulative value of exports for the period April-March 2018-19* was USD 331 Billion, exhibiting a positive growth of 9 per cent compared to April-March 2017-2018.

Imports:

- **March 2019:** Imports during March 2019 were US $ 43.4 Billion, which was 1.44 per cent higher compared to imports of March 2018.

- **2018-19:** Cumulative value of imports for the period April-March 2018-19* was USD 507 Billion, registering a positive growth of 9 per cent compared to April-March 2017-18.

II. Trade in Services:

- **Exports:** Exports in February 2019 were US $ 16.6 Billion registering a negative growth of 6.5 per cent, vis-à-vis January 2019.

- **Imports:** Imports in February 2019 were US $ 9.8 Billion registering a negative growth of 11 per cent, vis-à-vis January 2019.

III. Trade Balance

- **Merchandise**: The trade deficit for March 2019 was estimated at USD 10.9 Billion.

- **Services**: The trade balance in Services (i.e. Net Services export) for February, 2019 is estimated at US $ 6.8 Billion.

- **Overall Trade Balance:** Taking merchandise and services together, overall trade deficit for April-March 2018-19* is estimated at USD 96 Billion as compared to USD 86 Billion in April-March 2017-18.

Supreme Court Quashes RBI Circular On Insolvency

Syllabus: Indian Economy and Issues relating to mobilization of resources

In News

The Supreme Court set aside that the February 2018 circular issued by the RBI for the resolution of stressed assets, declaring it unconstitutional and ultra vires (acting or done beyond one's legal power or authority).

'February 12' Circular

- A notification was issued by the RBI on February 12, 2018, in line with the Insolvency and Bankruptcy Framework, laying down a revised framework for the resolution of stressed assets. The RBI circular introduced a new <u>one-day default norm</u> - meaning that the lenders must announce a company as a defaulter and a loan account (if worth Rs. 2,000 crore or more) as stressed even if it missed out on the repayment schedule by a day. In such cases, resolution must be finalized within 180 days, failing which the account would have to be referred to the National Company Law Tribunal (NCLT) under IBC to initiate insolvency proceedings. The circular was mainly meant to stop the "evergreening" of bad loans i.e. the practice of banks providing fresh loans to enable timely repayment by borrowers on existing loans.

- **Impact:** The circular went into effect on the same day that it was issued, and all existing schemes for stressed asset resolution such as Corporate Debt Restructuring and Strategic Debt Restructuring were withdrawn with immediate effect. More than 75 companies, mainly in infrastructure and power, faced insolvency proceedings owing to payment defaults. As per the some estimates, the total debt impacted by the circular was Rs 3.8 lakh crore.

SC Judgement

- **Case against the circular:** Some associations of power producers moved Supreme Court in August, 2018 challenging the constitutional validity of the RBI circular, claiming it was "manifestly arbitrary". They said that the general direction by the RBI, applying the 180-day limit to all sectors, without going into the special problems faced by each sector, would "treat unequals equally". The companies argued that the circular was arbitrary and discriminatory, and therefore, violative of Article 14 of the Constitution. For example, the power producers were not wilful defaulters, as the defaults arose because of extraneous reasons such as lack of availability of coal and gas, delay of payment by distribution companies controlled by states, tariff-related disputes etc.

- **Court declaring the circular ultra vires:** The SC said the February 2018 circular missed two vital factors required under Section 35AA of the Banking Regulation (Amendment) Act of 2017 from which the RBI circular sourced its power. The two factors as required under the law — authorisation of the government and "specific default" which was missing in the general nature of the circular — were missing from the 2018 central bank order. Thus the court held that any directions which are in respect of debtors generally, would be ultra vires Section 35AA.

Impact Of The SC Verdict

- All insolvency proceedings initiated against debtors under the circular become void.

- It will provide relief for stressed assets in sectors such as power, shipping sugar and fertilizer.

- It restores banks' discretion to take a call on whether to invoke insolvency proceedings in IBC on case to case basis.

- It could delay the process of stressed assets resolution.

- It weakens RBI's power to deal with Non Performing Assets.

Way Ahead

The RBI Governor said that the bank will take necessary steps including the issuance of a revised circular as may be necessary for the effective resolution of stressed assets. However, any circular is only expected to be out after the elections. It is also expected that RBI is likely to adopt a more accommodative approach towards resolution of stressed assets in the any new circular, including taking heed of suggestions made earlier by Indian Banking Association (IBA) for debt resolution for classification of NPA and resolution of bad assets. The banks may be given more time to identify and qualify an account as bad debt and also be given more time to resolve a case. However, the revised circular on NPAs, however, is unlikely to include the pre-IBC restructuring tools like Strategic Debt Restructuring (SDR), Corporate Debt Restructuring (CDR), Sustainable Structuring of Stressed Assets or S4A that were phased out by RBI earlier.

Final Analysis

After the court judgement, the RBI is extra careful to issue any other circular without proper consultation and vetting so that it is in accordance with the Banking Regulation (Amendment) Act of 2017. This could result in some delays, but ultimately better regulations would flow. It is unfair to punish companies where NPAs were not a result of mis-management but a result of government policy changes, failure to fulfil commitments by the government, delayed regulatory response, non-payment of dues etc. Any new circular must be fair and should not be in the nature of "one-solution-fits-all", but should consider the special problems faced by each sector.

RBI Study Finds Large Banks To Be More Efficient

Syllabus: Indian Economy and Issues relating to mobilization of resources
In News

- As per the RBI study on 'Labour Cost Efficiency of Indian Banks', large banks tended to be more efficient than small banks as they could reap the benefits of economies of scale. This provides further rationale for recent PSB mergers as well as future consolidation in the banking sector. The study analyzed the Indian banking system data for the period 2005-2018.
- With nearly 1.5 lakh branches1 of 159 scheduled commercial banks (SCBs) catering to the needs of about 1.3 billion people, the Indian banking system is one of the largest in the world. From 2005 to 2018, there has been increase in number of large banks (39 to 42) as well as small banks (37 to 42).

Findings Of The Study On 'Labour Cost Efficiency Of Indian Banks'

- **Large Banks more efficient than Small Banks:** Large banks were found to be more efficient than small banks. Larger banks are labour cost efficient relative to their smaller counterparts as larger banks could reap the benefits of economies of scale (a proportionate saving in costs gained by large business operations). This finding provides justification for mergers amongst both PSU banks and private banks. It suggests that further avenues of consolidation in the banking sphere may be explored.

- **Public sector banks more efficient than Private banks:** Contrary to popular perception, the study found that PSBs were more efficient than the private sector banks (PVBs). The labour cost efficiency (LCE), or output per employee, of PSBs was found higher than that of PVBs, mainly reflecting higher per-employee-output of the PSBs. The reason for this was the drop in employment growth and technology adoption to cut costs, while larger PSBs reaped the benefits of scale.

- **Labour Cost Efficiency moderated:** During the period 2005-2018 the labour cost efficiency of Indian banks moderated across all bank groups. The deterioration was especially marked during 2011-2016, a period that was characterized by severe stress in the banking sector.

Consolidation of PSBs

Recommendations For Mergers

- In 1991, <u>Narasimham</u> committee on banking sector reforms recommended mergers to form a three-tier structure with three large banks with international presence at the top, eight to 10 national banks at tier two, and a large number of regional and local banks at the bottom.

- The <u>Leeladhar Committee (2008)</u>, and the <u>PJ Nayak Committee (2014)</u> had also recommended consolidation of Public Sector Banks (PSBs) given underlying benefits/synergies.

Actual Consolidations

- In 2017, 5 state banks - State Bank of Bikaner & Jaipur, State Bank of Mysore, State Bank of Travancore, State Bank of Patiala and State Bank of Hyderabad were merged with the SBI, creating a bigger SBI that accounts for nearly a quarter of all outstanding loans in the country. Bharatiya Mahila Bank (BMB) was also merged with the SBI.

- In 2019, Vijaya Bank and Dena Bank were amalgamated with Bank of Baroda to create the country's third-biggest lender (after SBI and ICICI Bank) through alternate mechanism.

- More consolidations are expected to happen in the near future, with the government considering the merger of Punjab National Bank, Union Bank of India and Bank of India (BoI).

RBI Has Too Many Coins

Syllabus: Indian Economy and Issues relating to mobilization of resources

In News

At a meetings of the Currency and Coin (C&C) Division at the Ministry of Finance, the Reserve Bank of India raised the issue of oversupply of coins. The RBI had it its possession as many as 900 crore coins.

Coins

- **Minting:** The Government of India has the sole right to mint coins. The responsibility for coinage vests with the Government of India in terms of the Coinage Act, 1906 as amended from time to time. The designing and minting of coins in various denominations is also the responsibility of the Government of India. Coins are minted at the India Government Mints at Mumbai, Alipore (Kolkata), Saifabad and Cherlapally (Hyderabad) and NOIDA (UP) under Security Printing & Minting Corporation of India Ltd. (SPMCIL). SPMCIL is a Mini-Ratna Central Public Sector Enterprise (CPSE) wholly owned by Government of India and incorporated in 2006.

- **Distribution:** The coins are issued for circulation only through the Reserve Bank in terms of the RBI Act. Coins are received from the Mints and issued into circulation through its Regional Issue offices/sub-offices of the Reserve Bank and a wide network of currency chests and coin depots maintained by banks and Government treasuries spread across the country. There are 4422 currency chest branches and 3784 small coin depots spread throughout the country. The currency chests and small coin depots distribute coins to the public, customers and other bank branches in their area of operation.

Reasons For Too Many Coins With The RBI

- Higher production of coins following demonetisation
- The 'reverse flow' of coins where coins flow from the public back to the central bank
- General preference of currency notes over coins in the public
- Move towards cashless transactions

- RBI receiving oversupply of coins from the Mints while it only demanded 340 crore coins

- Banks around the country are also reluctant to accept coins owing to the fact that they have to allocate personnel to count them, as opposed to money counting machines for notes.

Solutions

- **Privatising distribution:** The government is looking at alternative modes of transportation, as well as privatising the distribution of coins. If such an alternate distribution channel proves to be more efficient and increases the usage of coins in India, necessary legal changes will be brought about.

- **Exports:** The government is also examining the potential for exporting coins to countries such as Brazil, Sri Lanka, and the Maldives.

Migration and Development Brief 2018

Syllabus: Effects of liberalization on economy

In News

- World Bank has released its latest Migration and Development Brief.

- The report highlighted that **remittances to low- and middle-income countries** reached a **record high in 2018**.

Key Highlights

- Officially recorded annual **remittance flows to low- and middle-income countries** reached $529 billion in 2018, an **increase of 9.6 percent** over the previous record high of $483 billion in 2017.

- **Global remittances**, which include flows to high-income countries, reached $689 billion in 2018, up from $633 billion in 2017.

- Regionally, growth in remittance inflows ranged from almost 7 percent in East Asia and the Pacific to 12 percent in South Asia.

- The overall increase was driven by a stronger economy and employment situation in the **United States** and a **rebound in outward flows** from some **Gulf Cooperation Council (GCC) countries and the Russian Federation**.

- **Top 5 remittance recipients** are - India ($79 billion), China ($67 billion), Mexico ($36 billion), the Philippines ($34 billion), and Egypt ($29 billion).

- The global average cost of sending $200 remained high, at around 7 percent in the first quarter of 2019.

- **Reducing remittance costs to 3 percent by 2030** is a global target under Sustainable Development Goal (SDG) 10.7.

- **Banks were the most expensive remittance channels**, charging an average fee of 11 percent in the first quarter of 2019.

- **Post offices** were the next most expensive, at over 7 percent.

India Specific

- India retained its position as the world's top recipient of remittances with its diaspora sending a whopping USD 79 billion back home in 2018.

- Over the last three years, India has registered a significant flow of remittances from USD 62.7 billion in 2016 to USD 65.3 billion 2017.

- Remittances grew by more than 14 percent in India, where a flooding disaster in Kerala likely boosted the financial help that migrants sent to families.

India's Electric Mobility Transformation

Syllabus: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

In News

- India could achieve high penetration of electric vehicles (EV) by 2030 on the back of the success of FAME II and other measures, according to a report by Niti Aayog and Rocky Mountain Institute. The report titled "India's Electric Mobility Transformation: Progress to Date and Future Opportunities" reflects on India's recent progress and the required next steps for moving towards an electric mobility future.
- **FAME II:** In March, 2019, the Union cabinet approved the implementation of a scheme titled **FAME India Phase II** (Faster Adoption and Manufacturing of Electric Vehicles in India Phase II) with a total outlay of Rs 10,000 Crores to be implemented over three years from 2019-20 to 2021-22. The main objective of the scheme is to encourage faster adoption of electric and hybrid vehicles by offering incentives for purchase of Electric vehicles and also by way of establishing a necessary charging infrastructure for electric vehicles. The current scheme FAME India I was launched in 2015 (ran from 2015 to 2018) to support hybrid/electric vehicles market development and Manufacturing eco-system.

India's Electric Mobility Transformation: Recent Policy Initiatives To Support Electric Mobility

- **Centre:** Several fiscal and non-fiscal measures have recently been put in place to support the adoption of electric mobility. The Ministry of Road Transport and Highways (MoRTH) announced that all battery-operated, ethanol-powered and methanol-powered transport vehicles will be exempted from the requirement of permits. The Minsitry of Power (MoP) issued a policy on charging infrastructure to enable faster adoption of EVs, and also said that no license is required to operate EV charging stations. The Ministry of Housing and Urban Affair (MoHUA) released an amendment of building code and town planning rules for provisioning of EV charging stations in private and commercial buildings. The Ministry of Finance (MoF) rationalized the customs duty for all categories of vehicles, battery packs and cells to support Make in India and incentivize uptake of electric vehicles. The Cabinet approved FAME II as well as the National Mission on Transformative Mobility and Battery Storage.
- **States:** Twenty seven states/UTs have developed strategy plans for transforming mobility to support their citizens with safe, inclusive, economic, and clean transport options.
- **Industry:** Established and new industry players in automotive, charging infrastructure, batteries and mobility services have been making investments and forging partnerships to develop and test new products and business models.

Potential Impact of Implementing FAME II:

- **Oil demand reduction:** Vehicles eligible under FAME II scheme can cumulatively save 5.4 million tons of oil equivalent over their lifetime, worth INR 17,200 thousand crores.
- **Net energy and emissions savings:** This would result in net reduction of 170 Petajoules of energy and 7.4 million tons of CO_2 emissions over the deployed vehicles' lifetime
- **Potential impact of FAME and other supportive policies on overall EV adoption rates:** EV sales penetration of 70% for commercial cars, 30% for private cars, 40% for buses, and 80% for 2 and 3 wheelers by 2030 could be attainable, with huge savings on oil demand, energy and emissions.

- Further, the effects of FAME II will go beyond just the vehicles that are eligible under this scheme. FAME II is intended to catalyze a market and establish the supportive ecosystem for it to develop.

Way Forward

In India, an EV ecosystem has been developing, including the formulation and implementation of policies and measures that can support early adoption of e-mobility solutions. Yet there is still work to be done to realize an electric mobility future for India.

- **Potential initiatives by industry:** The ease and speed of the electric mobility transition will require active participation from industry. The industry may benefit by working together to build a supportive ecosystem for electric mobility including a robust supply chain and an accessible charging infrastructure. This "coopetition" approach that stresses on cooperation where possible while maintaining some areas of competition will benefit all players as the market develops in its early stages. As electric vehicles are sensitive to weather and humidity conditions due to battery and electrical systems, an alliance between auto and battery manufacturers could be created to research Indian climate and use conditions and establish a series of recommendations for electric vehicles in India.

- **Potential government interventions:** Governments at all levels—central, state and city—have a role to play in the electric mobility transition. Some actions that government could take include incentives for directing or promoting industry, ensuring deployment of high-quality advanced batteries, ensure finance availability, particularly for commercial EVs, raising awareness, creation of Phased Manufacturing Plan etc.

Conclusion

With the support of government and industry, India can realize a shared, electric and connected mobility system. With the launch of FAME and multiple policies that provide fiscal and non-fiscal incentives, the vision of a transformed mobility system for India appears within reach. This transformation will potentially benefit the country by improving air quality, reducing oil imports, and creating jobs among other benefits.

World Economic Outlook April 2019

In News

- After peaking at close to 4 percent in 2017, global growth remained strong, at 3.8 percent in the first half of 2018, but dropped to 3.2 percent in the second half of the year, as per the World Economic Outlook (WEO) released by the International Monetary Fund (IMF).
- The World Economic Outlook (WEO) is a survey by the IMF staff published twice a year, in the spring and fall. The analysis and projections contained in the WEO are integral elements of the IMF's surveillance of economic developments and policies in its member countries, of developments in international financial markets, and of the global economic system.

World Economic Outlook April 2019

Global Prospects and Policies

- **Weakening growth:** Global growth is now projected to slow from 3.6 percent in 2018 to 3.3 percent in 2019, before returning to 3.6 percent in 2020. This represents the lowest level projected since the financial crisis, warning of significant downside risks to the world economy including trade tensions, pockets of political instability, mounting debt levels and increasing inequality. The IMF also cautioned growth in China could potentially see downside and that the risks from Brexit remain heightened. Beyond 2020, global growth is set to remain at about 3.6 percent over the medium term, mainly due to the increase in the relative size of economies, such as those of China and India,

which are projected to have robust growth while advanced and other emerging market economies will be slower-growing.

- **Recommendations:** Avoiding policy missteps that could harm economic activity needs to be the main priority. At the national level, this requires monetary policy to ensure that inflation remains on track toward the central bank's target and that inflation expectations remain anchored. It requires fiscal policy to manage tradeoffs between supporting demand and making sure that public debt stays on a sustainable path. Across all economies, the imperative is to take actions that boost potential output growth, improve inclusiveness, and strengthen resilience. At the multilateral level, the main priority is for countries to resolve trade disagreements cooperatively, without raising distortionary barriers that would further destabilize a slowing global economy.

India

- **Growth:** As per the revised estimates in the report, India's economic growth for 2018 will at 7.1 per cent, while growth is projected to pick up to 7.3 percent in 2019 and 7.5 percent in 2020. Despite this, the country will remain the fastest-growing large economy as the nearest competitor China's growth is pegged at 6.6 per cent, 6.3 per cent and 6.1 per cent for 2018, 2019 and 2020, respectively. The IMF said growth in India is expected to stabilise at just under 7.75 per cent over the medium term, based on the continued implementation of structural reforms and easing of infrastructure bottlenecks.

- **Recommendations:** The report said continued implementation of structural and financial sector reforms with efforts to reduce public debt remain essential to secure the Indian economy's growth prospects. In the near term, continued fiscal consolidation is needed to bring down India's elevated public debt. This should be supported by strengthening goods and services tax compliance and further reducing subsidies. The efforts like IBC to resolve NPAs should be reinforced by enhancing governance of public sector banks. Labour reforms to hiring and firing regulations would help incentivise job creation and absorb the country's large demographic dividend. Efforts on land reform should be intensified to facilitate and expedite infrastructure development.

Agriculture

Global Food Policy Report 2019

Syllabus: Public Distribution System; Issues of buffer stocks and food security

In News

- The Global Food Policy Report 2019 was recently released by the Washington DC based International Food Policy Research Institute (IFPRI).

- The report is the latest in an annual analysis of developments in food policy around the developing world, based on the most recent available evidence.

Highlights Of The Report

- Marked by deepening cycle of hunger and malnutrition, persistent poverty, limited economic opportunities, and environmental degradation, rural areas continue to be in a state of crisis in many parts of the world, threatening to slow the progress toward the Sustainable Development Goals, global climate targets, and improved food and nutrition security.

- Rural areas remain underserved compared to urban areas and face a wide array of challenges across the globe: rural areas struggle with environmental crisis in China; severe agrarian crisis in India, and acute shortage of jobs for the growing youth populations in Africa.

- A majority of the world's poor live in rural areas: rural populations account for 45.3 percent of the world's total population, but 70 percent of the world's extremely poor. The global poverty rate in rural areas is currently 17 percent, more than double the urban poverty rate of 7 percent.

- Besides being the most vulnerable and marginalised, rural population suffer from rapid population growth rates, inadequate job and enterprise creation, poor infrastructure and scarce financial services.

- Without innovative and holistic revitalisation approaches that leverage new opportunities and address growing challenges, achieving food security for all by 2030 will be difficult – perhaps even impossible.

Recommendations

- To overcome these challenges, the report calls for **rural revitalization**, highlighting policies, institutions, and investments that can transform rural areas into vibrant and healthy places to live, work and raise families.

- Revitalizing rural areas can stimulate economic growth and begin to address the crises in developing countries, and also tackle challenges holding back achievement of the SDGs and climate goals by 2030.

- The report emphasizes that rural areas could become premiere hubs of innovations in just under a decade. It recommends revitalizing rural areas with a focus on five building blocks: creating farm and non-farm rural employment opportunities; achieving gender equality; addressing environmental challenges; improving access to energy; and investing in good governance.

- It requires a holistic economic approach to connect rural and urban economies. Strengthening these connections can spur growth and diversification in the farm and non-farm sectors, closing socio-economic and quality-of-life gaps between urban and rural areas.

- It recommends investing efforts in reducing general disparities. Empowering women can improve agricultural productivity, overall well-being of mothers and children, and increase their capacity to contribute to rural revitalization.

- Beyond economic progress and human capital, rural environments must also be restored and improved to secure the many services they provide. To engage rural residents as custodians of valuable natural resources, their rights to these resources should be recognized in law and practice.

- Achieving these policy goals require investments in good governance. The report identifies three aspects of governance critical for rural revitalization: appropriate and predictable laws and regulations; effective policy implementation and enforcement; and accountability of those in positions of power and authority.

IFPRI

- The **International Food Policy Research Institute** (**IFPRI**) is an international agricultural research center founded in 1975 to improve the understanding of national agricultural and food policies to promote the adoption of innovations in agricultural technology.

- Additionally, IFPRI was meant to shed more light on the role of agricultural and rural development in the broader development pathway of a country.

- The mission of IFPRI is to provide research-based policy solutions that sustainably reduce poverty and end hunger and malnutrition

Global Report On Food Crises 2019

Syllabus: Public Distribution System; Issues of buffer stocks and food security

In News

● This year's Global Report on Food Crises released by Food Security Information Network (FSIN) highlights the plight of millions of people who must fight every day against acute hunger and malnutrition.

● Analysing 53 countries, it uses a five-phase scale with the third level classified as crisis, fourth as emergency and fifth as famine/catastrophe.

Report Highlights

● Around 113 million people in 53 countries experienced acute food insecurity in 2018, requiring urgent food, nutrition and livelihoods assistance.

● The figure represents a slight improvement over the last year's report, in which an estimated 124 million people in 51 countries faced acute hunger.

● Despite the slight decrease, over the past three years, the report has consistently shown that, year on year, more than 100 million people (2016, 2017 and 2018) have faced periods of acute hunger. The modest decrease between 2017 and 2018 is largely attributed to changes in climate shocks.

● A number of highly exposed countries did not experience the intensity of climate-related shocks and stressors that they had experienced in 2017 when they variously faced severe drought, flooding, erratic rains and temperature rises brought on by the El-Nino of 2015-16.

● The worst food crises in 2018, in order of severity, were: Yemen, the Democratic Republic of Congo, Afghanistan, Ethiopia, the Syria, the Sudan, South Sudan and northern Nigeria.

● These eight countries accounted for two thirds of the total number of people facing acute food insecurity – amounting to nearly 72 million people.

● An additional 143 million people in a subset of 42 countries were found to be living in stressed conditions on the cusp of acute hunger. They risked slipping into crisis or worse if faced with a shock or stressor.

● High levels of acute and chronic malnutrition in children living in emergency conditions remained of grave concern. Conflict and insecurity, climate shocks and economic turbulence the main drivers of food insecurity continued to erode livelihoods and destroy lives.

Need For The Report

● For several years the number of people who cannot meet their daily food needs without humanitarian assistance has been rising.These growing needs have been reflected in the increasing level of international humanitarian assistance, which reached US$27.3 billion in 2017, up from US$18.4 billion in 2013.

● While critical to saving lives and alleviating human suffering, humanitarian assistance does not address the root causes of food crises. Hence, the idea is to move from delivering aid to ending need.

● The report contributes to humanitarian development efforts by providing the global and national food security community with timely, independent and consensus-based information on the severity, magnitude and drivers of food insecurity and malnutrition in food crisis contexts.

● The information also helps to plan and fund evidence-based responses, while using the data to seek high-level political action for durable solutions to food crises.

Way Ahead

● Empowering women, nourishing and educating children, improving rural infrastructure and reinforcing social safety-nets are essential for a resilient, stable and hunger-free world.

● Investments in conflict prevention and sustaining peace will save lives and livelihoods, reduce structural vulnerabilities and address the root causes of hunger.

● The report highlights the need for a strengthened cooperation between humanitarian, development and peace actors to reverse and prevent food crises. A stronger global network will help in delivering change on the ground for the people who really need it.

FSIN

● The Food Security Information Network (FSIN) is a global initiative co-sponsored by the United Nations' Food and Agriculture Organization (FAO), the World Food Programme and the International Food Policy Research Institute to strengthen food and nutrition security information systems for producing reliable and accurate data to guide analysis and decision-making.

● It serves as a neutral technical platform for exchanging expertise, knowledge and best practices, developing harmonized methods and tools, and facilitating capacity development on food and nutrition security measurement and analysis.

Technology

New State Of Matter

Syllabus: Science and Technology- developments and their applications and effects in everyday life

In News

● Scientists have discovered a new state of physical matter in which atoms can exist as both **solid and liquid simultaneously**.

● Applying high pressures and temperatures to potassium -- a simple metal -- creates a state in which most of the element's atoms form a solid lattice structure. However, the structure *also contains a second set of potassium atoms that are in a fluid arrangement*.

● The structure formed represent the new stable state of matter, known as the **chain-melted state**.

● Until now, scientists were not sure whether those intermediate states were their own state of matter, or if they just represented a transition between the two.

● New research clears up that dispute, and point to the fact that it is a distinct state of matter. It would be like holding a sponge filled with water that starts dripping out, except the sponge is also made of water.

● Under the right conditions, over half a dozen elements -- including sodium and bismuth -- are thought to be capable of existing in the newly discovered state.

● Now researchers also hope that it can be further examined to find more uses for the unexpected discovery.

Exotic States:

Other unusual states of matter beyond gas, liquid, and solid -

● **Plasma:** A superheated form of gas in which atomic nuclei are separated from their electrons, meaning they can generate and be affected by electric and magnetic fields.

● **Bose-Einstein condensate:** Only formed at temperatures close to absolute zero, all the atoms in this material begin to act as a single particle.

● **Superconductor:** A state achieved when certain metals are cooled to low temperatures, and

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electricity can move through them with no resistance.

- **Superfluid:** A liquid cooled to near absolute zero, so that it can flow without friction, even climbing up the sides of a container and dripping down the outside.

- **Degenerate matter:** Only found under the extremely high pressures achieved in white dwarfs and neutron stars, two types of dead stars.

- **Quark-gluon plasma:** A state in which protons and neutrons dissolve into their constituent quarks, which can move freely among particles called gluons that carry the strong force.

Homo Luzonensis

Syllabus: Science and Technology- developments and their applications and effects in everyday life

In News

- A **new species of ancient human**, has been discovered **in the Philippines**, providing a twist in the story of human evolution.

- The specimen, named **Homo luzonensis**, was excavated from *Callao cave on Luzon island in the northern Philippines* and has been dated to 50,000-67,000 years ago when modern humans and the Neanderthals were spreading across Europe and into Asia.
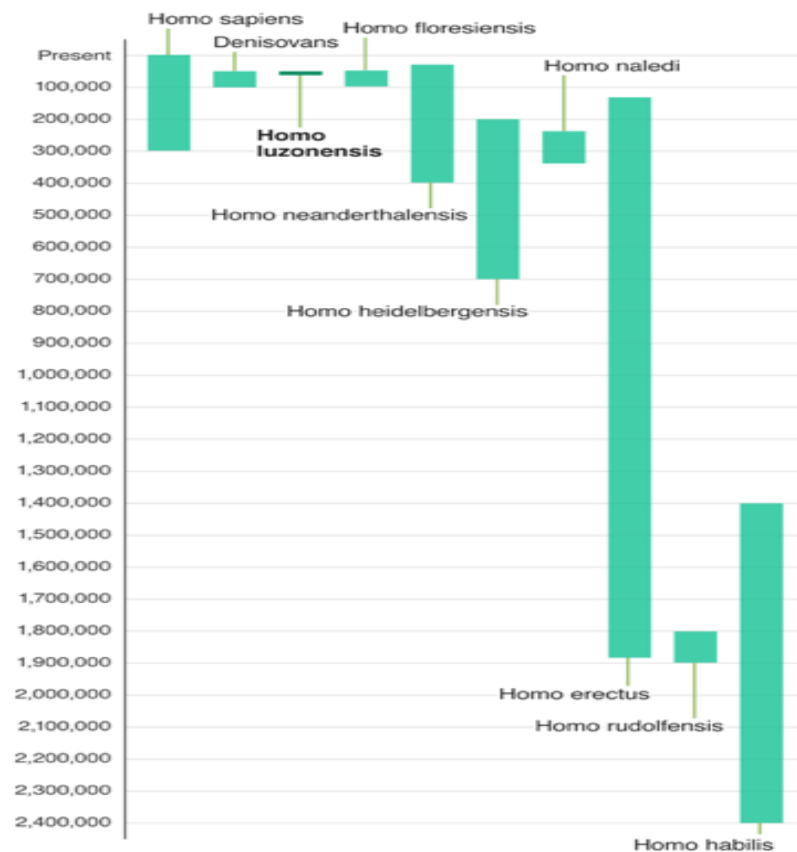
Findings

- The excavation **did not yield a complete skeleton**: seven teeth, two hand bones, three foot bones and one thigh bone were found, thought to belong to two adults and one child. Nevertheless, the fossils provide intriguing clues to the appearance and lifestyle of Homo luzonensis.

- Homo luzonensis has some physical similarities to recent humans, but in other features hark back to the australopithecines, upright-walking ape-like creatures that lived in Africa between two and four million years ago, as well as very early members of the genus Homo.

- The finger and toe bones are curved, suggesting climbing was still an important activity for this species. This also seems to have been the case for some australopithecines.

Twists In The Evolutionary Tale

- The discovery provides the latest challenge to the fairly

Human evolution
Where Homo luzonensis sits in the human family tree

Source: Smithsonian Institution

straightforward prevalent narrative of human evolution.

- **Homo erectus** has long thought to have been the first member of our direct line to leave the African homeland - around 1.9 million years ago. *If australopithecine-like species were able to reach South-East Asia, it would change the theory about who in the human family tree left Africa first.*

- It is also not known whether the new species, represent earlier dispersals from Africa than Homo erectus, or whether they are descendants who later shrank and evolved new anatomical traits.

- Another mystery is how they arrived at Luzon, a large island that has never been connected to the mainland by a land bridge.

- One possibility is that the early humans set out to sea intentionally on some form of raft; another is that they were washed there in relatively large numbers due to a natural event such as a tsunami.

- It is now evident that it was a much more complex evolutionary history with several distinct species contemporaneous with *Homo sapiens*, interbreeding events and extinctions.

- Homo luzonensis is one of those species and it will increasingly get clear that a few thousand years back in time, Homo sapiens was definitely not alone on Earth.

Café Scientifique

Syllabus: Science and Technology- developments and their applications and effects in everyday life

In News

- A group of science experts of the **Hume Centre for Ecology and Wildlife Biology** have launched **Café Scientifique** in the **state of Kerala** to promote science among public in an interesting way.

- It is a **grassroots public science initiative** based on the French Café Philosophique model. Originating in England, the concept quickly gained popularity and was adopted by other countries.

- It envisages to **bring science back into popular culture** by demystifying scientific research for the public and empowering non-scientists to comfortably assess science and technology issues, particularly those that impact social policy making.

- It aims at making science relevant, powerful and important to the public, especially the younger generations.

- Meetings of science enthusiasts *will be organised in the district every month at a café* or a convenient place, where one or more scientists will be invited to talk to the public about new developments in science.

- Various topics such as universe, climate change, evolution, genetics and human-animal relations will be discussed in the monthly gatherings.

Most Ancient Molecule Discovered

Syllabus: Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-tech etc

In News

- Scientists have revealed that the most ancient type of molecule in the universe has been detected in space for the first time ever backing up theories of how the early chemistry of the universe developed after the big bang.

- The positively charged molecule known as **helium hydride** is believed to have played a starring role in the early universe forming when a helium atom shared its electrons with a hydrogen nucleus or proton.

- Not only is it thought to be the **first molecular bond**, and **first chemical compound**, to have appeared as the universe cooled after the big bang, but it also opened up the path to the formation of molecules of hydrogen.

- Data was collected using an instrument onboard **mission SOFIA**, a joint project between NASA and the German Aerospace Center, in which a specially modified aircraft was flown very high up in the Earth's atmosphere, up to about 13,700 metres (45,000ft), carrying a 2.7-metre telescope.

- At this height, the instruments are above the vast majority of the Earth's water vapour, which would otherwise obscure signals from other molecules.

- The molecule was spotted in a *small but bright 600-year-old planetary nebula* about 3,000 light years away in the **constellation of Cygnus**.

- While helium hydride was produced in the laboratory almost a century ago, it has proved elusive to detect in space, despite predictions that it should be present in gas clouds in which stars are born, as well as in gas expelled by stars as they die.

- Although it is of limited importance on Earth today, the chemistry of the universe began with this ion and the lack of definitive evidence for its very existence in interstellar space has been a dilemma for astronomy.

- It is therefore a significant achievement to finally discover one of the building blocks of the molecular universe.

EMISAT

Syllabus: Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-tech etc

In News

- The Indian Space Research Organisation (ISRO) recently launched the **country's first electronic surveillance satellite**, **EMISAT**, onboard the PSLV-C45 rocket from Sriharikota in coastal Andhra Pradesh.

- As many as 28 small satellites of international customers were also put in space as secondary riders.

- Space-based electronic intelligence or ELINT will add teeth to situational awareness of the Armed Forces as it will provide location and information of hostile radars placed at the borders. This will be another dimension to current land or aircraft-based ELINT.

- EMISAT was successfully placed in its intended sun-synchronous polar orbit of 748 km height.

Unique Features

- The fourth and last stage of the rocket **will function as a satellite itself for some time**, instead of being rendered junk after ejecting its payloads.

- ISRO holds the world record for carrying the number of satellites on a single launch vehicle — 104 on PSLV C-37 in February 2017. However, so far, these satellites have been ejected in two different orbits at the most.

- It was the **first time ISRO launched a rocket that injected satellites in three different orbits**.

- Among other firsts, the **rocket carried four strap-on motors**. Strap-ons are booster rockets attached externally to the main rocket, and provide additional thrust, or energy, by firing themselves midway during the flight.

- The four extra-large strap-ons used this time reduced the overall weight while still delivering the power equivalent to six motors.

- For enabling each of the two revolutions around Earth, **the fourth-stage engines were reignited, which again was a first**. Earlier missions used to be single-shot operations in which the engines used to fire just once.

Significance

- Reaching three different orbits gives ISRO a new technological edge.

- It demonstrated its **capability to reuse the fourth-stage engines** multiple times, and also showed that the guidance and navigation systems aboard the launch vehicle could be used for much longer times than in earlier missions.

- In practical terms, it will help ISRO pack its **future rockets with multiple satellites even if they require to be placed in very diverse but precise orbits**. Currently, this could be done only in multiple missions.

- The rocket, or the launch vehicle, is only a carrier. Once it places its passenger, or satellite, to its designated orbit in space, it becomes practically useless, adding to the space debris. The uppermost stage, however, can be used, at least temporarily. Previously, they would end up in some orbit to wander aimlessly and endlessly.

First Picture of a Black Hole

Syllabus: Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-tech etc

In News

- NASA recently released the first ever photograph of a black hole and its shadow. The photograph was captured by an *international network of radio telescopes* called the **Event Horizon Telescope (EHT).**

- The image released shows the shadow of a **supermassive black hole in the centre of Messier 87** (M87*), an elliptical galaxy some 55 million light-years from Earth*. This black hole is 6.5 billion times the mass of the Sun and one of the biggest ones known.

Black Hole

- A black hole is a region of space-time with extreme density and exhibiting gravitational acceleration so strong that nothing—no particles or even electromagnetic radiation such as light—can escape from it. It is also described as a region of very **severely curved space-time**.

- The boundary of the black hole is known as the **event horizon — the point of no return**. Matter that crosses the event horizon can never return outside. It is called black because it absorbs all the light that hits it, reflecting nothing, just like a perfect black body in thermodynamics.

- In the centre of a black hole is a **gravitational singularity, a one-dimensional point** which **contains huge mass in an infinitely small space, where density and gravity become infinite and space-time curves infinitely**, and where the laws of physics as we know them cease to operate.

- It was earlier believed that black holes stuck around forever. But Stephen Hawking, showed that black holes actually emit a kind of radiation (now known as **Hawking radiation**). This radiation carries away energy, which means that, over very long time scales, black holes should simply evaporate away into nothingness.

Development of The Black Hole Theory

- Objects whose gravitational fields are too strong for light to escape were first considered in the 18th century.

- Albert Einstein first predicted black holes in 1916 with his general theory of relativity.
- The first modern solution of general relativity that would characterize a black hole was found by Karl Schwarzschild in 1916, although its interpretation as a region of space from which nothing can escape was first published in 1958.
- The term black hole was coined in 1967 by American astronomer John Wheeler and the first one was discovered in 1971.

How Are Black Holes Formed

- When a sufficiently massive **star exhausts its nuclear fuel supply**—that is, when it can no longer produce energy by means of a fusion reaction in its core—it explodes (this is called a supernova, in which the star sheds material from its outer layers); the remaining core then contracts, due to gravity.
- If the star is more than **about 20 times as massive as the Sun**, then nothing can stop this contraction, and the star collapses until it is smaller than its own event horizon, becoming a black hole. These are called **stellar-mass black holes**, since their masses are on par with the masses of stars.
- But there are also giant black holes, with masses equal to that of millions of stars. These supermassive black holes are believed to be located in the centers of most galaxies, including the Milky Way.
- Scientists are not certain how such large black holes spawn. Once they have formed, they gather mass from the dust and gas around them, material that is plentiful in the center of galaxies, allowing them to grow to enormous sizes.
- Primordial black holes are the smallest kinds, and range in size from one atom's size to a mountain's mass.

Visibility of Black Holes

- Since black holes emit no light, there's no way to see them directly. However, astronomers have been able to infer their existence based on observations of ordinary stars that orbit a **black hole as part of a binary star system**.
- Sometimes the black hole swallows material from the companion star. As this material swirls around the black hole, it heats up due to friction; as a result, it emits X-rays, which can be detected from Earth. This is how the first black hole to be detected, known as **Cygnus X-1**, was found.
- Despite its invisible interior, the presence of a black hole can be inferred through its interaction with other matter and with electromagnetic radiation such as visible light. Matter that falls onto a black hole can form an external accretion disk heated by friction.

Event Horizon Telescope

- Scientists had calculated that a high resolution picture, like the current one required a telescope **whose antenna was as large as Earth itself**.
- They decided to use eight of the biggest and most sophisticated radio telescopes in the world, and linked them with a technique that could make them act like a virtual Earth-sized telescope.
- The telescopes made simultaneous recordings of the radiations coming in from the black hole region. Each of the telescopes was fitted with atomic clocks so that their recordings could later be matched with extreme precision.
- It took two years for some of the world's fastest supercomputers to process the huge amount of data and recreate the image of the black hole in the M87 galaxy.

- Scientists have been using computer-simulated images of black holes for several years to study these regions.
- For the first time, they have an actual image. This can provide a test for existing theories of the universe, and lead to a better understanding of black holes and the nature of the universe itself.

Curbing Antibiotics Resistance

Syllabus: Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-tech etc

In News

- In a path-breaking discovery, scientists at Centre for Cellular and Molecular Biology (CCMB) have come up with a way to inhibit the multiplication of bacteria even before the cell wall begins to grow.
- Scientists all over the world are trying to know how cells grow in bacteria to understand the anti-bacterial resistance to currently available antibiotics.

Working

- Scientists at CCMB focused on how the cell governs the synthesis machinery to build the cell wall, then identified the principal players behind this process, and discovered a new mechanism by which the cell regulates the growth of its cell wall.
- The scientists have discovered a new enzyme which helps in breaking cell walls of bacteria and hence, offers a potential for a new drug delivery route to arrest the anti-bacterial resistance through existing antibiotic drugs.
- The classical antibiotic drugs **target the last stage of cell synthesis** to prevent cell growth like penicillin that hits the machinery that creates the cell wall — a mesh-like structure of cross-linked sugars and peptides.
- But the current research shows how to target cell-wall formation at the beginning itself, earlier than when the present set of antibiotics act and this can help combat harmful bacteria effectively in the wake of several strains of bacteria developing resistance to antibiotics.
- Now the next step is to find out the molecule of the enzyme endo-pepcidine and it has to be followed by the drug trials to unravel a new combination of drugs to replace existing antibiotics.

CCMB

- The Centre for Cellular & Molecular Biology (CCMB) is a premier research organization in frontier areas of modern biology.
- CCMB was set up initially as a **semi-autonomous Centre on in 1977** with the Biochemistry Division of the then Regional Research Laboratory (presently, Indian Institute of Chemical Technology, IICT) Hyderabad forming its nucleus.
- During 1981-82, the CCMB was accorded the **status of a full-fledged national laboratory** with its own Executive Committee and Scientific Advisory Council.

Genome Sequencing

Syllabus: Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-tech etc

In News

- In an indigenous genetic mapping effort, *nearly 1,000 rural youth from the length and breadth of India will have their genomes sequenced* by the Council of Scientific and Industrial Research (CSIR).

● Those recruited as part of genome-sample collections are **representative of the country's population diversity**. In this case, the bulk of them will be college students, both men and women, and pursuing degrees in the life sciences or biology.

● Genomes will be sequenced based on a blood sample and the scientists plan to hold at least 30 camps covering most States.

● The project would involve the Hyderabad-based Centre for Cellular and Molecular Biology (CCMB) with the sequencing to be done at the IGIB and the CCMB.

● The project is an adjunct to a **much larger government-led programme**, still in the works, **to sequence at least 10,000 Indian genomes**.

● Every person whose genomes are sequenced will be given a report and the participants would be told if they carry gene variants that make them less responsive to certain classes of medicines.

Significance Of The Project

● Globally, many countries have undertaken genome sequencing of a sample of their citizens to determine unique genetic traits, susceptibility (and resilience) to disease.

● However, this is the first time that such a large sample of Indians will be recruited for a detailed study. In the process, the project would prove *India's capabilities* at executing whole genome sequencing.

● It aims to **reach out to a lot of students**, educate them about genomics and put a system in place that allows them to access information revealed by their genome.

● As genomics is largely confined to a rich urban demographic in India, this exercise, would make such **information ubiquitous even to villages**.

● A **baseline Indian population** can be established, of which novel questions can be asked. For instance, in developed countries diarrhoeal infections are rarer than in India. Do genes have a role to play in such manifestations?

● Further, **health changes of people** can be tracked over a long period.

Genome Sequencing

● Nearly every cell in the human body—from the ones in the fingernails to the ones deep inside the brain contains a complete set of DNA, the operating instructions that influence everything from a person's hair color to susceptibility to disease.

● Genome sequencing is figuring out the order of DNA nucleotides, or bases, in a genome, the order of adenine (A), thymine (T), cytosine (C) and guanine (G) that make up an organism's DNA. The human genome is made up of over 3 billion of these genetic letters.

● Genome sequencing *is often compared to decoding*, but a sequence is still very much in code. It is like reading a book one letter at a time to look for any spelling mistakes.

● While reading a sentence, the meaning is not just in the sequence of the letters. It is also in the words those letters make and in the grammar of the language. Similarly, the human genome is more than just its sequence.

● So sequencing the genome does not immediately lay open the genetic secrets of an entire species.

● Even with a rough draft of the human genome sequence in hand, much work remains to be done. Scientists still have to translate those strings of letters into an understanding of how the genome works, what the various genes that make up the genome do, how different genes are related, and how the various parts of the genome are coordinated.

Importance of Genome Sequencing

- The primary purpose of sequencing one's genome is to obtain information of medical value for future care. It can provide information on genetic variants that can lead to disease or can increase the risk of disease development, even in asymptomatic people.

- Another advantage is that information regarding drug efficacy or adverse effects of drug use can be obtained. The *relationship between drugs and the genome* is called **pharmacogenomics**.

- The genome sequence will represent a valuable shortcut, helping scientists find genes much more easily and quickly. A genome sequence does contain some clues about where genes are, even though scientists are just learning to interpret these clues.

- Scientists also hope that being able to study the entire genome sequence will help them understand how the genome as a whole works, how genes work together to direct the growth, development and maintenance of an entire organism.

- Finally, **genes account for less than 25 percent of the DNA** in the genome, and so knowing the entire genome sequence will help scientists study the **parts of the genome outside the genes**.

- This includes the regulatory regions that control how genes are turned on and off, as well as **long stretches of junk DNA**—so called because it is not yet known, what, if anything, it does.

Cell Based Meat

Syllabus: Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-tech etc

In News

- Indian scientists have begun work on '**cultured meat**' — meat made by cells extracted from animals.

- The Cellular and Molecular Biology (CCMB), in collaboration with the National Research Centre on Meat (NRCM), has initiated research aimed at producing **meat through cellular agriculture or cells sourced from animals** and later cultivated into meat.

- It can also be called **cell-based meat or 'clean meat'** which will be is nutritionally equivalent to conventional animal meat.

- The taste, look and smell of cell-based meat will be exactly like real meat. The method can revolutionise food systems and can *address concerns relating to food security*, environmental sustainability and animal welfare.

- The advantage of cell-based meat is that animals will not be slaughtered. It is already happening across the world as governments have realized that protecting biodiversity is very important for coming generations

- Cell-based meat companies in **Netherlands, Israel and Japan** are receiving support from their governments, while regulatory authorities in America USA are in the process of developing a framework for cell-based meet.

- CCMB has also signed an agreement with HSI to launch a **Centre for Predictive Human Model Systems**.

- The centre will enable a shift in scientific research by focusing on new methodologies instead of animal models. It aims to stop using animals in research purposes.

- The alternative testing method would be to test the human cells and convert them into organoids (a miniature and simplified version or an organ produced in vitro in three dimensions that shows realistic micro anatomy)

3D Printed Heart

Syllabus: Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-tech etc

In News

● In a major medical breakthrough, researchers at Tel Aviv University have printed the world's **first 3D vascularised engineered heart** using a patient's own cells and biological materials.

● Until now, scientists in regenerative medicine — a field positioned at the crossroads of biology and technology — have been successful in printing only simple tissues without blood vessels.

● While people have managed to 3D-print the structure of a heart in the past, they have not done so with cells or with blood vessels.

● This is the *first time anyone anywhere has successfully engineered and printed an entire heart replete with cells, blood vessels, ventricles and chambers.*

● The result demonstrates the potential for engineering personalized tissue and organ replacement in the future

● Heart transplantation is currently the only treatment available to patients with end-stage heart failure. Given the dire shortage of heart donors, the need to develop new approaches to regenerate the diseased heart is urgent.

● The heart is made from human cells and patient-specific biological materials. In the process these materials serve as the bioinks, substances made of sugars and proteins that can be used for 3D printing of complex tissue models.

● The biocompatibility of engineered materials is crucial to eliminating the risk of implant rejection, which jeopardizes the success of such treatments. Ideally, the biomaterial should possess the same biochemical, mechanical and topographical properties of the patient's own tissues.

● At this stage, the 3D heart is small, the size of a rabbit's heart but larger human hearts require the same technology. The researchers are now planning on culturing the printed hearts in the lab and teaching them to behave like hearts and then they plan to transplant the 3D-printed heart in animal models.

● It is hoped that in the future, there will be organ printers in the finest hospitals around the world and these procedures will be conducted routinely.

Kandhamal Haldi Gets GI Tag

Syllabus: Awareness in the fields of IT, Space, Computers etc and issues relating to IPR.

In News

● **Kandhamal Haldi**, a variety of turmeric indigenous to southern Odisha, has earned the Geographical indication (GI) tag from Intellectual Property India, an organisation functioning under the auspices of the Union ministry of commerce & industry.

● The recognition coincided with the state's Foundation Day (Utkal Divas). Odisha, on April 1 1936, was carved out as a separate state in the then British India on a linguistic identity.

● Kandhamal in Odisha's southern hinterland is famed for its turmeric, a spice that enjoys its pride of place in an array of cuisines. The agricultural product also stands out for its healing properties and arresting aroma.

● Produced by the tribal farmers in Odisha's Kandhamal district, its cultivation is environmentally resilient having low risk, high productivity and the crop is sustainable in adverse climatic conditions.

● Kandhamal turmeric contains special medicinal values and has very high potentiality for medicinal use and industrial utility.

Pepsico Sues Farmers

Syllabus: Awareness in the fields of IT, Space, Computers, robotics etc and issues relating to IPR.

In News

● PepsiCo India had recently sued farmers from Gujarat for using its proprietary **FL 2027 also known as FC5 variety of potato**, which goes into making Lay's chips, without the company's consent.

● PepsiCo enjoys IPR protection in India for FL 2027, *a potato variety with high dry matter and low sugar content that is better suited for making chips* (normal table potatoes have more moisture, which adds to dehydration and energy costs during processing, and higher sugar that causes blackening on frying)

Pepsico's Stand

● The dominant framework of international intellectual property law — **TRIPS (Trade Related Aspects of Intellectual property Rights)** and the **UPOV (Union for the Protection of Plant Varieties)** — gives plant breeders exclusive rights over the varieties they develop, and mostly disregards customary rights of indigenous and farming communities to their genetic resources and associated knowledge.

● Such protection is, indeed, required for incentivising agricultural research and development of new plant varieties by breeders, both in the private and public sectors.

● Under the **Protection of Plant Varieties and Farmers' Rights Act, 2001**(PPVFRA), over 3,500 varieties across a range of crops, including those bred or improved by individual farmers, have so far been granted registration certificates for up to 15 years.

● These certificates confer on the breeders the exclusive rights over commercial production, sale, marketing, distribution, export and import of their protected varieties.

● Further, the company claims to be working with some 24,000 farmers across nine states: It's fair to assume that the farmers benefit from the arrangement, both on account of being insulated from open market price fluctuations and also receiving quality farm inputs and extension support.

Farmer's Defence

● However, the PPVFRA *simultaneously entitles farmers to save, use, sow, re-sow, exchange, share or sell the produce and seeds of any variety protected under the Act*.

● Such freedom is conditional only upon no sale of such seeds in branded form, in other words, being put in a package or any other container and labeled.

● Farm activists have also argued that while the potato variety was introduced in India in 2011, it was only registered five years later in 2016; therefore, it is natural that it spread among farmers who are not under any contractual arrangement with the company.

● It is clear from this that the Gujarat farmers had not committed any IPR infringement by merely growing FL 2027 potato, even if without PepsiCo's authorisation.

Current Situation

After a social media campaign took off asking consumers to boycott PepsiCo products, the expected has happened, and the local unit of PepsiCo has agreed to withdraw the lawsuits backtracking from its position.

Way Ahead

● India has to invest more in public research since it is only natural that private companies are not keen to bring new technology.

● The controversy surrounding Monstanto's Bt cotton—and consequently India's agriculture ministry regulating royalties payable to the company—is a case in point.

● The way to reduce corporate dominance over agriculture is by increasing investments in public research, not by arm-twisting or surrendering to farmer-friendly optics.

PPVFRA

● PPVFRA was enacted in 2001, adopting a **sui generis system (one that is of its own kind)**.

Objectives

● To establish an effective system for the **protection of plant varieties**, the **rights of farmers and plant breeders** and to **encourage the development of new** varieties of plants.

● To recognize and protect the rights of farmers in respect of their contributions made at any time in conserving, improving and making available plant genetic resources for the development of new plant varieties.

● To accelerate agricultural development in the country, protect plant breeders' rights; stimulate investment for research and development both in public & private sector for the development new of plant varieties.

● Facilitate the growth of seed industry in the country, which will ensure the availability of high quality seeds and planting material to the farmers.

Environment and Biodiversity

State Of The Global Climate

In News

The World Meteorological Organization (WMO) has published its Statement on the state of the global climate in 2018. Key findings of this Statement include the record warming, the continuous upward trend in the atmospheric concentration of the major greenhouse gases, the increasing rate of sea-level rise and the loss of sea ice in both northern and southern polar regions.

Statement On The State Of The Global Climate In 2018

The World Meteorological Organization (WMO) is the United Nations' authoritative voice on weather, climate and water. Every year, WMO issues a Statement on the State of the Global Climate based on data provided by National Meteorological and Hydrological Services and other national and international organizations. The 2019 publication (of 2018 data) marks the twenty-fifth anniversary of the WMO Statement on the State of the Global Climate, which was first issued in 1994. Through these reports, substantial knowledge has been produced and delivered annually to inform WMO Member States, the United Nations system and decision-makers about the status of the climate system, and the year-to-year variations and long-term trends of a changing climate.

Findings Of The Report

State-Of-The-Climate Indicators

• **Temperature:** The year 2018 was the fourth warmest on record and the past four years – 2015 to 2018 – were the top four warmest years in the global temperature record. Average global temperature reached approximately 1 °C above pre-industrial levels.

- **GHGs:** Carbon dioxide levels, which were at 357 parts per million when the statement was first published in 1994, keep rising – to 405.5 parts per million in 2017. For 2018 and 2019, greenhouse gas concentrations are expected to increase further. Increasing levels of greenhouse gases in the atmosphere are key drivers of climate change.

- **Ocean heat:** 2018 saw new records for ocean heat content in the upper 700 metres and upper 2000m. More than 90% of the energy trapped by greenhouse gases goes into the oceans and ocean heat content provides a direct measure of this energy accumulation in the upper layers of the ocean.

- **Ocean acidification:** Ocean acidification is ongoing and the global pH levels continue to decrease. In the past decade, the oceans absorbed around 30% of anthropogenic CO_2 emissions. Absorbed CO_2 reacts with seawater and changes the pH of the ocean, in the process is known as ocean acidification.

- **Sea level:** Sea level continues to rise at an accelerated rate. Global Mean Sea Level (GMSL) for 2018 was around 3.7 millimetres higher than in 2017 and the highest on record. Increasing ice mass loss from the ice sheets is the main cause of the GMSL acceleration.

- **Sea Ice:** Arctic sea-ice extent as well as Antarctic sea-ice extent was well below average throughout 2018.

- **Glaciers:** Seven out of the ten most negative mass balance years were recorded after 2010.

Climate Impacts

- **Hazards**: In 2018, most of the natural hazards which affected nearly 62 million people were associated with extreme weather and climate events, with floods affecting the largest number of people (more than 35 million).

- **Food security**: Exposure of the agriculture sector to climate extremes is threatening to reverse gains made in ending malnutrition. For example, in 2017, the number of undernourished people was estimated to have increased to 821 million, partly due to severe droughts associated with the strong El Niño of 2015–2016.

- **Displacement**: Over 2 million people were displaced due to disasters linked to weather and climate events. Drought, floods and storms (including hurricanes and cyclones) are the events that have led to the most disaster-induced displacement in 2018.

- **Heat, Air Quality and Health:** There are many interconnections between climate and air quality, which are being exacerbated by climate change. Between 2000 and 2016, the number of people exposed to heatwaves was estimated to have increased by around 125 million persons. These trends raise are highly concerning as extreme temperature events are expected to be further increasing in their intensity, frequency and duration.

- **Environmental Impacts**: They include coral bleaching and reduced levels of oxygen in open and coastal oceans, including estuaries and semi-enclosed seas. Others include loss of "Blue Carbon" associated with coastal ecosystems such as mangroves, seagrasses and salt marshes; and ecosystems across a range of landscapes. Climate change has emerged as a significant threat to peatland ecosystems, which are important to human societies around the world.

Conclusion

WMO's latest report on global temperatures, extreme weather and climate change indicators and socio-economic impacts is yet another strong wake-up call on the need for urgent and more ambitious climate action. The report also helps highlight the impacts of climate change on achieving the sustainable development goals and the need for a holistic understanding of the socio-economic consequences of increasingly intense extreme weather on countries around the world.

Global Cooling Coalition

In News

The first-ever global coalition on clean and efficient cooling was launched at the First Global Conference on Synergies between the 2030 Agenda and Paris Agreement.

Background

- **Demand for cooling:** In a warming world, cooling is a necessity, not a luxury. It is important to provide equitable access to cooling technology to keep people and children healthy, vaccines stable, food nutritious and economies productive. As the world gets warmer, the demand for cooling is projected to grow. With increasing incomes and urbanisation, number of air conditioning units across the globe is set to increase from 1.2 billion to 4.5 billion by 2050.

- **Increased emissions:** This also means that emissions from cooling sector are estimated to grow 90% by 2050 without action, and will endanger the planet.

- **Need for efficient cooling devices:** In this context, clean, efficient cooling appliances and equipment can save up to $2.9 trillion in energy use by 2050, and help avoid warming of the planet.

About Global Cooling Coalition

- **Efforts:** The cooling coalition is a new global effort with the aim to help identify solutions and mobilise action towards clean and efficient cooling to provide all with sustainable cooling at a scale that would ensure safe food, safe vaccine and comfort at home and work. It recognises the importance of cooling not only as a carbon emission and development issue but as a larger social equity issue.

- **Members:** The coalition includes government officials from Chile, Rwanda, Denmark, organizations like TERI, International Solar Alliance, UNEP as well as leaders from civil society, research and academia.

- **Complements other such efforts:** The Global Cool Coalition is a unified front that links action across the Kigali Amendment, Paris Agreement and Sustainable Development Goals. It will complement and build upon ongoing successful programs to advance clean and efficient cooling, including, the Cooling for All Secretariat, the Climate and Clean Air Coalition, the Kigali Cooling Efficiency Programme, private sector action like the Global Cooling Prize, and other initiatives.

Final Analysis

Hundreds of millions of people at risk from extreme heat are in need of protection through cooling technologies, while also ensuring protecting the planet from increased carbon emissions. Global Cooling Coalition is an important step in this directions as it seeks to cut global warming, improve the lives of hundreds of millions of people and make huge financial savings. In this context, India is one of the first countries in the world to develop a comprehensive India Cooling Action Plan (ICAP), which was launched in March, 2019. ICAP highlights the urgency of proactively and collaboratively addressing India's projected cooling growth and lays out sector-wide priorities and pathways for interventions.

State of Global Air

In News

Air pollution — comprising ambient PM2.5, Ozone, and household air pollution from the burning of solid fuels — continues to be one of the most important risk factors contributing to death and disability worldwide. It is the third highest cause of death among all health risks in India, killing over 1.2 million people in 2017, as per the State of Global Air 2019 report. The report also said that worldwide, air

pollution is responsible for more deaths than many better-known risk factors such as malnutrition, alcohol use, and physical inactivity.

State of Global Air Report 2019

The State of Global Air report is produced by the Health Effects Institute (HEI) drawing from the most recent evidence produced as part of the Global Burden of Disease (GBD) project of the Institute for Health Metrics and Evaluation (IHME). The report brings into one place the latest information on air quality and health for countries around the globe, and presents information on outdoor and household air pollution and on the health impacts of exposure to air pollution. For the first time, the 2019 report also explores how air pollution affects life expectancy.

Findings From The Report

1. Exposure to air pollution:

- Two main pollutants are considered key indicators of ambient, or outdoor, air quality: fine particle air pollution (PM2.5) and ozone found near ground level (tropospheric ozone).

- **Fine particle air pollution** comes from vehicle emissions, coal-burning power plants, industrial emissions, and many other human and natural sources. While exposures to larger airborne particles can also be harmful, studies have shown that exposure to high average concentrations of PM2.5 over the course of several years is the most consistent and robust predictor of mortality from cardiovascular, respiratory, and other types of diseases. Around the world, ambient levels of PM2.5 continue to exceed the Air Quality Guideline established by the WHO. The guideline for annual average PM2.5 concentration is set at 10 µg/m3. More than 90% of people worldwide live in areas exceeding the WHO Guideline for healthy air. More than half live in areas that do not even meet WHO's least-stringent air quality target.

- **Ozone pollution** is a continuing challenge in more developed countries and is increasing in less developed areas, posing new air quality concerns. When ozone is near ground level (in the troposphere), it acts as a greenhouse gas and a pollutant, with harmful effects on human health including respiratory diseases, specifically chronic obstructive pulmonary disease. Most ground-level ozone pollution is produced by human activities (for example, industrial processes and transportation) that emit chemical precursors to the atmosphere, where they react in the presence of sunlight to form ozone.

2. Household air pollution: In 2017, 3.6 billion people (47% of the global population) were exposed to household air pollution from the use of solid fuels (such as coal, wood, charcoal, dung, and other forms of biomass, like crop waste) for cooking, heating and lighting. These exposures were most common in sub-Saharan Africa, South Asia, and East Asia. Many efforts are under way to shift households to cleaner energy sources. This shift would improve both indoor and outdoor air quality because burning of solid fuels in and around the home also contributes to ambient air pollution. China and India are seeing reduced proportion of households cooking with solid fuels due to governmental efforts.

3. The burden of disease from air pollution: Air pollution exposure is linked with increased hospitalizations, disability, and early death from respiratory diseases, heart disease, stroke, lung cancer, and diabetes, as well as communicable diseases like pneumonia. Air pollution (ambient PM2.5, household, and ozone) is estimated to have contributed to about 4.9 million deaths (8.7% of all deaths globally) and 147 million years of healthy life lost (5.9% of all DALYs globally) in 2017. The countries with the highest mortality burden attributable to air pollution in 2017 were China (1.2 million) and India (1.2 million). Air pollution ranks fifth among global risk factors for mortality. Most of the disease burden attributable to air pollution (82%) stems from chronic noncommunicable diseases like chronic obstructive pulmonary disease (COPD), type 2 diabetes, lung cancer etc.

4. Air pollution impact on life expectancy: Air pollution collectively reduced life expectancy by 1 year and 8 months on average worldwide, a global impact rivaling that of smoking. This means a child born today will die 20 months sooner, on average, than would be expected in the absence of air pollution. Air pollution reduces average life expectancy by almost as much as active tobacco smoking. High exposures to ambient PM2.5 are a major contributor to loss of life expectancy around the world.

Conclusion

The air quality data presented in the State of Global report helps explain why air pollution continues to pose a substantial threat to human health in so many countries around the world. The growing burden of disease from air pollution is among the major challenges facing national governments and public health officials, with far-reaching implications for national economies and human well-being. Better understanding the sources of air pollution and key contributors to its health burden is a critical next step for implementing effective air pollution control policies.

Global Assessment of Biodiversity and Ecosystem Services

In News

Up to one million species face extinction due to human influence, according to **Global Assessment Report on Biodiversity and Ecosystem Services**. The report catalogues how humanity has undermined the natural resources upon which its very survival depends. Threats posed by human activities include accelerating loss of clean air, drinkable water, CO2-absorbing forests, pollinating insects, protein-rich fish and storm-blocking mangroves etc. The Africa regional assessment is the first of its kind in the continent, and constitutes one of four regional assessments conducted under Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

About The Report

- The Global Assessment of Biodiversity and Ecosystem Services report was prepared by experts working with the **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).**

- It examines causes of biodiversity and ecosystem change, the implications for people, policy options and likely future pathways over the next three decades if current trends continue, and other scenarios.

- The report also offers an overview of where the world stands in relation to key international goals, including the Sustainable Development Goals (SDGs), the Aichi Biodiversity Targets and the Paris Agreement on climate change.

- It showcases opportunities and challenges for decision makers at all levels and in a range of contexts.

Assessment Of Biodiversity And Ecosystem Services For Asia-Pacific

- **Rich biodiversity:** The Asia-Pacific region's rich biodiversity and valuable ecosystem services provide vital support for human well-being and sustainable development. The biodiversity of the Asia-Pacific region is important for providing food, water, energy, and health security, as well as cultural and spiritual fulfilment.

- **Decline in biodiversity:** The Asia-Pacific region has achieved **rapid economic growth**, and is undergoing high rates of urbanization and agricultural expansion, at a high environmental cost, causing degradation and loss of biodiversity. **Invasive alien species** have increased in number and abundance, and constitute one of the most serious drivers of biodiversity loss across the AsiaPacific

region. The **increase of waste and pollution** in the Asia-Pacific region is impacting ecosystems and threatening the current and future health of nature and people.

- o The population of **large wild mammals and birds has declined** across the region.

- o **Traditional agrobiodiversity is in decline**, along with its associated indigenous and local knowledge, due to a shift towards intensification of agriculture with a small number of improved crop species and varieties.

- o **Coral reefs** are under serious threat of bleaching and death under the combined effects of habitat loss, overfishing, pollution, sediments and nutrients from land run-off, sea level rise, ocean warming and ocean

- **Climate change:** Climate change and associated extreme events are impacting species distribution, population sizes and the timing of reproduction or migration; increased frequency of pest and disease outbreaks resulting from these changes may have additional adverse effects on agricultural production and human wellbeing.

- **Policies and Governance options:**

- o **Local communities and higher-level stakeholders collaborating** in decision-making processes that involve the conservation of nature.

- o The **mainstreaming of biodiversity** into development policies, plans, and programmes can improve efforts to achieve both the Aichi Targets and the Sustainable Development Goals.

- o **Partnerships** with the private sector, individuals and non-governmental organizations, can help countries meet the growing gaps in funding to finance conservation efforts.

- o **Sustainable production, consumption and waste management policies** can help to reduce biodiversity loss, including by promoting low-carbon and renewable solutions that are less polluting and more sustainable

Assessment Of Biodiversity And Ecosystem Services For Africa

- **Rich biodiversity:** Africa's extraordinary richness in biodiversity and ecosystem services, and wealth of indigenous and local knowledge, comprises a strategic asset for sustainable development in the region. Africa has opportunities to fully realize the benefits of having such rich biodiversity and explore ways of using it in a sustainable way to contribute to its economic & technological development.

- **Decline in biodiversity:** The decline and loss of biodiversity is reducing nature's contributions to people in Africa, affecting daily lives and hampering the social and economic development targeted by African countries.

- **Vulnerable to impacts of climate change:** Droughts are more frequent and more severe. Rainfall distribution, pattern and intensity is affected by climate change, with severe consequences for smallholder farmers and poor communities. Climate change is also likely to change the structure and function of many ecosystems, and will exacerbate all pressures on biodiversity.

- **Poor policy focus:** Indirect drivers, including rapid population growth and urbanization, economic policies, lack of appropriate technologies, and socio-political and cultural pressures, have received limited consideration in the design of development policies and strategies.

- **Insufficient progress on conserving biodiversity:** Africa's existing policies, strategies, plans and programmes at the national, sub regional and regional levels are moving in the right direction by addressing both direct and indirect underlying threats to biodiversity and nature's contributions to people. However, progress in many of the actions remains insufficient.

- **Governance reforms needed:** Africa can move towards achieving its commitments and targets through multi-stakeholder and multi-level adaptive governance, as well as improved integration of

indigenous and local knowledge through recognition of traditional institutions. Governance options that harness synergies and deliver multiple benefits, supported by an enabling environment, can help to balance patterns of access and allocation of ecosystem services in Africa.

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES): It is an **independent intergovernmental body**, established by member States in 2012, that assesses the state of biodiversity and nature's contributions to people, and outlines options for the future based on different socio-economic choices.

The headquarters of the **secretariat is in Bonn, Germany**. It currently has over 130 member States. IPBES is placed under the auspices of four United Nations entities: <u>UNEP, UNESCO, FAO and UNDP and administered by UNEP</u>.

Bharat Stage VI Fuel

In News

Supply of ultra-clean Euro-VI grade petrol and diesel (also referred to as Bharat Stage BS-VI in India) has begun in cities adjoining Delhi. India had in 2015 decided to leapfrog to Euro-VI emission norm compliant petrol and diesel from April 2020, from the Euro-IV grade at present. Euro-VI grade fuel contains 10 ppm of sulphur as against 50 ppm in Euro-IV fuels.

Bharat Stage Emission Standards

Bharat Stage (BS) emission standards were established by the Indian government to limit air pollutants coming out of internal combustion engines like those found in motor vehicles. BS regulations, **introduced in 2000**, are similar to European emission standards but have been *styled to suit specific needs and demands of Indian conditions*.

The standards and the timeline for implementation are set by the **Central Pollution Control Board (CPCB)** under the Ministry of Environment & Forests and Climate Change (MoEFCC). As the stage goes up, the control on emissions become stricter.

Evolution To Bharat Stage Emission Standards

- In India, the first stage of mass emission norms came into force for petrol vehicles in 1991 and for diesel vehicles in 1992. In 2000 that vehicles — both passenger and commercial — met the Euro-I standards.

- **BS-II:** For 2-and 3-wheelers, Bharat Stage II applied from 2005.

- **BS-III:** Since 2010, Bharat stage III norms have been enforced across the country.

- **BS-IV:** Bharat Stage IV for 13 Metro cities was implemented from April 2010 onwards and the rest of the country moved to Bharat Stage III. Bharat stage IV norms were extended to additional 20 cities from October 2014 onwards. After the Supreme Court ordered a freeze on the registration and sale of BS-III fuel compliant vehicles in 2017, India has mostly fully to BS IV standards.

- **BS-VI:** In 2018, the Indian government announced that India **will directly go to the BS VI** norms by April 1, 2020 (skipping Bharat V).

How Bharat Stage VI Norms Are An Improvement

Bharat Stage VI is the most advanced emission standard for automobiles and is equivalent to Euro-VI norms currently in place across countries in Europe.

- **Sulphur:** BS-Vi fuel contains 5 times fewer Sulphur traces (10 parts per million) compared to BS-IV (50 ppm).

- **Particulate Matter (PM) emissions:** BS VI can bring PM in diesel cars down by 80 per cent.

- **Nitrogen oxides:** The new norms will bring down nitrogen oxides from diesel cars by 70 per cent and in petrol cars by 25 per cent.

- **On-board diagnostics (OBD):** With the introduction of the new norms, on-board diagnostics (OBD) become mandatory for all vehicles, which will ensure that the emission control device runs at optimum efficiency throughout the life of the vehicle.

- **RDE (Real Driving Emission)** will be introduced for the first time that will measure the vehicle's emission in real-world conditions against simulated conditions.

- **DPF** (Diesel Particulate Filter) and **SCR** (Selective Catalytic Reduction) will be introduced for Diesel engines.

Impact of BS-VI norms:

- **On Environment:** BS-VI are stricter, more restrictive norms on emissions from vehicles and will give a jumpstart to India's long battle with air pollution.

- **On Consumers:** BS-VI-compliant vehicles will be more expensive. Diesel vehicles and economy-segment motorcycles will see a sharp increase in price, which may result in less demand from customers for some time.

- **On Automakers:** Leading automakers had to make greater investments to upgrade existing models and make them BS-VI-complaint. This will also mean fewer launches till the deadline. Two- and four-wheeler makers have pulled capacity expansion plans, as they expect demand to fall. The BS-VI-complaint fuel too will be more expensive.

Challenges

The challenges to adapting the new norms include the need for lot of technological changes in the vehicles, innovations to manufacturing etc. without affecting the price of vehicles too much. Manufacturers will need to start manufacturing BS-VI complaint vehicles by February 2020, while phasing out BS-IV compliant vehicles and selling all their BS-IV stock by April. The Ministry of Petroleum & Natural Gas will also have the challenge of being ready by April, 2020 for an assured supply of BS-VI fuel across the country. Indian refiners will need to upgrade to be ready to provide BS-VI fuels.

New Data From Global Forest Watch

In News

According to new data from Global Forest Watch, **the world lost 12 million hectares (30 million acres) of tropical tree cover in 2018**, the fourth highest annual decline since records began in 2001. The study highlighted *new deforestation hotspots*, particularly in Africa, where illegal mining, small-scale forest clearing and the expansion of cocoa farms led to an increase in tree loss in countries such as Ghana and the Ivory Coast.

This also has major implications for climate change as the forests absorb a third of the planet-warming greenhouse gas emissions produced globally. The indigenous communities are most vulnerable to losing their homes and livelihoods through deforestation.

> **Primary forests**:
>
> - Primary forests or "Old growth" refers to areas of natural, mature forest cover that have not been cleared and regrown in recent history (less than 30-50 years).
> - Primary tropical rainforests are a crucially important forest ecosystem, containing trees that can be hundreds or even thousands of years old. They store more carbon than other forests and are

irreplaceable when it comes to sustaining biodiversity.

- Primary rainforests provide habitat for animals ranging from orangutans and mountain gorillas to jaguars & tigers. Once these forests are cut down, they may never return to their original state.

Findings From The New Data From Global Forest Watch

- **Loss of primary rainforest:** This year, for first time ever, data is available on the extent (as of 2001) of tropical humid primary forests. This can help distinguish loss of these important primary forests from other tree cover loss. Of greatest concern from the latest from Global Forest Watch data is the **disappearance of 3.6 million hectares of primary rainforest**. Despite a growing number of zero-deforestation commitments from governments and companies, *primary rainforest loss hit record highs in 2016 and 2017 due to fires and remained above historical levels in 2018*.

- **Countries losing the most primary rainforest:** Earlier in 2002, just two countries—Brazil and Indonesia—made up 71 percent of tropical primary forest loss. However, recent data shows that the regions of primary forest loss are starting to shift. Brazil and Indonesia only accounted for 46 percent of total primary rainforest loss in 2018, while countries like Colombia, Ivory Coast, Ghana and Democratic Republic of the Congo saw loss rates rise considerably. Madagascar was the country losing the most forest in percentage terms, losing 2 percent of its entire primary forest last year alone

Causes Of Primary Forest Loss

- **Forest fires:** A strong fire season in 2015 in Indonesia burned 2.6 million hectares of primary forest in 2015. This year, being another El Niño year with dry conditions, is expected to cause a prolonged fire season in Indonesia. Primary forests in Brazil are also affected by forest fires.

- **Forest clearing:** In 2018, most of the primary forest loss in Brazil is due to clear cutting in the Amazon. Notably, several hot spots of primary forest loss occurred near and within indigenous territories. Expansion of small-scale forest clearing for agriculture and fuelwood in Democratic Republic of Congo likely caused most of its primary forest loss. Forest loss in Colombia was due to forest clearing for development.

- **Illegal mining and Cocoa farms in Africa:** Ghana and Ivory Coast experienced the highest percent rise in primary forest loss between 2017 and 2018 of any tropical country. Illegal mining caused some of the loss, and while it is difficult to attribute the exact location and amount of forest loss, expansion of cocoa farms caused loss in both countries.

Saving the World's Primary Rainforests

Hundreds of countries and companies have made commitments to reduce or eliminate deforestation by 2020. As we draw closer to this deadline, some countries are making real progress at reducing loss of primary forests, but many others are trending in the wrong direction. Early reports and the high rate of primary forest loss in 2018 suggest that we are not on track to meet these goals. Given the urgency to prevent runaway climate change and irreversible biodiversity loss, we need to rein in deforestation – before it's too late.

Global Forest Watch (GFW):

Launched in 2014, it is an online platform that provides data and tools for monitoring forests. By harnessing technologies like satellite imagery, remote sensing and various applications, GFW allows anyone to access near real-time information about where and how forests are changing around the world. The World Resources Institute (WRI) established GFW in 1997 as part of the Forest Frontiers Initiative.

Easter Attacks in Sri Lanka

Syllabus: Role of external state and non-state actors in creating challenges to internal security.

In News

- A string of bombings at churches and luxury hotels **in Sri Lanka** on 21 April 2019 has shaken the entire world.

- The attacks were seemingly well-coordinated and carried out with great sophistication in high-profile locations with the intention of producing a high casualty event.

Analysis

- The targeted churches had amassed a high turnout of worshippers on the occasion of Easter Sunday which led to very high casualties.

- Local authorities narrowed their suspicions on the **National Thowheeth Jama'ath (NTJ)**, a little known extremist group with *operations in eastern Sri Lanka*.

Background of NTJ:

- NTJ gained attention in 2018 for **vandalising Buddhist statues** in Mawanella, in central Sri Lanka.

- In 2016, its Secretary, Abdul Razik, was arrested on charges of inflammatory comments against Buddhists.

- The leader of the NTJ**, Mohammed Zaharan**, had spent a considerable **time in both Sri Lanka and India**.

- However, analysts believed that the *NTJ could not have acted alone given* that it is a small and obscure group with limited funding and resources.

- Later, Sri Lankan State Minister of Defence Ruwan Wijewardene told Parliament that the attacks were **carried out by ISIS** in *retaliation for the mosque attacks in Christchurch*.

- Nonetheless, if this assertion is true, then it **reflects an incredible manoeuvre** given that the Christchurch attack was only about a month before, on 15 March 2019.

- The synchronous suicide bombings, such as these, require significant organisational skills, logistics and planning.

- According to the security observers, there were multiple aspects that have led to deteriorated national security in Sri Lanka. These are:

o The **soured relationship between the leaders** (Wickremesinghe and Sirisena) leading to the failure of precautions

o Lack of integration in intelligence sharing due to the fractured and divisive system

o **Sri Lanka's Emergency Regulations and Counter-terrorism laws** have been inactive for the past few years. As a result, the security forces did not have legal authority to carry out search-and seizure operations.

Lone Wolf Attack

- Lone wolf attack is undertaken by **very small group or an individual** without the overall support of a terrorist organisation.

- Different terror groups (including IS) encourage this by its supporter who are not formally enlisted cadres. In this sense, these isolated attacks act as a tool for spreading terror across the world on

behalf of these groups.

Characteristics

- Carried out by individuals or small groups influenced by the perception of injustice and persecution.

- Persons from age group **18-30 years** are the most vulnerable group.

- These volunteers are **mostly from middle class and educated families** (Two brothers from the super rich family of Sri Lanka were involved in this bombing).

- They are exploited by the terror organisations over social media platform and hence these organisations play an important role in their radicalization.

- Family members of these youths remain unaware and hence there is no reporting at early stage.

India's Vulnerabilities To Such Attacks

- Reaction of local police, who are the first responder, is often inadequate.

- Heavy concentration of public in public area makes it a potential target.

- More number of youths is getting radicalized on social media platforms. Many of them have even travelled to join ISIS.

- Radical ideological pursuit due to domestic communal tension is increasing. E.g. – After the Muzzafarnagar riots (UP), the fringe elements were active in rehabilitation camps trying to radicalize the youths.

TikTok Ban

Syllabus: Role of media and social networking sites in internal security challenges

In News

- TikTok app was removed from the Google Play Store and Apple App Store after the Madras High Court imposed an interim ban on the app.

- After almost a week, the Court decided to lift the interim ban on TikTok and make it available for download via official channels.

Reasons For Its Ban

- The Madras High Court issued an interim ban on TikTok after it found that the **platform hosted pornographic content**.

- The Court mentioned that it was worried about the content affecting children and luring sexual predators to attack them.

What is TikTok

- TikTok is an app that allows users to upload short videos with audio and visual effects.

- The app is owned by a Chinese company **named Bytedance.**

- The app allows members to create and showcase their short videos on a global platform. At the same time, members can also view videos from other members.

- In India, TikTok has had big success so far, amassing more than 120 million users since it was launched in 2016.

Press Council Guidelines to Media on Poll Reporting

Syllabus: Role of media and social networking sites in internal security challenges

In News

The Press Council of India has **issued new guidelines** in order to **promote objective reporting** on the upcoming Lok Sabha elections.

Key Highlights

- The new guidelines asked the media to **give objective reports** about the election and cautioned it against the **phenomenon of paid news**.

- Newspapers are **not expected to indulge** in unhealthy election campaigns, exaggerated reports about any candidate or party during the elections.

- While reporting on the actual campaign, a ***newspaper may not leave out any important point raised by a candidate*** and make an attack on his or her opponent.

- It also cautioned the **press to eschew reports** which tend to **promote feelings or enmity** or **hatred** between people on the grounds of region, religion, race, caste, community or language.

- The press should refrain from publishing false or critical statements in regard to the personal character and conduct of any candidate or in relation to the candidature or withdrawal of any candidate or candidature, to prejudice the prospects of that candidate in the elections.

- It also cautioned against publishing **unverified allegations** against any candidate or party.

- Regarding publishing pre-poll surveys, it asked the newspapers to preface them conspicuously by indicating the institutions which have carried on such surveys, the individuals and organisations which have commissioned them, the size and nature of sample selected and the method of selection of the sample for the findings.

- It also urged authorities that rules and orders regulating **entry of the media persons** to places of election **should be notified** and the **cut-off date for applying for passes** should be given due and advance publicity.

About PCI

- The Press Council of India was first established in the year 1966 on the recommendation of the **first Press Commission** (1954).

- The objective was to preserve the *freedom of the press and for maintaining and improving the standards of the press in India*.

- Presently, the function of the council is governed under the **Press Council Act, 1978**.

- It is a **statutory, quasi-judicial** body which acts as the watchdog of the press. It adjudicates the complaints against and by the press for violation of ethics and for violation of the freedom of the press respectively.

- It is headed by the Chairman, who should be a retired judge of the Supreme Court of India.

- The **selection of the Chairman by a Committee** consisting of the Chairman of the Rajya Sabha, the Speaker of Lok Sabha and a person elected by the members of the Council from among themselves.

- The Council has **28 members** of which 20 have to represent the press by being nominated by the press organisations, agencies and other bodies.

- 5 members are nominated from the 2 houses of the parliament (3 from LS, 2 From RS) and 3 represents cultural and legal fields and one nominee of the Bar Council of India.

- The term of the Chairman and the members of the Council is three years. A retiring member is eligible for renomination for not more than one term.

'Online Harms' White Paper

Syllabus: Basics of cyber security

In News

- UK government has released a **white paper on 'online harms'**.

- The document, which aims at limiting harmful online content, has been kept open for public consultation.

- The Online Harms White Paper is a joint proposal from the Department for Digital, Culture, Media and Sport and the Home Office.

What Are 'Online Harms'

- The plans cover a range of issues that are clearly defined in law such as spreading terrorist content, child sex abuse, so-called revenge pornography, hate crimes, harassment and the sale of illegal goods.

- It also covers harmful behaviour that has a less clear legal definition such as cyber-bullying, trolling and the spread of fake news and disinformation.

- It says social networks must tackle material that advocates self-harm and suicide.

What Do The Proposals Say

- The plans call for **an independent regulator** to hold internet companies to account. It would be funded by the tech industry.

- The regulator will define a "**code of best practice**" that social networks and internet companies must adhere to.

- The regulator will have the **power to fine companies** and **publish notices** naming and shaming those that break the rules.

- Besides Facebook, Twitter and Google, the rules would apply to messaging services such as Snapchat and cloud storage services.

Iran's Revolutionary Guards

In News

- The United States officially designated Iran's elite Islamic Revolutionary Guard Corps (IRGC) as **a foreign terrorist organization**.

- The action by Trump marks the **first time** the United States has **formally labelled another nation's military a terrorist group**.

Reasons Provided By USA

- The IRGC has been engaged in terrorist activity since its inception, including the 1996 Khobar Towers bombing in Saudi Arabia that killed 19 Americans, and a foiled plan to attack the Saudi ambassador to the United States on U.S. soil.

- Trump administration has long criticized *Iran for its influence in Iraq, Syria and Yemen.*

Steps Taken By Iran

The U.S. step prompted an immediate response from Iran, whose *Supreme National Security Council in turn designated U.S. military forces as a "terrorist organization".*

Analysis

- It is intended **to increase pressure on Iran**, isolating it further and diverting some of the financial resources it uses to fund terrorism and militant activity in the Middle East and beyond.

- However, there are concerns that it might not serve the purpose of peacefully resolving tensions with Iran.

- U.S. law already carried *penalties of up to 20 years in prison for U.S. persons who deal with the IRGC* because of its designation under another U.S. sanctions program, the U.S. Specially Designated Global Terrorist list.

- Hence many analysts believe that the IRGC designation was done for **purely symbolic and domestic political reasons**.

- Critics have opposed the designation due to **concern over a potential backlash against U.S. forces in the Middle East** and the problems it could create for U.S. partners who have a relationship with Iran.

- The only "**theoretical benefit**" the designation could provide is to **make it slightly easier for the Justice Department to prosecute people** for providing "material support" to the IRGC.

About IRGC

- Set up after Iran's 1979 Islamic Revolution **to protect the Shi'ite clerical ruling system**, the Guards have great sway in Iran's political system, controlling swathes of economy & armed forces.

- It is in charge of Iran's ballistic missile and nuclear programs. It also is involved with the country's banking and shipping industries.

Assam Rifles

Syllabus: Various Security forces and agencies and their mandate

In News

- The Delhi High Court has sought the response of the Cabinet Committee on Security (CCS) on a plea seeking directions to remove the dual control of Assam Rifles and bring it under the Defence Ministry.

- At present, the **administrative control** of Assam Rifles lies with the **Home Ministry**, while the **operational control** is with the **Defence Ministry.**

The CCS is chaired by the Prime Minister and comprises the Minister of External Affairs, the Home Minister, the Finance Minister and the Defence Minister.

Background

- The petitioner has challenged the Government of India (Allocation of Business) Rules, 1961 saying that it places **Assam Rifles under the head 'Police'**.

- The petitioner said that the **objective and functions of Assam Rifles were that of a military and para military force** and its categorisation as a police force was arbitrary, unreasonable and in violation of the rights of its personnel.

- The petition also seeks grant of pay, allowances, pension (including arrears) and ex-servicemen facilities to Assam Rifles personnel at par with the Indian Army.

About Assam Rifles

- The Assam Rifles is the oldest paramilitary force of India which came into **being in 1835**, as a militia called the '**Cachar Levy**'.

- This Force was formed to primarily **protect British Tea estates and their settlements against tribal raids**.

- In 1917, recognising their work during the Great War, fighting shoulder to shoulder with Rifle Regiments of the regular British Army, the **name of the Force was changed to 'Assam Rifles'**.

- It is also referred to as the **Sentinels of North East.**

- Role and Tasks:

o Conduct counter insurgency operations in the north-east and other areas where deemed necessary, under control of the army.

o During peace and 'proxy war', ensure security of the indo-china and indo-Myanmar borders.

Tug of war over Assam Rifles:

- In 2010, the Assam Rifles, which is deployed along the Indo-Myanmar border, was put in an awkward situation when *the ministry of home affairs (MHA) proposed to replace them with the Border Security Force (BSF).*

- According to MHA, the Assam Rifles, traditionally a Counterinsurgency force, has not **proved to be efficient** in this task while at the same time it is not guarding the border properly as well.

Induction Of Women In Military Police

Syllabus: Various Security forces and agencies and their mandate
In News

● To improve representation of women in the armed forces the Indian Army has taken a historic decision to induct women for the first time in PBOR (Personnel Below Officer Rank) role in Corps of Military Police.

● Women will be inducted in a graded manner to eventually comprise 20 per cent of total Corps of Military Police. Accordingly, the Army chalked out induction of approximately 800 women in military police with a yearly intake of 52 personnel per year.

● Their role will range from probing crime cases to assisting the army in field operations wherever required.

● The Corps of Military Police is responsible for preserving good order and discipline and to prevent breaches of the same by persons serving in or attached to the regular Army.

Status Of Women In Armed Forces

● While Indian women are already making strides in the Air Force, flying fighter jets and as officers in the Navy, this is being seen as a major breakthrough for women in armed forces, as so far, they were being inducted only as officers and this is the first time they would be taken in as soldiers. The project was first mooted by Army Chief Gen Bipin Rawat soon after he took charge of the force.

● Currently, women are allowed in select areas such as medical, legal, educational, signals and engineering wings of the Army.

- Recently, the Indian government had also announced that the women officers can get permanent commissions in the armed forces.

- According to government data, the Army has 3.80 per cent of its workforce as women, the Air Force has 13.09 per cent and the Navy six per cent.

Ballistic Missile Defence Programme

In News

- The phase one of the ambitious Ballistic Missile Defence (BMD) programme has been completed.

- A formal nod for the deployment of active missiles is expected soon.
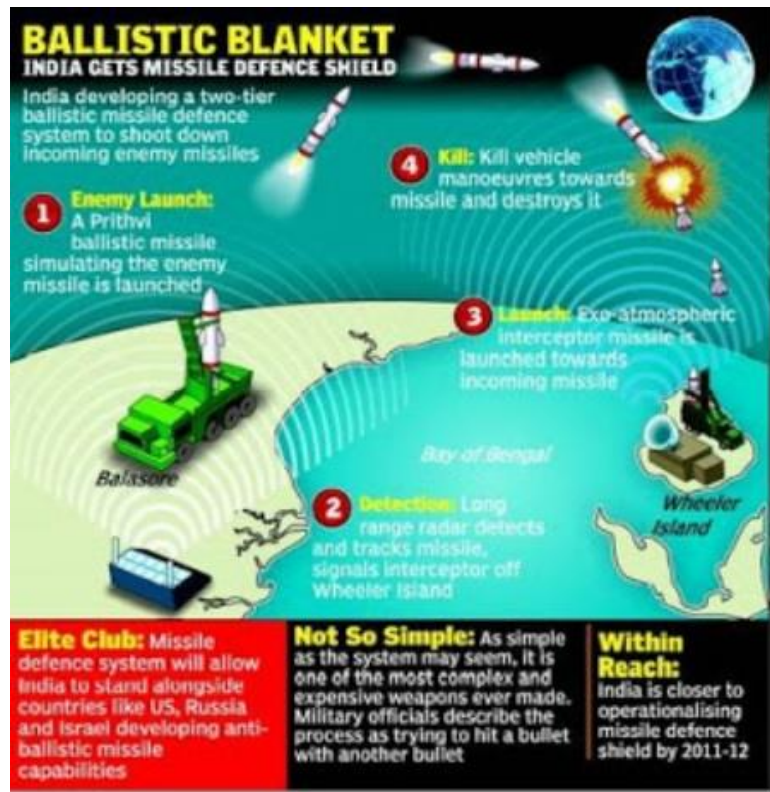
Key Features

- Phase one of the programme will **cover Delhi and Mumbai**, and guard them against incoming ballistic missiles.

- As part of the programme, two **indigenous long-range radars** have been deployed. However, specific missiles will be deployed only after formal approval.

The two radars deployed in the ballistic systems are being manufactured in India. **Swordfish** is one of the radars which is an **active electronically scanned array (AESA)** long-range tracking radar specifically developed to counter the incoming ballistic missile threat.

The radar has drawn its features from **Israeli Green Pine long-range radar**, which is the crucial component of its Arrow missile defence system.

About BMD Programme

- India's Ballistic Missile Defence programme was **launched in 1999** in the wake of Pakistan's maiden nuclear test in 1998 and China's leaps in this sphere.

- BMD works on two levels — **endo-atmospheric** (within Earth's atmosphere) and **exo-atmospheric** (the space stretching beyond the Earth's atmosphere).

- While **phase one deals** with destroying incoming missiles at **endo-atmospheric level**, **phase two deals** with the same in **exo-atmospheric level**.

- India's BMD arsenal consists of a **Prithvi Air Defence (PAD)** missile to take out incoming missiles **at a range of about 80 km** in altitude and an **Advanced Air Defence (AAD)** missile for **altitudes of 15-25 km**.

BALLISTIC BLANKET
INDIA GETS MISSILE DEFENCE SHIELD

India developing a two-tier ballistic missile defence system to shoot down incoming enemy missiles

1 **Enemy Launch:** A Prithvi ballistic missile simulating the enemy missile is launched

2 **Detection:** Long range radar detects and tracks missile, signals interceptor off Wheeler Island

3 **Launch:** Exo-atmospheric interceptor missile is launched towards incoming missile

4 **Kill:** Kill vehicle manoeuvres towards missile and destroys it

Elite Club: Missile defence system will allow India to stand alongside countries like US, Russia and Israel developing anti-ballistic missile capabilities

Not So Simple: As simple as the system may seem, it is one of the most complex and expensive weapons ever made. Military officials describe the process as trying to hit a bullet with another bullet

Within Reach: India is closer to operationalising missile defence shield by 2011-12

- In 2017, India had tested a **new exo-atmospheric interceptor missile** named the **Prithvi Defence Vehicle (PDV),** which reportedly intercepted a missile at an altitude of 100 km during trials.

- **The first missile** test for a BMD system was conducted in **November 2006,** when a **Prithvi-II missile** was successfully intercepted by the PAD in the endo-atmospheric level at an altitude of about 48 km.

Challenges

- It might start the arms race in Indian subcontinent.

- Ineffective against cruise missiles

- BMD testing is done in controlled atmosphere raising the question on its efficacy in war time.