

# DAILY MCQs COMPILATION

*with*

# EXPLANATIONS

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# HISTORY, ART & CULTURE

1. He was a soldier of the Mahratta Light Infantry who served in Italy during World War II (1939-1945). He was killed in action fighting on the heights of Upper Tiber Valley. Which of the following personalities is described above?
- (a) Havildar Umrao Singh (b) Lieutenant RG Salvi  
(c) Thaman Gurung (d) Naik Yeshwant Ghadge
2. With reference to the Jagannatha Puri Temple, consider the following statements:
1. It was built in the 10th century by Anangabhimha of the Chodaganga dynasty.
  2. Deities within the shrine are believed to be much older than the temple.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
3. With reference to Indian festivals, Consider the following pairs :
- | Festivals     | State               |
|---------------|---------------------|
| 1. Kathi Bihu | : Assam             |
| 2. Shigmo     | : Karnataka         |
| 3. Dree       | : Arunachal Pradesh |
- How many of the above pairs are correctly matched?
- (a) Only one pair (b) Only two pairs  
(c) All three pairs (d) None of the pairs
4. With reference to the Indian history, consider the following events:
1. Kheda Satyagraha
  2. Non-Cooperation Movement
  3. Civil Disobedience Movement
  4. Quit India Movement
- How many of the above events witnessed participation of Sardar Vallabhbhai Patel?
- (a) Only one (b) Only two  
(c) Only three (d) All four

## EXPLANATIONS

1. (d)

### In News

- Defence Minister Rajnath Singh paid tributes at the **VC Yeshwant Ghadge Sundial Memorial** in Montone, Italy.

**About Yeshwant Ghadge**

- He was a soldier of the **Mahratta Light Infantry** who served in Italy during **World War II (1939-1945)**.
- He was killed in action fighting on the heights of **Upper Tiber Valley**.
  - He was not even 23 when he succumbed to **German sniper fire** in Montone, a commune in the Italian province of Perugia.
- He had been in service for at least four years at the time, and had been promoted to the rank of Naik, commanding his own rifle section.
- He was posthumously awarded **Victoria Cross (VC)**, the UK's highest military decoration, for his uncommon courage in one of the fiercest battles of the Italian campaign.

2. (b)

**Statement 1 is not correct:**

- **Jagannatha Puri Temple** was **built by Anantavarman of the Chodaganga dynasty** in the 10th century.
- Subsequently, in 1230, **king Anangabhimha III** dedicated his kingdom to the deity and proclaimed himself as the 'deputy' of the god.

**Statement 2 is correct:**

- However, the deities within the shrine are **believed to be much older** and are associated with the great mythical ruler of the Satya-yuga, King Indrayumna, nephew of Lord Ram.

3. (b)

**Pair 1 and 3 are correctly matched and Pair 2 is incorrectly matched.**

**Kathi Bihu**

- **Kathi Bihu** is marked annually on the first day of the **Kati month** in the Assamese calendar. The festival is also known as **Kongali Bihu**.
- **Significance:** It marks a crucial phase of the year for every farmer's family in Assam - the fresh start of the harvest season and the relocation time of rice saplings.

**Shigmo Festival**

- Shigmo festival is the spring festival in **Goa**.
- The festival begins with the installation of the '**ghumot**', a traditional Goan percussion instrument, which is considered to be a symbol of cultural heritage and identity.

**Dree festival**

- Dree festival is a popular festival in **Arunachal Pradesh** and it is an important agricultural festival of **Apatani tribe**.

4. (d)

**Kheda Satyagraha (1917):**

- **Sardar Vallabhbhai Patel** supported and assisted Mahatma Gandhi in organising and leading the Satyagraha.
- He provided strong leadership and direction to the local community, encouraging them to join the protest against the British-imposed unjustified tax on land revenue.

**Non-Cooperation Movement (1920-22):**

- Patel recruited approximately 300,000 members and raised 1.5 million rupees for the Non-cooperation Movement.



- He advocated the **boycott of British goods** and **use of Khadi** as a symbol of economic and cultural self-sufficiency.

**Civil Disobedience Movement (1930-34):**

- During the course of the movement, Patel promoted **boycotts of British goods, refusal to pay taxes, and nonviolent protests and strikes.**
- He aligned himself with Gandhi in advocating for **individual disobedience**, and as a result, he was **arrested and sentenced to prison for around 9 months.**

**Quit India Movement (1942):**

- Patel organised protests and strikes against British rule, and delivered compelling and electrifying speeches throughout India, inspiring and mobilising people to join mass protests, engage in **acts of civil disobedience, boycott tax payments, and stage civil service shutdowns.**
- He implemented strategies to safeguard national leaders from arrest along with spearheading fundraising campaigns to support the movement.



# ECONOMY

1. Which of the following is/are benefits of getting a Geographical Indication (GI) tag for a product?
- (a) It protects the product from being copied or imitated by others.
  - (b) It helps to promote the product in the global market.
  - (c) It helps to increase the income of the producers of the product.
  - (d) All of the above
2. With reference to “World Intellectual Property Organization”, consider the following statements:
- 1. It is the global forum for intellectual property (IP) services, policy, information and cooperation.
  - 2. It holds a conference annually to frame policies, design programs and determine the organization’s budget.
- Which of the statements given above is/are correct?
- (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
3. With reference to the Energy Efficiency Services Limited (EESL), consider the following statements:
- 1. It is a joint venture of public-sector undertakings under the Ministry of Power, Government of India.
  - 2. It is a subsidiary of the Bureau of Energy Efficiency that implements energy efficiency projects and policies.
  - 3. It is a non-governmental organisation that promotes energy efficiency and climate change awareness.
- How many of the statements given above are correct?
- (a) Only one
  - (b) Only two
  - (c) All three
  - (d) None
4. With reference to ‘Navratna Status’, consider the following statements:
- 1. When a company achieves Navratna status, it gets enhanced financial and operational freedom.
  - 2. The companies can invest up to Rs 1,000 crore or 15% of their net worth on a single project without seeking government approval.
- Which of the statements given above is/are correct?
- (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2

5. It is a natural port located on the shores of the Bay of Bengal at the mouth of the river Kaduvayar. The Union Ministry of External Affairs had sanctioned Rs 8 crore to upgrade the infrastructure at the port. Ferry service between India, Sri Lanka recently launched related to this port. Which of the following ports is associated with the above description?
- (a) Mundra Port (b) Haldia port  
(c) Nagapattinam port (d) Paradip Port
6. With reference to Minimum Support Price, which of the following statements is/are correct?
1. MSPs have statutory backing and a farmer can demand MSP as a matter of right.
  2. The Centre announces the MSP for 26 mandated crops.
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
7. With reference to the World Bank, which of the following statements is/are correct?
1. It traces its origin from the Bretton Woods Conference, 1944.
  2. It is the collective name for the International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA).
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
8. With reference to the wealth tax, consider the following statements:
1. A partnership firm is not liable to wealth tax.
  2. Any co-operative society or political party is not liable to wealth-tax.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
9. Which among the following are Small Savings Instruments (SSIs)?
1. Public Provident Fund (PPF)
  2. Sukanya Samriddhi Scheme
  3. Kisan Vikas Patra (KVP)
- Choose the correct answer using the code given below:
- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3
10. With reference to the Credit Information Companies (CICs) in India, consider the following statements:
1. These are regulated by statutory provision.
  2. These are licensed by the Reserve Bank of India.
  3. There are only four CICs in India at present.
- How many of the statements given above are correct?
- (a) Only one (b) Only two  
(c) All three (d) None

11. The 'Lewis Model' sometimes appeared in the media, in the context of:
- |                       |                               |
|-----------------------|-------------------------------|
| (a) Quantum Physics   | (b) Labour Economy            |
| (c) Caste Enumeration | (d) Biodiversity Conservation |

### EXPLANATIONS

1. (d)

A GI tag is conferred upon products **originating from a specific geographical region**, signifying unique characteristics and qualities.

- It **protects the product from being copied or imitated by others**, and it helps to **promote the product in the global market**.
- A GI tag **can also increase the income of the producers** of the product by increasing the popularity of the product, driving demand.

2. (a)

#### World Intellectual Property Organization (WIPO)

- It is the global forum for intellectual property (IP) services, policy, information and cooperation. **Hence, Statement 1 is correct.**
- **Headquarters:** Geneva, Switzerland
- Their governing bodies and procedures are set out in the WIPO Convention, which established WIPO in 1967.
- **Mission:** To lead the development of a balanced and effective international IP system that enables innovation and creativity
- WIPO holds a **biennial** conference to frame policies, design programs and determine the organization's budget. **Hence, Statement 2 is not correct.**
- More than 170 nongovernmental organizations maintain observer status in these meetings.

3. (a)

#### Statement 1 is correct:

- EESL is a joint venture of four public-sector undertakings under the Ministry of Power, Government of India.
- It was founded in 2009 by the Ministry of Power as a joint venture of NTPC Limited, Power Finance Corporation Limited, REC Limited and POWER GRID Corporation of India Limited.
- EESL is a Super Energy Service Company (ESCO) that enables consumers, industries and governments to effectively manage their energy needs through energy efficient technologies.

#### Statement 2 is not correct:

- EESL is not a subsidiary of the Bureau of Energy Efficiency, but a separate entity that works in collaboration with it.
- The **EESL is affiliated to the Bureau of Energy Efficiency (BEE)** that has for years run a '**star-rating**' system for electric appliances with the highest-rated appliances having '5 stars'.

#### Statement 3 is not correct:

- EESL is not a non-governmental organisation, but a government-promoted company.

4. (c)

**Both the statements are correct.** The Indian Government classifies Public Sector Undertaking (PSU) into three categories i.e. **Maharatna, Navratna, and Miniratna**. In order to attain Navratna status, a PSU must meet specific criteria.

**The benefit of Navratna Status:**

- The companies are typically selected based on their **financial performance, operational efficiency, and strategic importance** to the Indian economy.
- These companies are given more freedom in making decisions related to **investments, joint ventures, mergers, and acquisitions**.
- It empowers it to invest up to **Rs 1,000 crore or 15% of its net worth** on a single project without seeking government approval.
- They will also have the freedom to enter joint ventures, form alliances, and float subsidiaries abroad.

5. (c)

**In News:** An international, high-speed passenger ferry service between Nagapattinam on the eastern coast of **Tamil Nadu** and **Kankesanthurai** in the northern province of Sri Lanka, has resumed.

The **Nagapattinam port** is a natural port located on the shores of the Bay of Bengal at the estuary of River Kaduvaiyar, that flows south of the town between Akkaraipettai and Keechankuppam fishermen villages.

- The Nagapattinam port is one of the non-major ports under the maintenance of the Tamil Nadu Maritime Board,
- The Union Ministry of External Affairs had sanctioned Rs 8 crore to upgrade the infrastructure at the port.

6. (d)

**Both the Statements are not correct.**

**What is MSP?**

- **Minimum Support Price (MSP)** is a form of market intervention by the Government of India to insure agricultural producers against any sharp fall in farm prices. MSP protects the producer-farmers against distress sale during bumper production years.
- **MSPs have no statutory backing** — a farmer cannot demand MSP as a matter of right.

**Crops Covered**

- The Centre announces the **MSP for 22** mandated crops. These include:
  - **14 kharif crops** (paddy, jowar, bajra, maize, ragi, tur/arhar, moong, urad, groundnut, soyabean, sunflower, sesamum, niger seed, cotton),
  - **6 rabi crops** (wheat, barley, gram, masur/lentil, rapeseed and mustard, and safflower) and
  - **2 commercial crops** (jute and copra).
- In addition, **MSP for Toria and de-husked coconut** is also fixed on the basis of MSPs of rapeseed & mustard and copra respectively.

**Fair and Remunerative Price (FRP)**

- FRP is the minimum price at which the sugar mills purchase sugarcane from farmers.
- The Cabinet Committee of Economic Affairs announces the FRP on the recommendations of CACP.

7. (c)

**Both the Statements are correct.**

**World Bank**

- The World Bank Group is an international partnership comprising **189 countries** and five constituent institutions that works towards eradicating poverty and creating prosperity. It traces its origin to the **Bretton Woods Conference, 1944**.
- The five development institutions under the World Bank Group are:
  - **International Bank for Reconstruction and Development (IBRD)**
  - **International Development Association (IDA)**
  - **International Finance Corporation (IFC)**
  - **Multilateral Guarantee Agency (MIGA)**
  - **International Centre for the Settlement of Investment Disputes (ICSID)**
- The World Bank is the collective name for the **International Bank for Reconstruction and Development (IBRD)** and **International Development Association (IDA)**, two of five international organizations owned by the World Bank Group.
- **Headquarters:** Washington, D.C

8. (c)

Wealth tax is levied on the wealth of the taxpayer, and it is governed by the Wealth Tax Act, 1957.

**Statement 1 is correct:** A partnership firm is not liable to wealth tax, but the assets of the partnership firm are charged to tax in the hands of the partners of the firm in the form of 'Interest in partnership firm'.

**Statement 2 is correct:** Following entities are not liable to wealth-tax:

- (a) Any company registered under section 25 of the Companies Act;
- (b) Any co-operative society;
- (c) Any social club;
- (d) Any political party;
- (e) A Mutual Fund specified under section 10(23D) of the Income-tax Act; and
- (f) Reserve Bank of India

9. (d)

**About Small Savings Instruments (SSIs)**

- They are a set of **savings instruments** managed by the **central government** with an aim to **encourage citizens** to save **regularly irrespective of their age**.
- It comprises instruments, **including the National Saving Certificate (NSC), Public Provident Fund (PPF), Kisan Vikas Patra (KVP) and Sukanya Samriddhi Scheme**.
- The money raised from people who save through these schemes goes to the Centre and is put into a fund called the **National Small Savings Fund (NSSF)**.
- **The government resets the interest rate at the beginning of every quarter.**

10. (c)

**Credit Information Companies (CICs):** These are organisations that **collect, maintain, and analyse** the consumer and business credit information of individuals and companies across the nation, as provided by financial institutions.

**Statement 1 is correct:** CICs are regulated by the **Credit Information Companies (Regulation) Act, 2005 (CICRA)** which is **binding for the Credit information Companies as well as for financial institutions**.

**Statement 2 and 3 are correct:** At present, there are **four CICs in India**, namely, Credit Information Bureau (India) Limited (CIBIL), Equifax Credit Information Services Private Limited, Experian Credit Information Company of India Private Limited, and CRIF High Mark Credit Information Services Private Limited **licensed by the Reserve Bank of India**.

**11. (b)**

**Economist William Arthur Lewis** set out the dual sector model in his 1954 publication, '**Economic Development with Unlimited Supplies of Labor**'. The model seeks to provide a framework for understanding how relatively poor countries can develop economically.

- A Lower share of the manufacturing sector in employment has raised questions about the implementation of the **Lewis Model in India**.
- The '**Lewis Model**' describes a **path whereby a developing economy can foster the growth of a new "capitalist sector,"** which will employ a growing share of the excess labor available from the subsistence sector. Over time, this capitalist sector can come to eclipse the subsistence sector, causing the overall economy to grow.



# INDIAN POLITY & CONSTITUTION

1. Which of the following was provided by the Supreme Court's EWS (Economically Weaker Sections) Judgment of 2022?
  1. Flexibility of 50% ceiling limit on the reservation of citizen in public employment.
  2. Discouragement to reservations given by the state governments in India.Select the correct answer using the code given below:  
(a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
2. With reference to the National Investigation Agency (NIA), consider the following statements:
  1. It was constituted in the wake of the 26/11 Mumbai terror attack in November 2008.
  2. The agency doesn't have the power to search, seize, arrest and prosecute.
  3. The state governments cannot refer the cases pertaining to the scheduled offences for NIA investigation.How many of the statements given above are correct?  
(a) Only one (b) Only two  
(c) All three (d) None
3. Habitat rights are given to PVTGs under the Forest Rights Act, 2006. Which of the following rights are included under the habitat rights?
  1. Rights over customary territory of habitation
  2. Rights over enacting their own laws regarding habitation
  3. Rights over economic and livelihood means
  4. Rights over intellectual knowledge of biodiversity and ecology
  5. Rights over traditional knowledge of use of natural resourcesSelect the correct answer using the code given below:  
(a) 1, 2, 3 and 5 only (b) 1, 3, 4 and 5 only  
(c) 2, 3 and 5 only (d) 1, 4 and 5 only
4. With reference to the Foreign Contribution Regulation Act (FCRA), consider the following statements:
  1. The Union Ministry of Finance and External Affairs are responsible to grant the FCRA licence.
  2. Registration under the FCRA is mandatory to receive donations from outside of India.
  3. The NGOs applying for an FCRA licence must define their activities.How many of the statements given above are correct?  
(a) Only one (b) Only two  
(c) All three (d) None



5. With reference to the Question Hour of Parliament, consider the following statements:
1. Generally, the first hour of a sitting of the Lok Sabha is devoted to Questions.
  2. An Unstarred Question is one which is called for oral answer in the House.
  3. A question isn't admissible if its subject matter is pending judgment before any court of law.
- How many of the statements given above are correct?
- (a) Only one (b) Only two  
(c) All three (d) None
6. With reference to the Food Safety and Standards (Labeling and Display) Regulations, 2020, which of the following information has to be included on the labels of food products?
1. List of ingredients
  2. Nutrition facts
  3. A thorough procedure for disposing of the product after expiry date
  4. Vegetarian/ non-vegetarian logos
- Select the correct answer using the code given below:
- (a) 1, 2 and 3 (b) 2, 3 and 4  
(c) 1, 2 and 4 (d) 1 and 4 only
7. With reference to the Enforcement Directorate, which of the following statements is/are correct?
1. It is a statutory body and derives its power to investigate from the Delhi Special Police Establishment Act, 1946.
  2. It functions under the Ministry of Finance.
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

### EXPLANATIONS

1. (a)

#### The EWS judgment

- **No breach of the ceiling limit of 50%:**
  - The majority 3:2 judgment had held that the **EWS quota did not breach the ceiling limit of 50%** placed by the **Indira Sawhney judgment** on reservations. **Hence option 1 is correct.**
  - The court concluded that the 50% ceiling limit, though held attached to the constitutional requirements, **was neither "inflexible nor inviolable"** for all times to come".
  - **State's provision for the reservations:**
  - Further **reservation by affirmative action by the State** cannot be seen as damaging the Basic Structure of the Constitution. **Hence option 2 is not correct.**
- It stated that the **State can make "special provisions** from time to time in the march towards an all-inclusive egalitarian society".
- **Role of judiciary:**
  - The EWS verdict had supported the view that all the courts needed to examine was whether reservation was so excessive as to become oppressive, leading to unfair exclusion.

## 2. (a)

**Statement 1 is correct:** The NIA was constituted in the wake of the 26/11 Mumbai terror attack in **November 2008**. The agency came into **existence on December 31, 2008**, and started its **functioning in 2009**.

**Statement 2 and 3 are not correct:** The NIA is a **central agency** which investigates **all offences** affecting the sovereignty, security and integrity of India, friendly relations with foreign states, and the offences under the statutory laws enacted to implement international treaties.

- **Terror Acts:** These include terror acts and their possible links with crimes like smuggling of arms, drugs and fake Indian currency and infiltration from across the borders.
- The agency has the **power to search, seize, arrest and prosecute** those involved in such offences.
- As provided under **Section 6 of the Act**, **State governments can refer the cases pertaining to the scheduled offences** registered at any police station to the **Central government (Union Home Ministry) for NIA investigation**.
- Where the Central government finds that a scheduled offence has been **committed at any place outside India** to which this Act extends, it can also direct the NIA to register the case and take up investigation.

## 3. (b)

Habitat rights are given to PVTGs under **section 3(1) (e) of The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006** also known as the Forest Rights Act (FRA).

- Habitat rights recognition **provides the community concerned rights** over their
  - customary territory of habitation,
  - socio-cultural practices,
  - economic and livelihood means,
  - intellectual knowledge of biodiversity and ecology,
  - traditional knowledge of use of natural resources, as well as
  - protection and conservation of their natural and cultural heritage.
- **Rights over enacting their own laws regarding habitation are not included under habitat rights.**

## 4. (b)

**Statement 1 is not correct:**

**Foreign Contribution Regulation Act (FCRA) Registrations:**

- The **Ministry of Home Affairs grants FCRA licences** to NGOs for five years. It evaluates applications based on annual returns and foreign grants received for their intended purposes.
  - Any misuse or diversion of foreign funds by NGOs is considered a violation of the FCRA Act.
  - It prohibits acceptance and utilisation of foreign contribution or foreign hospitality for any activities detrimental to the national interest.

**Statement 2 is correct:**

- The FCRA is an Act to consolidate the law to regulate the acceptance and utilisation of foreign contribution or foreign hospitality by certain individuals or associations or companies.
  - Registration under the **FCRA is mandatory to receive donations from outside of India**.

**Statement 3 is correct:**

- The NGOs applying for an FCRA licence must define their activities under a category such as **cultural, economic, educational, religious, or social programmes.**

5. (b)

**Statement 1 is correct: What is Question Hour?**

- Generally, the **first hour of a sitting** of the Lok Sabha is devoted to Questions and that hour is called the Question Hour.
- It is during the Question Hour that Members can ask questions on every aspect **of administration and governmental activity**
- MPs raise questions during **Question Hour** to hold the **government accountable for its policies and actions.**

**Statement 2 is not correct: Questions are of four types:** Starred, Unstarred, Short Notice Questions and Questions addressed to Private Members.

- **An Unstarred Question** is one which is **not called for oral answer** in the House and on which **no supplementary questions** can consequently be asked.
- **A Starred Question** is one to which a Member **desires an oral answer** in the House and which is distinguished by an asterisk mark (\*), **supplementary questions can be asked thereon.**

**Statement 3 is correct:** A question isn't admissible if its **subject matter is pending judgment** before any court of law or any other tribunal or body set up under law or is under consideration before a Parliamentary Committee.

6. (c)

**There is no provision regarding** the thorough procedure for disposing of the product after expiry date. **Statement 3 is not correct**

- The FSSAI under its **Food Safety and Standards (Labeling and Display) Regulations, 2020** has comprehensively outlined the information to be included on the labels of food products.
- This information includes,
  - **product name,**
  - **shelf life,**
  - **nutrition facts,**
  - **vegetarian/non-vegetarian logos,**
  - **ingredient lists,**
  - **allergen warnings, and**
  - **other product specific labelling requirements.**
- This information is aimed at **empowering consumers to make informed choices** when selecting food products.

7. (b)

**Statement 1 is not correct and 2 is correct**

**Directorate of Enforcement (ED)**

- The Directorate of Enforcement is a multi-disciplinary organization mandated with investigation of offenses of money laundering and violations of foreign exchange laws.
- It functions under **the Department of Revenue of the Ministry of Finance.**

- **The origin** of this Directorate goes back to 1st May, 1956, when an 'Enforcement Unit' was formed in the Department of Economic Affairs for handling Exchange Control Laws violations under Foreign Exchange Regulation Act, 1947 (FERA '47).
- In 1957, this Unit was renamed as 'Enforcement Directorate', and another branch was opened at Madras (now Chennai).
- In 1960, the administrative control of the Directorate was transferred from the Department of Economic Affairs to the Department of Revenue.



# GEOGRAPHY

1. Kármán Line recently seen in the news, it is related to which of the following?
- Boundary between Paracel and Spratly island chains.
  - Demarcates the earth's atmosphere from space.
  - Submerged continental crust.
  - Narrow waterway between two pieces of land.
2. With reference to the Reykjanes peninsula, which of the following statements is/are correct?
- The peninsula extends from the Alps in the north to the central Mediterranean Sea in the south.
  - The Fagradalsfjall volcano is located in the peninsula.
- Select the correct answer using the code given below:
- |                  |                     |
|------------------|---------------------|
| (a) 1 only       | (b) 2 only          |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |
3. Which of the following countries share a border with Israel?
- Egypt
  - Jordan
  - Saudi Arabia
  - Iraq
- Select the correct answer using the codes given above:
- |                     |                   |
|---------------------|-------------------|
| (a) 1 and 2 only    | (b) 2 and 3 only  |
| (c) 1, 3 and 4 only | (d) 1, 2, 3 and 4 |
4. With reference to the Sutlej River, which of the following statements is/are correct?
- The river rises from Lake La'nga in Tibet and joins the Chenab River in Pakistan.
  - It flows through the states of Uttarakhand, Himachal Pradesh and Punjab in India.
- Select the correct answer using the code given below:
- |                  |                     |
|------------------|---------------------|
| (a) 1 only       | (b) 2 only          |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |
5. Which of the following shares a border with Morocco?
- |             |                      |
|-------------|----------------------|
| 1. Algeria  | 2. Mediterranean Sea |
| 3. Tanzania | 4. Red Sea           |
- Choose the correct answer using the code given below:
- |                     |                  |
|---------------------|------------------|
| (a) 1 and 2 Only    | (b) 1 and 4 Only |
| (c) 2, 3 and 4 Only | (d) 1 and 3 Only |

6. Which of the following countries shares a border with Rwanda ?

1. Kenya
2. Uganda
3. Tanzania
4. Burundi

Select the correct answer using the code given below:

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

7. With reference to the Yamuna River, which of the following statements is/are correct?

1. The river flows through the states of Uttarakhand and Uttar Pradesh only.
2. It is the right bank tributary of the river Ganga.

Select the correct answer using the code given below:

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

8. Consider the following pairs :

Name of Cyclone	Location
1. Typhoons	Pacific Ocean
2. Willy-willies	Australia
3. Hurricanes	Caribbean Sea
4. Tornados	West Africa

How many of the above pairs are correctly matched?

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

9. Which one of the following groups of countries comprise the 'Lithium Triangle'?

- |                                  |                                   |
|----------------------------------|-----------------------------------|
| (a) Argentina, Brazil and Chile  | (b) Ecuador, Brazil and Peru      |
| (c) Argentina, Bolivia and Chile | (d) Ecuador, Bolivia and Colombia |

10. Consider the following statements:

1. Asteroids are rocky remnants left over from the early formation of the solar system about 4.6 billion years ago.
2. Bennu is a small near-Earth asteroid that passes close to Earth every year.

Which of the statements given above is/are correct?

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

11. With reference to Kenya , which of the following statements is/are correct?

1. It is a country in Africa which shares coastline with the Atlantic ocean.
2. The Tropic of Capricorn passes through the Country.

Select the correct answer using the code given below:

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

- 12.** Consider the following statements regarding “Cyclones”:
1. During a cyclone, the air circulates inward in an anticlockwise direction in the Southern hemisphere and clockwise in the Northern hemisphere.
  2. In contrast with tropical cyclones, extratropical cyclones produce rapid changes in temperature and dew point along the weather fronts.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
- 13.** Wilkes Land region, recently seen in the news due to the discovery of a hidden landscape, is related to which of the continents?
- (a) North America (b) Europe  
(c) Africa (d) Antarctica
- 14.** With reference to the Gulf of Guinea, which of the following statements is/are correct?
1. It is the northeasternmost part of the Indian Ocean.
  2. The Niger and Volta rivers drain into the Gulf of Guinea.
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
- 15.** With reference to the Graphite , which of the following statements is/are correct?
1. It is an allotrope of carbon with high electrical and thermal conductivity.
  2. Australia is the world’s top graphite producer and exporter.
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
- 16.** With reference to Earthquake waves, consider the following statements:
1. S-waves are like sound waves, they can travel through solids, liquids and gasses.
  2. P-waves have a peculiar quality of travelling through solids only.
  3. S-waves have a larger shadow zone than P-waves.
- How many statements given above is/are correct?
- (a) Only one (b) Only two  
(c) All three (d) None
- 17.** India shares a land border with which of the following countries?
1. Afghanistan
  2. Myanmar
  3. China
  4. Thailand
- Choose the correct answer using the codes given below:
- (a) 1, 2 and 3 only (b) 2, 3 and 4 only  
(c) 1, 3 and 4 only (d) 1, 2, 3 and 4



## EXPLANATIONS

1. (b)

**Kármán Line** is located at **100 km above sea level**, it is an imaginary line that demarcates the earth's atmosphere from space.

- Though not all scientists and spacefarers accept it, a **majority of countries and space organisations recognise** this boundary between earthsky and space.
- It was established in the **1960s** by a record-keeping body called **Fédération Aéronautique Internationale (FAI)**.

2. (b)

**Reykjanes peninsula**

- The **Reykjanes peninsula** is located in South West Iceland, characterized by immense lava fields, volcanoes, and heightened geothermal activity.
- **Volcanic eruption:** In the region there were no recorded volcanic eruptions for 800 years. However, for the last 2-3 years Fagradalsfjall volcano has witnessed a constant eruption.
- **The main geothermal areas of Reykjanes are Gunnuhver, Krysuvik, and Svartsengi.**



3. (a)

Israel shares a border **with Egypt and Jordan**.

- For further clarification refer to the map given below





4. (a)

**Statement 1 is correct and Statement 2 is not correct.**

- Sutlej River is the **tributary of the Indus River**.
- It rises on the north slope of the Himalayas in **Lake La'nga (Lake Rakshastal)** in southwestern Tibet, at an elevation above 15,000 feet (4,600 meters).
- Flowing through Himalayan gorges, it enters and crosses the Indian state of **Himachal Pradesh and Punjab**.
- Continuing southwestward in a broad channel, it receives the Beas River and forms 105 km of the India-Pakistan border before entering Pakistan and joins the **Chenab River (Pakistan)**.

5. (a)

**In News:** A powerful earthquake struck Morocco, claiming more than 2,800 lives.

**Morocco** is a mountainous country of western North Africa.

- It lies directly across the Strait of Gibraltar from Spain.
- **Capital:** Rabat
- It borders **Algeria** to the east and southeast, Western Sahara to the south, the Atlantic Ocean to the west, and the **Mediterranean** Sea to the north.
- It is the only African country with coastal exposure to both the Atlantic Ocean and the Mediterranean Sea.

6. (c)

**In News:** Rwanda stands out both in Africa and globally for its efforts in advancing gender equality and women's empowerment, and particularly in the area of political participation.

- Nearly two third (61%) of its parliamentary seats and 55% of cabinet position is held by women
- Rwanda is a country situated in Central Africa.
- **Capital City :** Kigali
- It is bordered to the North by **Uganda**, to the East by **Tanzania**, to the South by **Burundi** and to the West by the Democratic Republic of Congo.
- It is also known as '**The Land of a Thousand Hills**'

7. (b)

**Statement 1 is not correct and 2 is correct.**

- The Yamuna rises on the slopes of the **Bandarpunch** massif in the Great Himalayas near **Yamunotri** in Uttarakhand.
- The river flows through the state of **Uttarakhand, Himachal Pradesh, Haryana, Uttar Pradesh and the Union Territory of Delhi**.
- The important tributaries of the Yamuna River are Tons, Chambal, Hindon, Betwa and Ken.
- **Yamuna is the right bank tributary of river Ganga.**

8. (d)

**In News :** A study just published in the journal Climate and Atmospheric Science reported a sharp change in the potential for **cyclones to form over the Arabian Sea** during the **late 1990s**.

- The word **Cyclone** is derived from the **Greek** word **Cyclos** meaning the coils of a snake.
- It was coined by **Henry Peddington** because the **tropical storms** in the **Bay of Bengal** and the **Arabian Sea** appear like coiled serpents of the sea.

- The air circulates inward in an **anticlockwise direction** in the **Northern hemisphere** and **clockwise** in the **Southern hemisphere**.
- Cyclones are given many names in different regions of the world – They are known as **typhoons** in the **China Sea** and **Pacific Ocean**; **hurricanes** in the **West Indian islands** in the **Caribbean Sea and Atlantic Ocean**; **tornados** in the Guinea lands of **West Africa** and southern USA.; **willy-willies** in north-western **Australia** and **tropical cyclones** in the Indian Ocean.

9. (c)

- Lithium is a chemical element with the symbol Li and **atomic number 3**. It is a soft, silvery-white alkali metal.
- Like all alkali metals, lithium is highly reactive and flammable, and must be stored in vacuum, inert atmosphere, or inert liquid such as purified kerosene or mineral oil.
- Chile, Australia, Argentina, Bolivia and China contain most of the reserves discovered so far globally.
- Argentina, Bolivia and Chile are known as the '**Lithium Triangle**' and contain about **54%** of the world's Lithium reserves.

10. (a)

**Statement 1 is correct:** Asteroids, sometimes called **minor planets**, are **rocky remnants left over** from the early formation of the solar system about 4.6 billion years ago.

- The three broad composition classes of asteroids are **C-, S-, and M-types**.
  - **The C-type (chondrite)** asteroids are most common. They probably consist of clay and silicate rocks, and are dark in appearance. They are among the most ancient objects in the solar system.
  - **The S-types ("stony")** are made up of silicate materials and nickel-iron.
  - **The M-types are metallic (nickel-iron).**
  - The asteroids' compositional differences are related to **how far from the Sun they formed**.

**Statement 2 is not correct:** Bennu is a **small near-Earth asteroid** that passes close to Earth **every six years**.

- A 4.5 billion-year-old relic of the solar system's early days, asteroid Bennu has seen it all.
- Bennu's current composition, according to scientists, was established within 10 million years of the formation of solar system.

11. (d)

- **Kenya** is a country in East Africa with coastline on the **Indian Ocean**. It encompasses savannah, lakelands, the dramatic Great Rift Valley and mountain highlands.
- **Capital:** Nairobi
- Kenya is bisected horizontally by the Equator.
- Kenya is bordered to the north by **South Sudan** and **Ethiopia**, to the east by **Somalia** and the Indian Ocean, to the south by **Tanzania**, and to the west by **Lake Victoria and Uganda**.



12. (b)

### Cyclones

#### • About:

- A cyclone is any low-pressure area with winds spiralling inwards and is **caused by atmospheric disturbances around a low-pressure area**.
- It is distinguished by **swift and often destructive air circulation**.
- **Pattern of circulation:** The air circulates inward in an anticlockwise direction in the Northern hemisphere and clockwise in the Southern hemisphere. **Hence statement 1 is incorrect.**

#### Types of Cyclones:

##### • Tropical Cyclone:

- Cyclones that develop in the regions between the Tropics of Capricorn and Cancer are called tropical cyclones.
- Tropical cyclones are large-scale weather systems developing over tropical or subtropical waters, where they get organised into surface wind circulation.

##### • Extra tropical Cyclone (also called Temperate Cyclone):

- They occur in temperate zones and high latitude regions.
- In contrast with tropical cyclones, extratropical cyclones produce rapid changes in temperature and dew point along broad lines, called weather fronts, about the center of the cyclone. **Hence statement 2 is correct.**

13. (d)

Scientists discovered a hidden landscape 'frozen in time' under Antarctic ice.

- Scientists used satellite photos combined with **radio-echo sounding data** to create an image of Antarctica's hidden landscape.
- It is located in **East Antarctica's Wilkes Land region** bordering the Indian Ocean, covering an area roughly the size of **Belgium** or the **U.S. state of Maryland**.
- It is a vast, **hidden landscape of hills and valleys** carved by **ancient rivers**.
  - The area spreads across 32,000 square kilometres (12,000 square miles) and was once home to trees, forests and probably animals,
- It has been "**frozen in time**" under the Antarctic ice for millions of years.

14. (b)

**Gulf of Guinea**

- **Location:** The Gulf of Guinea is the northeasternmost part of the **Atlantic Ocean** from **Cape Lopez in Gabon** to **Cape Palmas in Liberia**. The coastline on the gulf includes the **Bight of Benin** and the **Bight of Bonny**.
- **Rivers:** The **Niger and Volta** rivers drain into the Gulf of Guinea.
- **Islands in the Gulf of Guinea:** Annobón, Bioko, Bobowasi Island, Corisco, São Tomé and Príncipe.



15. (a)

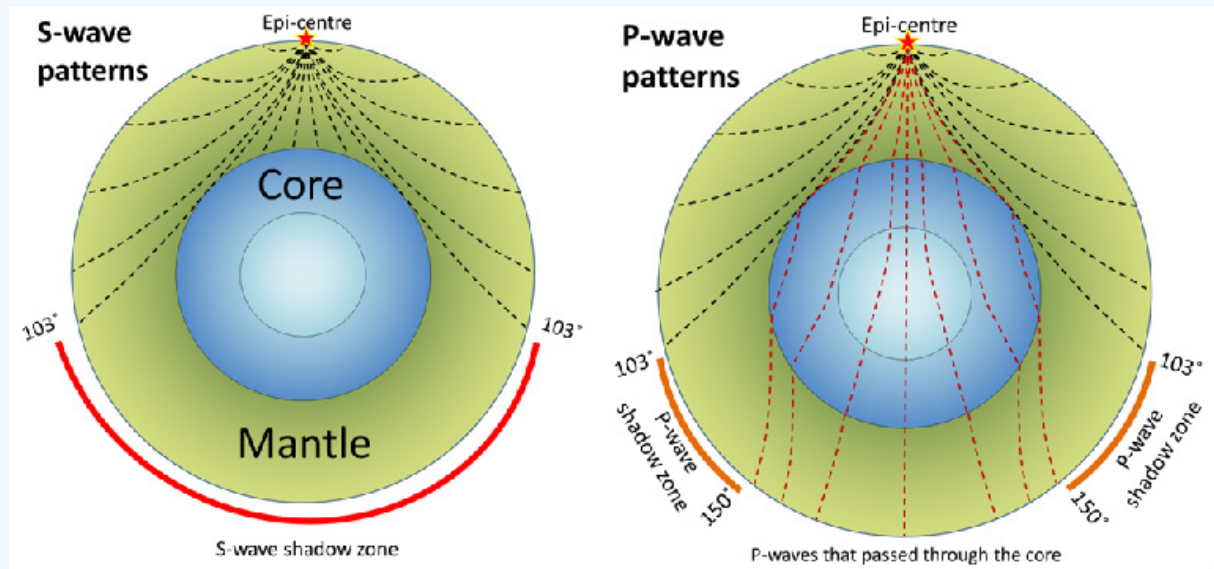
**Statement 1 is correct and 2 is not correct****Graphite**

- It is a naturally occurring form of crystalline carbon.
- It is a native element mineral found in **metamorphic and igneous rocks**.
- It is one of the common allotropes of carbon and crystallizes in the hexagonal system.
- It is not elastic and has **high electrical and thermal conductivity**.
- China is the **world's top graphite producer and exporter**. It refines over 90% of the world's graphite for electric vehicle battery anodes.
- **Applications:** Pencils, lubricants, crucibles, foundry facings, polishes, arc lamps, batteries, brushes for electric motors, and cores of nuclear reactors.

16. (a)

**Statement 1 and statement 2 are not correct:** The S-waves are not like sound waves. The P-waves are similar to sound waves. P-waves can travel through gaseous, liquid and solid materials.

**Statement 3 is correct:** The shadow zone of S-wave is much larger than that of the P-waves. The shadow zone of P-waves appears as a band around the earth between 105 ° and 145 ° away from the epicentre. The shadow zone of S-waves is not only larger in extent but it is also a little over 40 per cent of the earth surface.



17. (a)

#### India's borders

- India shares land **borders with China, Bhutan, Nepal, Pakistan, Afghanistan, Bangladesh and Myanmar.**
- India's borders are unique due to the **variety of terrains** through which these borders pass, namely deserts, mountains, glaciers and forests.
  - It is obvious that managing such large borders in diverse terrain conditions pose myriad challenges.



# GOVERNMENT SCHEMES/ INITIATIVES

1. With reference to the Swachh Bharat Mission, consider the following statements:
  1. It was launched in 2014 with the goal of achieving universal sanitation coverage by 2019.
  2. It consists of two sub-missions, urban, and rural or Gramin (G).
  3. Swachh Bharat Mission - Gramin (SBM-G) aims to make Gram Panchayats Open Defecation Free (ODF), clean and sanitized.How many statements given above are correct?
  - (a) Only one
  - (b) Only two
  - (c) All three
  - (d) None
2. With reference to 'SHRESHTA Scheme', consider the following statements:
  1. It was launched for providing seats for the meritorious Scheduled Caste students in the private residential schools.
  2. The progress of the students will be monitored by the Ministry of Education.Which of the statements given above is/are correct?
  - (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
3. Consider the following statements regarding the Governance of Scheduled Areas in India:
  1. The Governor can make regulations for a Scheduled Area to prohibit or restrict the transfer of tribal land among members of the STs.
  2. The Governor can not repeal or amend any law enacted by Parliament in its application to the Scheduled Area of that State.Which of the statements given above is/are correct?
  - (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
4. With reference to Tele-MANAS service, consider the following statements:
  1. It is a comprehensive mental health care service that provides access to affordable mental health care in every State/UT.
  2. It only comprises the State Tele MANAS cells, which include trained counselors and mental health specialists.Which of the statements given above is/are correct?
  - (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
5. Consider the following statements, with reference to the Intensified Mission Indradhanush (IMI 5.0):
  1. It is being conducted across all the districts in the country for the first time and includes children up to 10 years of age .



2. It aims to enhance immunization coverage for all vaccines provided under the Universal Immunization Programme (UIP).
3. Its special focus is on Measles & Rubella elimination by 2023 .

How many of the above statements are correct?

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

6. With reference to 'Apna Chandrayaan', consider the following statements:

1. It is launched by the Ministry of Education and Skill Development & Entrepreneurship.
2. It is a web portal with activity-based support material on Mission Chandrayaan for students.

Which of the statements given above is/are correct?

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

7. Operation 'Nanhe Farishtey' is launched by which of the following?

- (a) Railway Protection Force (RPF)
- (b) United Nations International Children's Emergency Fund (UNICEF), India
- (c) Smile Foundation India
- (d) Ministry of Women and Child Development

8. Consider the following statements with reference to the Meri Maati, Mera Desh campaign:

1. It is announced to commemorate the official beginning of the Azadi ka Amrit Mahotsav program.
2. It is being organised by the Ministry of Culture.

Which of the statements given above are correct?

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

9. "Operation Chakra-II" recently seen in the news, is related to which of the following?

- (a) To fight against transnational organised cyber-enabled financial crimes in India.
- (b) To safeguard India's ancient treasures from the Mauryan period.
- (c) To fight against naxal movement in India's red corridor.
- (d) To facilitate the return of Indian nationals from war-torn Israel.

10. Consider the following statements regarding the Mahila Samman Savings Certificate Scheme (MSSC).

1. It is exclusively for girl children in India below the age of 10 years.
2. Maximum 5 Lakhs can be deposited for a period of two years.
3. The interest rate for MSSC is 7.5% p.a. which is compounded quarterly.

How many of the above statements are correct?

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

11. With reference to the APAAR, Automated Permanent Academic Account Registry, consider the following statements :

1. APAAR is a part of the 'One nation, One Student ID' initiative of the Union government.
2. Registration for creating APAAR ID is voluntary.

3. It is envisaged as an identity that gives students citizenship status.

Which of the statements given above are correct?

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

12. With reference to the Carbon Credit and Trading Scheme (CCTS), consider the following statements:

1. It aims to develop the first-ever domestic carbon market of India.
2. It envisioned the formation of a National Steering Committee for the Indian Carbon Market.
3. It comes under direct observation of the Union Ministry of Environment, Forests and Climate Change.

How many of the statements given above are correct?

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

13. D K Mittal Committee is associated with which of the following?

- (a) Privatisation of Banks  
(b) Reforms to achieve the developed economy status by 2047.  
(c) Action plan for revenue generation of Indian Railways  
(d) Prisons reforms

## EXPLANATIONS

1. (c)

**All three statements are correct:** The Swachh Bharat (Clean India) Mission (SBM) was launched in 2014 with the goal of achieving **universal sanitation coverage by 2019**, as a tribute to the **150th Birth Anniversary of Mahatma Gandhi**.

- It consisted of two sub-missions, **urban, and rural or Gramin (G)**.
- SBM(G) sought to improve “the levels of cleanliness through **Solid and Liquid Waste Management activities** and making Gram Panchayats **Open Defecation Free (ODF)**, clean and sanitized.
- 2019 marked the end of the first phase of SBM(G), the second phase, started in 2020-2021, expands efforts with a focus on **safe management of solid and liquid waste and sustainability of ODF**.

2. (c)

**Both the statements are correct.**

**Scheme for Residential Education for Students in High Schools in Targeted Areas (SHRESHTA) Scheme:**

- provide seats **to the meritorious SC students** in the best private residential schools in the country. Hence, Statement 1 is correct.

**Benefits:**

- Under this for the students taking admission, their entire fee including **school fees (tuition fees) and hostel fees (mess charges)** will be waived.
  - Admissible fees for each class are specified as follows- **9th: ₹1,00,000, 10th: ₹1,10,000, 11th: ₹1,25,000, 12th: ₹1,35,000.**



- Students can take the benefit of a bridge course within the selected schools, which focuses on the individual academic requirements of students and aids their adjustment to the school environment.
- The cost of the bridge course, equivalent to **10% of the annual fee**, is also covered under the scheme and the progress of these students will be monitored by the **Ministry of Education**. **Hence, Statement 2 is also Correct.**

3. (a)

#### Governance of Scheduled Areas

- **Notification of the Scheduled Areas:**
  - The President of India notifies India's Scheduled Areas.
  - The court has observed that the declaration of a Scheduled Area is "within the exclusive discretion of the President".
- **Tribal Advisory Council:**
  - States with Scheduled Areas need to constitute a Tribal Advisory Council with up to 20 ST members.
  - They will advise the Governor on matters referred to them regarding ST welfare.
  - The **Governor will then submit a report every year** to the President regarding the administration of Scheduled Areas.
- **Role of Governor:**
  - The Governor **can repeal or amend any law** enacted by **Parliament** and the **State Legislative Assembly** in its application to the Scheduled Area of that State. **Hence statement 2 is not correct.**
  - The Governor can also **make regulations** for a Scheduled Area, especially to prohibit or restrict the transfer of tribal land by or among members of the STs, and regulate the allotment of land to STs and money-lending to STs. **Hence statement 1 is correct.**

4. (a)

#### About Tele Mental Health Assistance and Networking Across States (Tele-MANAS)

**Statement 1 is correct.** Tele MANAS is a comprehensive mental health care service that provides access to affordable mental health care in every State/UT.

- It is an initiative of the **Union Ministry of Health and Family Welfare** and was launched on the occasion of **World Mental Health Day 2022**.
- It comprises of **two tiers**:
  - **Tier 1** will comprise the State Tele MANAS cells, which include trained counselors and mental health specialists.
  - **Tier 2** will comprise specialists at District Mental Health Programme (DMHP)/Medical College resources for physical consultation and/or eSanjeevani for audio-visual consultation. **Hence, Statement 2 is not correct.**

5. (b)

**In News:** Intensified Mission Indradhanush (IMI 5.0) will conclude all 3 rounds on 14th October 2023.

**Statement 1 is not correct :** Intensified Mission Indradhanush (IMI 5.0) is the flagship routine immunization campaign of the **Union Ministry of Health and Family Welfare**.

- It ensures that routine immunization services reach the missed-out and dropped out children and pregnant women across the country.

- This year, for the **first time the campaign** is being conducted across all the districts in the country and includes children **up to 5 years of age** (Previous campaigns included children up to 2 years of age).

**Statements 2 and 3 are correct :** **Special focus** is on improvement of **Measles and Rubella** vaccination coverage with the aim of **Measles & Rubella elimination by 2023** and use of U-WIN digital platform for **Routine Immunization** in pilot mode across all districts in the country.

- IMI 5.0 campaign aims to enhance immunization coverage for all vaccines provided under the **Universal Immunization Programme (UIP)** as per the National Immunization Schedule (NIS).

6. (c)

**Both the statements are correct:**

**About 'Apna Chandrayaan' Portal**

- It is launched by the **Ministry of Education and Skill Development & Entrepreneurship**.
- The web portal has activity-based support material such as **books, quizzes, puzzles, picture builders, and inspiring stories in the form of graphics on Chandrayaan-3 for students**.
- The portal will display inspiring stories in the form of graphic novels depicting events that shaped ISRO's journey to Chandrayaan 3.
- Also, the **Digital certificates** will be issued to those who would score more than 70%, and the first 1000 winners will receive age-appropriate books.
- There will be **10 special modules** on Chandrayaan-3 which will offer a comprehensive overview of various **scientific, technological, and social aspects**.

7. (a)

**Operation Nanhe Farishtey** is an initiative of the **Railway Protection Force (RPF)**.

- Under this operation, RPF plays an important role in reuniting the children lost/separated due to several reasons from their families.
- About **Railway Protection Force**:
  - Constituted as a federal Force in the year **1957**, RPF is responsible for the **security of railway property, and passenger and passenger zones**.
  - RPF motto: **"SEWA HI SANKALP" – "A PROMISE TO SERVE"**.
  - It has been implementing innovative solutions suited to the typical needs at the **ground-zero level**.
  - RPF has the distinction of being the federal force of India with the largest share of women in its ranks.

8. (b)

**In News :** The Indian Railways will operate special trains to transport volunteers of the Meri Maati, Mera Desh campaign carrying mitti (soil) from State capitals and other major stations across the country to reach New Delhi.

**Statement 1 is not correct :** **Meri Maati, Mera Desh campaign** is envisaged from 9th August 2023 as a **culminating event of 'Azadi Ka Amrit Mahotsav'**.

- It is a tribute to the **Veers and Veeranganas** who have made the supreme sacrifice for the country.

**Statement 2 is correct :** **Meri Maati, Mera Desh campaign** is being organised by the **Ministry of Culture**.

- It comprises many activities and ceremonies conducted across the country at Panchayat/ Village, Block, Urban Local Body, State and National levels

9. (a)

The Operation Chakra-II was launched by the CBI to fight against transnational organised cyber-enabled financial crimes in India.

- For this, CBI has partnered with Microsoft and Amazon as well as with national and international agencies to combat and dismantle infrastructure of illegal call centres.

10. (a)

**Statements 1 and 2 are not correct :** The Mahila Samman Savings Certificate Scheme (MSSC) is a newly launched small savings scheme of the Government to commemorate the Azadi Ka Amrit Mahotsav and is exclusively for women and girls in India. It has been made available for a two-year period up to March 2025.

Some of the salient features of the schemes include:

- MSSC accounts may be opened by women of any age group including the girl child with a minimum deposit of ₹1000/- and maximum deposit of ₹2 Lakhs for a period of two years.

**Statement 3 is correct :** The interest rate for MSSC is 7.5% p.a. which is compounded quarterly. The facility of partial withdrawal and premature closure on compassionate grounds are also available under this Scheme.

11. (a)

**Statement 1 and 2 are correct:** APAAR (Automated Permanent Academic Account Registry) is a part of the 'One nation, One Student ID' initiative of the Union government.

- It is envisaged as a new student identity card launched as part of the National Education Policy 2020.
  - There is no provision regarding giving students citizenship status.
- To sign up for APAAR, students will have to provide basic information such as name, age, date of birth, gender, and a photograph. This information will be verified using their Aadhar number.
- Students will need to sign a consent form, and they can choose to either accept or decline sharing their Aadhar number and demographic information with the Ministry of Education for creating the APAAR ID.
  - For minors, parents will have to sign the consent form, allowing the Ministry to use the student's Aadhar number for authentication with UIDAI.
  - Registration for creating APAAR ID is voluntary, not mandatory.

12. (b)

**Statement 1 is correct:** The Carbon Credit and Trading Scheme (CCTS): It was notified by the Union Government under the Energy Conservation Act, 2001, to develop the country's first-ever domestic carbon market. It was set up as the regulatory framework for the Indian Carbon Market (ICM), with BEE as the administrator.

**Statement 2 is correct:** It envisioned the formation of a National Steering Committee for Indian Carbon Market (NSCICM) for the governance and direct oversight of the Indian Carbon Market (ICM). The committee will be chaired by the Secretary (Ministry of Power); and co-chaired by the Secretary (Ministry of Environment, Forests and Climate Change).

**Statement 3 is not correct:** In exercise of the powers conferred in the Energy Conservation Act, 2001 the Union Ministry of Power, in consultation with the Bureau of Energy Efficiency (BEE), has launched the Carbon Credit Trading Scheme to address the issue of greenhouse gas (GHG) emissions and mitigation of climate change in the country.

**13.(c)**

Indian Railways (IR) has been splurging on capital expenditures (capex), there have been concerns about its operating ratio and revenue generation.

- Indian Railways is an extensive network covering over 67,000 route kilometers and serving around 8,000 stations.
- It is the **world's 4th largest railway network**, followed by the US, China and Russia.
- It is often referred to as the **"lifeline of India"** due to its crucial role in transporting goods and passengers across the country.

**D. K. Mittal Committee** was formed in 2014 to provide recommendations on raising revenue for the Indian Railways.

- **Fare Rationalization:** Periodic review and adjustment of passenger fares to better reflect the operational costs.
  - Implementing dynamic pricing to vary fares based on demand and time of booking, particularly for premium trains.
- **Freight Tariff Reform:** Simplifying the freight tariff structure to make it more competitive and transparent.
  - Offering discounts and incentives for high-volume cargo and long-term freight contracts.
- **Monetization of Assets:** Exploring opportunities to monetize railway land and properties through commercial development, leasing, or joint ventures.
  - Developing railway stations as commercial hubs with retail spaces, restaurants, and entertainment options, on the lines of National Monetization Pipeline.



# DEFENSE/ INTERNAL SECURITY

1. With reference to the Astra Missiles, consider the following statements:

1. It is an indigenously developed Surface - to - Air missile comprising Astra Missile and Launcher.
2. It has a range of 80 -110 km and an altitude of up to 20 km.

Which of the statements given above are correct?

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

2. With reference to the Veer Gatha Project, consider the following statements:

1. It is established to raise awareness about the brave acts and sacrifices of the Gallantry Award winners among school students.
2. The best project is awarded nationally by the Prime Minister on Independence Day celebrations.

Which of the statements given above is/are correct?

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

3. With reference to Unlawful Activities (Prevention) Act, consider the following statements:

1. Under this act any action that intends to strike terror among people only within territory of India is termed as terrorist act.
2. The act has defined 'Prima Facie case against the accused' narrowly and lays down that courts need not analyse the case thoroughly but look at the case in totality.

Which of the statements given above is/are correct?

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

## EXPLANATIONS

1. (b)

ASTRA is an indigenously developed Beyond Visual Range **Air - to - Air missile** comprising of Astra Missile and Launcher.

- **Range: 80 -110 km**
- **Altitude: up to 20 km**
- Flight Duration: 100 – 120 Sec
- Max Speed: Mach 4.5
- Propulsion: Solid Rocket Motor
- Launch platform: Su-30 MKI

2. (a)

Being a part of **Azadi ka Amrit Mahotsav**, it has been launched in schools to raise awareness about the **Gallantry Awards**. Hence, **statement 1 is correct**.

- **Aim:** To raise awareness about the brave acts and sacrifices of the Gallantry Award winners among school students.
- **Activities conducted:**
  - The projects can be interdisciplinary and in various formats like poems, paintings, essays, videos, etc.
  - Schools have conducted various projects/activities and have uploaded a total of four best entries from each school on the MyGov portal.
  - Virtual/ face-to-face awareness programs/sessions for schools across the country.
- The best project is rewarded nationally by the Ministry of Defence on the forthcoming Republic Day. **Hence, Statement 2 is not correct.**
- Each winner will be awarded a cash prize of Rs.10,000.

3. (d)

**Statement 1 is not correct.** Under UAPA act, any action that intends to strike terror among people **within territory of India and outside India**, is termed as terrorist act. It is applicable even if the offence is committed outside India.

**Section 15** of the UAPA act defines “terrorist act” and is punishable with imprisonment for a term of at least five years to life. In case the terrorist act results in death, the punishment is death or imprisonment for life. This is an offence that describes violent acts that are serious in nature. And **Section 16** prescribes punishment for terrorist acts.

**Statement 2 is not correct.** In 2019, the Supreme Court has defined prima facie narrowly to mean that the courts must not analyse evidence or circumstances, **but look at the “totality of the case” presented by the state.**

# INTERNATIONAL RELATIONS

1. Which of the following is not a crime that the International Criminal Court (ICC) can investigate and prosecute?

- (a) Genocide
- (b) War crimes
- (c) The crime of aggression
- (d) International terrorism

2. Consider the following statements:

1. India was the first country to recognise the state of Israel by voting in favour of the 'partition of Palestine plan' at the United Nations General Assembly (UNGA).
2. India became the first non-Arab state to recognise the Palestine Liberation Organisation (PLO).

Which of the above given statements is/are correct?

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

3. Consider the following pairs of evacuation operations conducted by India:

Operation	Country
1. Kaveri	Sudan
2. Maitri	Sri Lanka
3. Raahat	Nepal
4. Dev Shakti	Afghanistan
5. Ajay	Israel

How many pairs given above are correctly matched?

- (a) Only two
- (b) Only three
- (c) Only Four
- (d) All Five

4. India's relationship with the United Kingdom is marked by which of the following?

1. I2U2 Dialogue
2. Ajeya Warrior (army-to-army biennial exercise)
3. Young Professionals Scheme

Select the correct answer using the code given below:

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

5. The deal for 31 MQ-9B Unmanned Aerial Vehicles (UAVs) was recently concluded by the Indian government with which of the following countries?

- (a) Russia
- (b) Israel
- (c) USA
- (d) France

6. With reference to the Comprehensive Nuclear Test ban treaty (CTBT), which of the following statements is/are correct?
1. The treaty was adopted by the UN General Assembly immediately after World War II.
  2. India has signed but is yet to ratify the treaty.
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
7. With reference to the Organization for Economic Cooperation and Development (OECD), consider the following statements:
1. It is an intergovernmental organisation of 38 member countries.
  2. It was founded in 1961 to stimulate economic progress and world trade.
  3. Its Headquarter is located in Venice, Italy.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3
8. With reference to the International Court of Justice, consider the following statements:
1. It was established in 1945 by the United Nations Charter.
  2. It is composed of 10 judges.
  3. It has jurisdiction to try individuals accused of war crimes or crimes against humanity.
- How many statements given above are correct?
- (a) Only one (b) Only two  
(c) All three (d) None
9. The 'Regional Anti-Terrorist Structure (RATS)' sometimes mentioned in the news, is related to which of the following organisations?
- (a) FATF (b) G20  
(c) United Nations (d) SCO
10. With reference to the United National General Assembly (UNGA), consider the following statements:
1. It is the only universally representative body of the United Nations.
  2. Each of the Member States of the United Nations has voting power in the UNGA which is in proportion to their population sizes.
  3. It appoints the Secretary General on a suo-motu basis.
- How many of the statements given above are correct?
- (a) Only one (b) Only two  
(c) All three (d) None



## EXPLANATIONS

## 1. (d)

The ICC is the first and only permanent international court with jurisdiction to prosecute individuals for the most serious crimes of concern to the international community: **genocide, war crimes, crimes against humanity and the crime of aggression.**

- The crime of aggression is a relatively new crime that was **added to the ICC's jurisdiction in 2017.**
- **International terrorism is not a crime that the ICC can prosecute.**

## 2. (b)

**India's position on Israel-Palestine conflict**

- **Post Independence:** India's political attitude towards Israel was set quite firmly shortly after independence in 1947, when Jawaharlal Nehru and Mahatma Gandhi vowed to support the Palestinian cause as they rejected the idea of two nations on the basis of religion.
  - India's position with regard to Palestine was also guided by the general consensus in the Arab world, the Non-Aligned Movement, and the United Nations.
- **Vote against Israel at UN:**
  - When the partition of Palestine plan was put to vote at the UN, **India voted against**, along with the Arab countries. **Hence, statement 1 is not correct.**
  - When Israel applied for admission to the UN, India again voted against.
- **Recognition for Israel:**
  - India announced its recognition of Israel on September 17, 1950.
  - In 1953, Israel was allowed to open a consulate in Mumbai, but no diplomatic presence was granted in New Delhi.
- **Recognition for the Palestine Liberation Organisation (PLO):**
  - In early 70's the Palestine Liberation Organisation (PLO) emerged as the representative of the people of Palestine
  - India recognised PLO as the sole and legitimate representative of the Palestinian people and permitted it an independent office at New Delhi.
  - While India was one of the last non-Muslim states to recognise Israel, it became the **first non-Arab state to recognise the PLO. Hence, statement 2 is correct.**
- **Towards the end of the Cold War:**
  - The end of the Cold War weakened the Non-Aligned Movement and reduced the ideological hostility towards Israel.

## 3. (b)

**Pair 1 is correct: Operation Kaveri:** Under Operation Kaveri, India rescued its citizens in buses from conflict zones in Khartoum and other troubled areas to **Port Sudan.**

**Pair 2 is not correct: Operation Maitri:** Operation Maitri was initiated by the Indian government in the aftermath of the **Nepal earthquake on 25 April 2015.**

**Pair 3 is not correct: Operation Raahat:** An operation was launched by the Indian Armed Forces to evacuate 4,640 Indians and 960 foreign nationals of 41 countries from Yemen during the 2015 **Yemen Crisis.**

**Pair 4 is correct: Operation Dev Shakti:** The evacuation operation from **Afghanistan** in the backdrop of the Taliban's takeover of the country is known as "Operation Devi Shakti".

**Pair 5 is correct: Operation Ajay:** India has launched Operation Ajay, a major operation to evacuate Indian citizens who wish to return from conflict-hit **Israel**.

4. (c)

#### India-U.K. relations

- **Option 1 is not correct:**

- The I2U2 Group is a grouping of India, Israel, the United Arab Emirates, and the United States.

- **Option 2 is correct:**

- **Ajeya Warrior** (army-to-army biennial exercise), the **Konakan** (joint navy-to-navy annual exercise) and the **Indradhanush** (joint air-to-air exercise) happen between India and UK.

- **Option 3 is correct:**

- The **Young Professionals Scheme** was conceived as part of an **India-U.K. The Migration and Mobility MoU** signed in May 2021, was announced in November at the **G20 summit in Bali**.
- The scheme will permit degree-holding citizens aged between 18 and 30 to live and work in each other's countries for a period of two years.

5. (c)

The deal for 31 MQ-9B Unmanned Aerial Vehicles (UAVs) was recently concluded by the Indian government with the **United States**.

- The deal will include **15 Sea Guardians for the Indian Navy, and eight Sky Guardians each for the Indian Army and the Indian Air Force**. The deliveries are expected to begin in 2027.
- The MQ-9B UAV is a **high-altitude, long-endurance UAV** that can be used for a variety of missions, including intelligence, surveillance, and reconnaissance (ISR), strike, and electronic warfare.

6. (d)

#### Both the Statements are not correct

#### Comprehensive Nuclear Test ban treaty (CTBT)

- **The CTBT** is an international treaty envisioning the banning of nuclear weapons tests and any other nuclear explosions. The CTBT seeks to ban all nuclear explosions, for both military and peaceful purposes.
- The treaty was **adopted by the UN General Assembly in 1996** and has since been **signed by 186 countries and ratified by 177**.

#### Legal status of CTBT

- The treaty has **not legally come into force**; it can only do so when it has been signed and ratified by the **44 countries** which are part of the treaty's **Annex 2** and had formally participated in the 1996 session of the Conference on Disarmament. These countries possessed nuclear power or research reactors at the time.
- Countries like **North Korea, India and Pakistan have not signed** the CTBT.
- Five of the 44 countries — **China, Egypt, Iran, Israel, and the U.S.** — **have signed but are yet to ratify** the treaty; nine countries have nuclear weapons, while the remaining 35 possess nuclear power and research reactors.

7. (a)

**Statement 1 and 2 are correct:** Organization for Economic Cooperation and Development (OECD) is an **intergovernmental organisation of 38 member countries**, most being rich developed nations that attract migrant workers and students.

- It was founded in **1961** to stimulate economic progress and world trade.
- The forerunner to the OECD was the Organisation for European Economic Co-operation and Development (OEEC), formed in **1947** to administer American and Canadian aid under the auspices of the Marshall Plan following World War II.

**Statement 3 is not correct:** The OECD's headquarter is in **Paris, France**.

8. (a)

**Statement 1 is correct: International Court of Justice**

- The Court is the **principal judicial organ of the United Nations**.
- It was established by the United Nations Charter in 1945.

**Statement 2 and 3 are not correct:** It is composed of **15 judges**, has a **two fold role**: first, to settle legal disputes between States submitted to it by them and, second, to give advisory opinions on legal matters referred to it by duly authorized United Nations organs and specialized agencies.

- The Court has **no jurisdiction** to deal with applications from individuals, non-governmental organizations, corporations or any other private entity.
- It has **no jurisdiction** to try individuals accused of war crimes or crimes against humanity.

9. (d)

**Option (d) is correct:** The Regional Anti-Terrorist Structure (RATS), headquartered in Tashkent, Uzbekistan, is a **permanent organ of the SCO** which serves to promote cooperation of member states against terrorism, separatism and extremism. Each member state sends a permanent representative to RATS. SCO has two Permanent Bodies - (i) SCO Secretariat in Beijing and (ii) Executive Committee of the Regional Anti-Terrorist Structure (RATS) in Tashkent. The Chairmanship of SCO is by rotation for a year by Member States. The Shanghai Cooperation Organization (SCO) is an eight-member multilateral organization, established on 15 June 2001 in Shanghai, China by the leaders of China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan.

10. (a)

**Statement 1 is correct:**

**The UN General Assembly (UNGA):**

- It provides a unique forum for multilateral discussion of the full spectrum of international issues **covered by the Charter of the United Nations**.
- It is the **only universally representative body** of the United Nations.
  - The **other major bodies** are the Security Council, the Economic and Social Council, the Secretariat, and the International Court of Justice.

**Statement 2 is not correct:** Each of the Member States of the United Nations has **an equal vote**. Votes taken on designated important issues – such as recommendations on peace and security, the election of Security Council and Economic and Social Council members, and budgetary questions – require a two-thirds majority of Member States, but other questions are decided by a simple majority.

**Statement 3 is not correct:** It elects the **nonpermanent members** of the **Security Council** and **other UN bodies**, such as the Human Rights Council, and **appoints the secretary-general** based on the Security Council's recommendation.

- The assembly works with the Security Council **to elect the judges of the International Court of Justice**.



# SCIENCE & TECHNOLOGY

1. 'Rifampin, isoniazid, pyrazinamide, and ethambutol' are the drugs indicated for the treatment of which of the following?
  - (a) Malaria
  - (b) Whooping cough (pertussis)
  - (c) Tuberculosis (TB)
  - (d) Bacterial meningitis
2. With reference to Malaria disease, which of the following statements is/are correct?
  1. It is caused by plasmodium protozoa which spreads through the bites of infected female Anopheles mosquitoes.
  2. Currently there is no vaccine available that can prevent the disease.Select the correct answer using the code given below:
  - (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
3. Which of the following statements are correct about Cholera?
  1. It is a disease caused by fungus.
  2. It is an air-borne disease.
  3. Cholera transmission is closely linked to inadequate access to clean water and sanitation facilities.Select the correct answer using the code given below:
  - (a) 2 only
  - (b) 3 only
  - (c) 1 and 3 only
  - (d) 1, 2 and 3
4. Which of the following statements regarding the Uterus transplant is not correct?
  - (a) Uterus transplants can help women who lack a uterus fulfill their reproductive needs.
  - (b) The recipient who has successfully undergone a Uterus transplant can not become pregnant through natural means.
  - (c) India is one of a few countries to have had a successful uterine transplant.
  - (d) All are correct
5. With reference to Turmeric, consider the following statements:
  1. It is a perennial flowering plant native to Africa.
  2. Bangladesh is the largest producer, consumer and exporter of turmeric in the world.
  3. The National Turmeric Board has been constituted for the development and growth of turmeric in the country.How many of the statements given above are correct?
  - (a) Only one
  - (b) Only two
  - (c) All three
  - (d) None

6. With reference to the Quantum Dots, consider the following statements:
1. These are semiconductor nanocrystals that exhibit remarkable quantum mechanical properties.
  2. They are typically composed of elements from the periodic table's groups II-VI or III-V, such as cadmium selenide (CdSe).
  3. Their sensitivity to changes in the surrounding environment has led to the development of highly accurate and responsive sensors.
- How many statements given above are correct?
- (a) Only one (b) Only two  
(c) All three (d) None
7. Which of the following statements is not correct regarding Project Kuiper, which was recently in the news?
- (a) It is a planned broadband internet service through satellites.  
(b) It is an initiative of Europe's Eutelsat OneWeb.  
(c) It was established in 2019 to rival SpaceX's Starlink.  
(d) All are correct
8. Consider the following statements regarding the BlueWalker 3 satellite, that was recently in news:
1. It is a prototype satellite.
  2. It is a military satellite managed by the United States Space Force.
  3. It is designed to communicate directly with cellular devices.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 1 and 2 only  
(c) 1 and 3 only (d) 3 only
9. Which of the following chemicals is used in Cloud Seeding?
- (a) Silver iodide (b) Potassium chloride  
(c) Silver nitrate (d) Sodium Benzoate
10. 'Safe harbour principle', recently seen in the news, is related to which of the following?
- (a) A desirable repo rate that keeps the economy in safe position.  
(b) A principle which shields online platforms from liability related to user-generated content.  
(c) A key concept of international trade which keeps cargo of export and import safe.  
(d) The law which governs the climate threshold required to maintain optimum temperature of the Earth.
11. It is a vaccine that does not expose individuals to the virus itself but introduces a piece of the genetic material that corresponds to a viral protein, which is found on the membrane of the virus called spike protein. It is in reference to which of the following:
- (a) Live-attenuated vaccines (b) Toxoid vaccines  
(c) Inactivated vaccines (d) mRNA vaccines

- 12.** With reference to the 'CAR-T Cell Therapy', consider the following statements?
1. It is a type of treatment that involves altering the genes inside T-cells to help them attack cancer.
  2. It involves the use of antibiotics and radiation therapy to destroy cancer cells.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
- 13.** With reference to the 'Quantum Engine', consider the following statements:
1. It runs on the energy difference associated with the statistical properties of quantum matter, instead of heat.
  2. It can convert thermal energy into mechanical work.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
- 14.** Terms like 'Mistral' and 'Llama' sometimes appeared in the news, are related to:
- (a) Geographical Events in Europe (b) Fauna of West Asia  
(c) Large Language Models (d) Small Satellites in Low Earth Orbits
- 15.** The term 'Taxol (Paclitaxel)' sometimes mentioned in the news, in the context of:
- (a) Malaria (b) Cancer  
(c) Tuberculosis (d) Covid-19
- 16.** Terms like 'Permeability Glycoprotein (P-gp)' and 'ABCB1', sometimes appeared in the news, in context of:
- (a) Cancer (b) Tuberculosis  
(c) Diabetes (d) Alzheimer
- 17.** Which of the following statements are correct about Lymphatic Filariasis (LF)?
1. It is an incurable mosquito-borne infectious disease.
  2. It is transmitted by the culex mosquitoes.
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
- 18.** With reference to Dengue, which of the following statements is/are correct?
1. Dengue is a viral infection caused by an RNA virus of the Flaviviridae family.
  2. The virus is transmitted to humans through the bites of infected female Aedes Aegypti mosquitoes.
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
- 19.** With reference to the Cervical Cancer, consider the following statements:
1. Almost all cervical cancer cases are linked to infection with high-risk human papillomaviruses (HPV).
  2. It is one of the least successfully treatable forms of cancer.

Which of the statements given above is/are correct?

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

**20.** With reference to the Gaganyaan mission, consider the following statements:

1. It aims to demonstrate the capability to launch human beings to low earth orbit and bring them back safely to earth by landing.
2. The mission will be ISRO's first human spaceflight missions.
3. Russia and the US are the only countries to conduct human spaceflights.

Which of the statements given above are correct?

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

**21.** Which of the following statements are correct about Genome?

1. The genome is the entire set of RNA instructions found in a cell.
2. A genome contains all the information needed for an individual to develop and function.
3. Genomes are different for different organisms.

Select the correct answer using the code given below:

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

**22.** Consider the following statements:

1. Indian Computer Emergency Response Team (CERT-In) is the nodal agency for taking all measures to protect the critical information infrastructure of India.
2. Joint Cyber Coordination Teams are constituted under National Critical Information Infrastructure Protection Centre (NCIIPC).

Which of the statements given above is/are correct?

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

**23.** With reference to Haemoglobin, consider the following statements:

1. It is a type of protein in red blood cells that distributes the oxygen to muscles and tissues throughout the body.
2. Due to the binding of oxygen with Haemoglobin it appears to be red in color.
3. Thalassemia are inherited blood disorders characterized by increased haemoglobin production.

How many statements given above is/are correct?

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



## EXPLANATIONS

1. (c)

**Tuberculosis (TB)**

- **About:** TB is caused by a bacterium called *Mycobacterium tuberculosis*. In humans, TB most commonly affects the lungs (pulmonary TB), but it can also affect other organs (extra-pulmonary TB).
- **Treatment:** Rifampin, isoniazid, pyrazinamide, and ethambutol are first-line antitubercular medications, which are FDA-approved and indicated for the treatment of Mycobacterium tuberculosis infections.
  - TB is preventable and curable and around 85% of people who develop the disease can be successfully treated with a 4/6-month drug regimen.

2. (a)

**Statement 1 is correct and statement 2 is not correct.**

- **Malaria** is a life-threatening disease spread to humans by some types of mosquitoes. It is mostly found in tropical countries.
- **Transmission:** It is caused by **plasmodium protozoa**. The plasmodium parasites spread through the bites of infected female Anopheles mosquitoes. Blood transfusion and contaminated needles may also transmit malaria.
- The **R21/Matrix-M malaria vaccine** has been recommended for use by the World Health Organisation (WHO) after meeting required safety, quality and effectiveness standards.
- **Types of parasites:** There are 5 Plasmodium parasite species that cause malaria in humans and 2 of these species – **P. falciparum** and **P. vivax** – pose the greatest threat. The other malaria species which can infect humans are **P. malariae**, **P. ovale** and **P. knowlesi**.
- The vaccine has been developed by the **University of Oxford and the Serum Institute of India**, leveraging Novavax's adjuvant technology.
- The R21 vaccine is the second malaria vaccine recommended by WHO, following the **RTS,S/AS01 vaccine**, which received a WHO recommendation in **2021**.

3. (b)

**Statements 1 and 2 are not correct.**

- Cholera is a **water-borne disease** caused by two strains called **O1 and O139 of the bacteria Vibrio cholerae**.
  - Of these, O1 is responsible for almost all outbreaks; outbreaks of O139 are rare and none have been recorded outside Asia.

According to the United Nations health body, "Cholera transmission is closely linked to inadequate access to clean water and sanitation facilities."

4. (d)

**Uterus transplant**

- Unlike heart or liver transplants, uterus transplants aren't life-saving transplants. Instead, they are more like limb or skin transplants – which improve the quality of individuals' lives.
- Uterus transplants can help women who lack a uterus fulfill their reproductive needs. **Hence statement (a) is correct.**

- **Cryopreservation:** The procedure doesn't connect the uterus to the **fallopian tubes** (which ensure the ovum from the ovaries moves to the uterus).
  - So the individual can't become pregnant through natural means. **Hence statement (b) is correct.**
  - Instead, **doctors remove the recipient's ova**, create embryos using **in vitro fertilisation (IVF)**, and **freeze them embryos** (a.k.a. **cryopreservation**).
  - Once the newly transplanted uterus is '**ready**', the doctors implant the embryos in the uterus.
- **Global position:** India is one of a few countries to have had a successful uterine transplant; others include Turkey, Sweden, and the U.S. **Hence statement (c) is correct.**

5. (a)

Turmeric is a **perennial flowering plant** in the **ginger family Zingiberaceae**. It is native to the **Indian subcontinent and Southeast Asia**. **Hence, Statement 1 is not correct.**

- **Statement 2 is not correct:** India is the **largest producer, consumer and exporter of turmeric** in the world. In the year 2022-23, an **area of 3.24 lakh hectares** was under turmeric cultivation in India with a production of **11.61 lakh tonnes [over 75% of global turmeric production]**. **India has 62% share of world trade in turmeric.**
- **Statement 3 is correct:** The Centre recently notified the constitution of the **National Turmeric Board** for the **development and growth of turmeric and turmeric products** in the country.

6. (c)

**All three statements are correct:** The 2023 Nobel Prize in Chemistry has been awarded to **Moungi G. Bawendi, Louis E. Brus and Alexei I. Ekimov** for the **discovery and synthesis of quantum dots**.

**What are Quantum Dots?**

- **Statement 1 is correct:** Quantum dots, often referred to as "artificial atoms," are **semiconductor nanocrystals that exhibit remarkable quantum mechanical properties**.
- Unlike traditional materials, the size of quantum dots plays a pivotal role in determining their electronic and optical characteristics.
- This size-dependent behaviour is a direct result of quantum confinement, a phenomenon that occurs at the nanoscale.
- **Statement 2 is correct:** **Quantum dots are typically composed of elements from the periodic table's groups II-VI or III-V, such as cadmium selenide (CdSe) or indium arsenide (InAs).**
- Quantum dots have revolutionised the world of **sensors and detection**.
- Their sensitivity to changes in the surrounding environment, such as temperature or pH, has led to the development of **highly accurate and responsive sensors**. **Hence, Statement 3 is correct.**

These sensors find applications in **environmental monitoring, medical diagnostics, and industrial quality control, among others**.

7. (b)

**Project Kuiper**

- Project Kuiper is a planned broadband internet service from low-Earth orbiting satellites.
- It is a subsidiary of Amazon that was established in 2019. **Hence option (b) is incorrect.**
- Amazon has deployed the first **pair of prototype satellites** for its global internet service into space.
- It was launched along with the **United Launch Alliance's Atlas V rocket**.

- This marks the big tech company's first step before launching thousands of such satellites into space to enable **Project Kuiper** — the **rival to SpaceX's Starlink**.

49% equity participation, through an open invitation on a portal namely **Seniorcare Ageing Growth Engine (SAGE)**.

8. (c)

**BlueWalker 3 (BW3) satellite**

- **About:** The BlueWalker 3 is a **prototype satellite**, part of a **satellite constellation** planned by its owner **AST SpaceMobile**. **Hence statement 1 is correct.**
  - It was **launched** to orbit on **September 10, 2022**.
  - It is the largest-ever **commercial communications** array deployed in low-Earth orbit and is designed to communicate directly with cellular devices via 3GPP standard frequencies at 5G speeds. **Hence statement 3 is correct and 2 is incorrect.**
- **BW3: the brightest object:** Observations of the BlueWalker 3 showed it was one of the brightest objects in the night sky, outshining all but the brightest stars, the researchers said.

9. (a)

**Option (a) is correct: Cloud seeding** is a kind of a weather modification technology to create artificial rainfall. It works only when there are enough pre-existing clouds in the atmosphere.

- Rain happens when moisture in the air reaches levels at which it can no longer be held, and cloud seeding aims to facilitate and accelerate that process by making available chemical '**nuclei**' around which condensation can take place.
- These 'seeds' of rain can be the **iodides of silver or potassium, dry ice (solid carbon dioxide), or liquid propane**. The seeds can be delivered by plane or by spraying from the ground.

10. (b)

'Safe harbour' is the principle that says, '**intermediaries**' on the internet are not responsible for what third parties post on their website.

- This is the principle that **allows social media platforms to avoid liability for posts made by users**.
- Safe harbour has been reined in in recent years by regulations like the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**, which require platforms to take down posts when ordered to do so by the government, or when required by law.

11. (d)

**What are mRNA vaccines?**

- **mRNA, stands for messenger RNA**, is a form of nucleic acid which carries genetic information. The vaccine attempts to activate the immune system to produce antibodies that help counter an infection from a live virus.
- **Working:** The mRNA vaccine does not expose individuals to the virus itself. It introduces a piece of the genetic material that corresponds to a viral protein. This is usually a protein found on the membrane of the virus called spike protein.

12. (a)

**Statement 1 is correct:**

- Chimeric Antigen Receptor (CAR)-T Cell Therapy is a type of treatment that **involves altering the genes inside T cells to help them attack cancer**.
- It is a type of treatment in which a patient's T cells are genetically engineered in the laboratory so they will bind to specific proteins (antigens) on cancer cells and kill them.

**Statement 2 is not correct:**

- CAR T cell therapy is a type of cancer immunotherapy treatment that **uses immune cells** called T cells that are genetically altered in a lab to enable them in locating and destroying cancer cells more effectively.

**13. (a)**

**Statement 1 is correct:**

- Physicists have come up with a **way to convert the energy difference between two quantum states** of a group of atoms into reality.
- The basic principle is that, at a given temperature, **a system of fermions will have more energy than a system of bosons.**

**Statement 2 is not correct:**

- **Classical engines, not the quantum engines, convert heat into work.** The internal combustion engine in a car uses the heat released by the combustion of petrol or diesel to push a piston. Overall the engine has four steps: the fuel is compressed, ignition causes the fuel-air mix to expand and push the piston out, the mix cools and stops expanding, and the piston is brought back to the first step.

**14. (c)**

**Mistral, a French tech startup and Artificial Intelligence (AI)** company was set up by former Meta (META.O) and Google AI researchers.

- It raised a record 105 million euros (\$113.5 million) in its seed funding round, just after launch, and has claimed first place for the **most powerful large language model (LLM)** in the nifty size LLM space.
- It has released its model on GitHub under the Apache 2.0 licence, free and for everyone, unlike OpenAI's GPT models, and claimed its LLM is more capable than **Llama 2, an open-source language model of Meta.**

**15. (b)**

**Taxol (Paclitaxel)** is a type of **chemotherapy**, used off-label to treat gastroesophageal, endometrial, cervical, prostate, and head and neck cancers, in addition to sarcoma, lymphoma, and leukaemia.

- Researchers found that a **cell's sensitivity to Taxol**, including its ability to resist Taxol's anti-cancer effects, **related to the location of the ATP Binding Cassette Subfamily B Member 1 (ABCB1) gene inside the cell's nucleus.**

**16. (a)**

A toxin-remover protein, **Permeability Glycoprotein (P-gp)** became resistant to the anti-cancer drug Taxol.

- The P-gp efflux pump made from **RNA was responsible for Taxol-resistance.**
- **Only the RNA, and not the DNA,** enters the cytoplasm where it 'instructs' the cellular machinery on the way to link different amino acids to form the protein encoded by a gene.
- **Cell's sensitivity to Taxol**, including its ability to resist Taxol's anti-cancer effects, **related to the location of the ATP Binding Cassette Subfamily B Member 1 (ABCB1) gene inside the cell's nucleus.**

**17. (b)**

**Lymphatic Filariasis (LF):** LF, also known as **elephantiasis**, is a **preventable mosquito-borne infectious disease.** Hence, **Statement 1 is not correct.**

- **Vector:** Culex mosquitoes. Hence, **Statement 2 is correct.**

- It occurs when one of the filarial (arthropod-borne) parasites — ***Wuchereria bancrofti*, *Brugia malayi* and *B. timori*** are transmitted to humans through mosquito bites.
  - The filariae are thread-like **parasitic nematodes (roundworms)** that are transmitted by arthropod vectors.

**Treatment:** The most cost-effective method for treating all affected residents of LF-endemic areas and stopping future transmission is **mass drug administration (MDA)**.

- WHO recommends the **triple therapy combination of ivermectin (I), diethylcarbamazine (D) and albendazole (A)**, for MDA against LF.
- Multiple rounds of MDA, **covering over 65 per cent of the population**, are required.

18. (c)

**Both the Statements are correct.**

**What is Dengue?**

- Dengue is a viral infection caused by the **dengue virus (DENV)**, transmitted to humans through the bite of infected mosquitoes. It is more common in tropical and subtropical climates.
- **DENV is an RNA virus** of the **Flaviviridae family** with four serotypes (DENV-1 to 4). Infection with one serotype provides lifelong immunity to that type, but subsequent infections with different serotypes can lead to severe, life-threatening forms of the disease.

**Transmission**

- **Vector:** The virus is transmitted to humans through the bites of infected female mosquitoes, primarily the **Aedes Aegypti mosquito**.
- **Human-to-mosquito transmission:** After feeding on a DENV-infected person, the virus replicates in the mosquito midgut before disseminating to secondary tissues, including the salivary glands.

19. (a)

**Statement 1 is correct:** Cervical cancer is cancer that starts in the **cells of the cervix**.

- The cervix is the lower, narrow end of the uterus (womb). The cervix connects the uterus to the vagina (birth canal).
- Almost all cervical cancer cases (99%) are linked to infection with **high-risk human papillomaviruses (HPV)**, an extremely common virus transmitted through sexual contact.

**Statement 2 is not correct:** **Prevention:** Effective **primary (HPV vaccination)** and secondary prevention approaches (screening for, and treating precancerous lesions) will prevent most cervical cancer cases.

- **Treatment:** When diagnosed, **cervical cancer is one of the most successfully treatable forms of cancer**, as long as it is detected early and managed effectively. Cancers diagnosed in late stages can also be controlled with appropriate treatment and palliative care.

20. (a)

**Statement 1 and 2 are correct: Gaganyaan mission**

- **The mission aims** to demonstrate the capability to **launch human beings** (three crew members) to **low earth orbit** and bring them back safely to earth by landing.
- **Launch vehicle:** The Launch Vehicle Mark-3 (LVM3) is the launch vehicle for the Gaganyaan mission. All systems in the LVM3 launch vehicle are reconfigured to meet human rating requirements and named Human Rated LVM3 (HLVM3).
- **Gaganyaan mission** will be the **first of ISRO's human spaceflight missions**.

**Statement 3 is not correct:** The **US, Russia and China** are the only three countries to have conducted human spaceflights yet.

21. (b)

**Statement 1 is not correct:** The genome is the entire set of DNA instructions found in a cell.

- A genome contains all the information needed for an individual to develop and function.
- Genomes are different for different organisms. For example, the human genome has about 3.2 billion nucleotides, while Bats have around 2 billion bases.

22. (d)

**Statement 1 is not correct: Critical Information Infrastructure:**

- The Information Technology Act of 2000 defines it as a 'computer resource, the incapacitation or destruction of which shall have debilitating impact on national security, economy, public health or safety'.
- The National Critical Information Infrastructure Protection Centre (NCIIPC) is the nodal agency for taking all measures to protect the nation's critical information infrastructure.
- It is mandated to guard CII from "unauthorised access, modification, use, disclosure, disruption, incapacitation or distraction".

**Statement 2 is not correct: Indian Cyber Crime Coordination Centre (I4C):** It aims to provide a framework and ecosystem for Law Enforcement Agencies (LEAs) to deal with cyber crimes in a comprehensive and coordinated manner.

- 'Joint Cyber Coordination Teams' are constituted under the I4C to address the issue of jurisdictional complexity, based upon cyber crime hotspots/areas, by on-boarding all the States/UTs to provide a robust coordination framework to the LEAs.

23. (a)

**Statement 1 is correct:** Hemoglobin is a type of protein in red blood cells that distributes the oxygen to muscles and tissues throughout the body.

- It also picks up carbon dioxide and returns it to lungs to exhale. This essential process helps prevent toxic levels of carbon dioxide.

**Statement 2 and 3 are not correct:** Iron is a key component of hemoglobin. Iron helps hemoglobin bind to oxygen so the hemoglobin can transport the oxygen to tissues. Iron is what makes blood red.

Haemoglobin disorders or haemoglobinopathies are a group of conditions affecting the molecule haemoglobin which is contained in the red blood cells.

- The thalassemias are inherited blood disorders characterized by decreased haemoglobin production.



# ENVIRONMENT & ECOLOGY

1. Punjab government recently announced to ban “PUSA-44” due to groundwater depletion. It is a variety of which of the following crops?
  - (a) Wheat
  - (b) Paddy
  - (c) Groundnut
  - (d) Maize
2. Consider the following statements regarding the ‘Global Stocktake’, that was recently in the news:
  1. It is established under Article 14 of the Paris Agreement.
  2. The Global Stocktake process is designed to assess the global response to the climate crisis every seven years.
  3. 2023 is the first Global Stocktake year since the Paris Agreement.Which of the statements given above is/are correct?
  - (a) 1 only
  - (b) 2 only
  - (c) 2 and 3 only
  - (d) 1 and 3 only
3. With reference to the Petro plants, consider the following statements:
  1. These plants require highly fertile land for their growth.
  2. These plants are alternative sources of liquid fuels.
  3. Jatropha curcas is a good example of a petro plant.Which of the statements given above are correct?
  - (a) 1 and 2 only
  - (b) 2 and 3 only
  - (c) 1 and 3 only
  - (d) 1, 2 and 3
4. Dakar Declaration, which was recently in the news, is primarily aimed towards which of the following?
  - (a) Role of women in achieving the “Life on Land” (SDG15) goal.
  - (b) Role of least developed countries in achieving Climate Change goals.
  - (c) Addressing the issue of climate change and human mobility in Africa.
  - (d) Role of least developed countries in achieving Sustainable Development Goals (SDGs).
5. Which of the following species are categorized as ‘amphibians’?
  1. Snakes
  2. Salamanders
  3. Caecilians
  4. TurtlesSelect the correct code among the following:
  - (a) 1 and 4 only
  - (b) 2 and 3 only
  - (c) 4 only
  - (d) 1 and 3 only

6. Consider the following statements with reference to Asiatic Wild Dog (Dhole):
1. It is the only endangered wild pack-living canid in the tropical Indian forests.
  2. It is only found in India and Nepal.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
7. Recently discovered *Badis limaakumi*, belong to which of the following species?
- (a) Fish (b) Pig  
(c) Snake (d) Apes
8. With reference to the Ozone layer, which of the following statements is/are correct?
1. The ozone layer is a trace gas in the Mesosphere found between 15 to 35 kilometers above Earth.
  2. In 1987 the Montreal Protocol was adopted to protect the ozone layer.
- Select the correct answer using the code given below:
- (a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2
9. Which of the following are the advantages of Nuclear Power energy?
1. Demands a lesser quantity of fuel than coal or natural gas based power plants.
  2. Provides firm & dispatchable power whereas wind and solar energy are intermittent or variable sources.
  3. Saves considerable amount of carbon dioxide emissions over conventional thermal power plants.
- Select the correct answer using the code given below:
- (a) 1 and 2 only (b) 2 and 3 only  
(c) 3 only (d) 1, 2 and 3
10. "It is one of the oldest wildlife conservancy reserves in India, first notified in 1905. It was recognized as a UNESCO World Heritage Site in 1985. It is the abode of more than 70% of One Horned Rhinoceros in the world."
- Which of the following National Parks is described above?
- (a) Gorumara National Park (b) Kaziranga National Park  
(c) Orang National Park (d) Manas National Park
11. With reference to the Wildlife (Protection) Amendment Act 2022, consider the following statements:
1. It mentioned the 'protection of wild animals, birds and plants' in its preamble.
  2. It has a total of four schedules for varying degrees of protection.
  3. Schedule III is for scheduled specimens listed in the Appendices under CITES.
  4. Schedule IV is protecting the plant species.
- How many of the statements given above are correct?
- (a) Only one (b) Only two  
(c) Only three (d) All four



**12.** Consider the following pairs with reference to Sustainable Development Goals (SDGs):

SDGs	Focus
1. Goal 6	Gender equality
2. Goal 10	Zero Hunger
3. Goal 13	Climate Action
4. Goal 17	Quality Education

How many of the above pairs are correctly matched?

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

**13.** With reference to the Kunming-Montreal Global Biodiversity Framework (KMGBF), which of the following statements is/are correct?

- The Framework was adopted during the Paris Climate Conference in 2015.
- The agreement is binding on its members.

Select the correct answer using the code given below:

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

**14.** With reference to the Sea Cucumbers, consider the following statements:

- They are benthic whereas their larvae are planktonic.
- They are herbivores and feed only on the plants.
- They are not consumed by humans.

How many statements given above are correct?

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

**15.** The Global Solar Facility (GSF), recently seen in the news, stands for which of the following?

- It is a payment guarantee mechanism under the International Solar Alliance (ISA) framework to attract investments into the solar energy sector.
- It is a digital platform to address queries regarding solar energy technologies.
- It is a member-driven platform for the deployment of solar energy technologies across the African continent.
- It is a joint effort by India and France to mobilize efforts against climate change through deployment of solar energy solutions.

**16.** Lemru and Badalkhol are elephant reserves, located in which of the following Indian states?

- (a) Madhya Pradesh (b) Karnataka  
(c) Odisha (d) Chhattisgarh

**17.** Consider the following statement with respect to Antarctic krill

- They live exclusively in the Southern Ocean and have a very wide distribution over a range of habitats.
- The IUCN Red List of Threatened species classifies them as Vulnerable species .

Which of the following statements given above is/are correct?

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

## EXPLANATIONS

1. (b)

PUSA-44 is a **Paddy Variety** developed in 1993 by the Delhi-based **Indian Council of Agricultural Research (ICAR)**.

- By the end of 2010s, it had gained widespread popularity among farmers across the Punjab, covering approximately **70 to 80% of the area under paddy cultivation**.
- But by 2018, the Punjab government **reduced the area under PUSA-44 to 18 percent** of the total area under paddy.
  - The reason being, PUSA-44 is a **long-duration variety**, taking around 160 days to mature. This is around 35 to 40 days more than other varieties, **requiring 5-6 extra cycles of irrigation, leading to groundwater depletion**.

2. (d)

**Global Stocktake**

- **Established under Article 14 of the Paris Agreement**, the Global Stocktake is designed “to assess the collective progress towards achieving the purpose of [the Paris] Agreement and its long-term goals. **Hence, statement 1 is correct.**
- The Paris Agreement’s Global Stocktake process is designed to assess the global response to the climate crisis **every five years. Hence statement 2 is not correct.**
- It evaluates the world’s progress on slashing greenhouse gas emissions, building resilience to climate impacts, and securing finance and support to address the climate crisis.
- 2023 is the **first Global Stocktake year since the Paris Agreement** was signed in 2015. **Hence statement 3 is correct.**

3. (b)

**Statement 1 is not correct and 2 is correct:** Recent researches suggest that hydrocarbon-producing plants can become alternative energy sources, which can be inexhaustible and ideal for liquid fuel. These plants called petro plants/petro crops can be grown on land which is unfit for agriculture and not covered with forests.

**Statement 3 is correct.** *Jatropha Curcas* is an important petro plant.

4. (b)

**Dakar Declaration:**

- Ministers from the world’s 46 least developed countries (LDC) recently issued a joint Dakar Declaration on Climate Change 2023.
- The joint Dakar Declaration on Climate Change 2023 **outlines the expectations and priorities** of least developed countries for 28th Conference of Parties (COP28) to the United Nations Framework Convention on Climate Change.
- **The Dakar Declaration called for:**
  - Urgent global emissions reductions,
  - Increased climate finance,
  - A strong outcome operationalising the new Loss and Damage Fund and
  - An ambitious Global Stocktake to close the gaps in global climate action.

5. (b)

**Option b is correct:** Amphibians are **small vertebrates that need water, or a moist environment, to survive.**

- The species in this group include **frogs, toads, salamanders, caecilians and newts**. All can breathe and absorb water through their very thin skin.
- **Snakes and Turtles are reptiles.**

6. (a)

**In News :** The activity of the Asiatic wild dog in Assam's Manas National Park showed the highest temporal overlap with the leopard.

**Statement 1 is correct : Asiatic Wild Dog (Dhole)** are large carnivores that resemble a small wolf or a domestic dog in size; however, unlike dogs they have a rust-red to brown coat and the ears are rounded with fur. In India, the species inhabits tropical dry and moist deciduous forest supporting an adequate prey base.

- It is the **only endangered wild pack-living canid in the tropical Indian forests.**

**Statement 2 is not correct: Distribution :** It has a **large distribution range south and central Asia and Russia.**

- In India, the species inhabits the southern part of the Indo-Gangetic plains, Eastern and Western Ghats and most parts of North-Eastern India
- It also occurs in some parts of Ladakh and Kashmir.
- IUCN Red list status : **Endangered**
- It is included in CITES – Appendix II

7. (a)

**In News:** Scientists have recently discovered a **new fish species** 'Badis limaakumi' from the Milak river, Nagaland.

**Badis limaakumi** has been named after Limaakum, assistant professor and head of the zoology department at Fazl Ali College, Nagaland.

- It has a distinct **opercular blotch** at the base of its **opercular spine** (a bone series that serves as a facial support structure and a protective covering for the gills).
- It belongs to the family of **Badidae**, a small freshwater fish found in streams with slow or moderate water flow.
- It is also known as **chameleon fish** for their ability to change colour.

8. (b)

**Statement 1 is not correct and 2 is correct.**

**What is an Ozone Layer?**

- **The ozone layer** is a trace gas in the **stratosphere**, one of the **four layers of the Earth's atmosphere**. It is found between **15 to 35 kilometers** above Earth.
- **Ozone creation:** Ozone is composed of **three atoms of Oxygen**. The production of ozone in the stratosphere results primarily from the breaking of the chemical bonds within oxygen molecules (O<sub>2</sub>) by high-energy solar photons. This process, called **photodissociation**, results in the release of single oxygen atoms, which later join with intact oxygen molecules to form ozone.
- **Significance:** It functions as a protective gas shield that absorbs ultraviolet radiation, protecting humans and ecosystems from dangerous amounts of UV radiation causing skin cancers.

### The Montreal Protocol

- **History:** The Montreal Protocol was adopted in **1987** to protect the ozone layer. The Protocol is to date one of the rare treaties to achieve universal ratification.
- **Objective:** The landmark multilateral environmental agreement regulates the production and consumption of nearly 100 man-made chemicals referred to as ozone depleting substances (ODS).
- **The substances controlled** by the treaty are listed in Annexes A (CFCs, halons), B (other fully halogenated CFCs, carbon tetrachloride, methyl chloroform), C (HCFCs), E (methyl bromide), and F (HFCs).

9. (d)

### Advantages of Nuclear Power

- **Efficient power supplier:** Nuclear power has **higher energy density** as it requires a lesser **quantity of fuel** than other sources of power like coal or natural gas based power plants. **Hence option 1 is correct.**
  - It is especially suitable for space missions which must not have bulky cargo, making it difficult for them to escape the earth's gravity.
- **Co-existence with other power sources:** A lot of countries claim that nuclear power would be **good to have in the mix** because it is firm, dispatchable power, while wind and solar are intermittent or variable. **Hence option 2 is correct.**
  - **Firm power** is the power that can be sent to the electric grid to be supplied whenever needed.
- **Advantage over coal-based thermal power plants:**
  - **Lower emissions:** India's nuclear power sector is saving 41 million tonnes of carbon dioxide emissions annually, compared to emissions that would have been generated by equivalent electricity generation from coal-based thermal power plants. **Hence option 3 is correct.**
  - **Ash Waste - significant polluter:** Looking at many of the power plants in India, they have huge ash ponds. In some cases, the size of the ash pond is bigger than the size of the plant. Ash also contains many heavy metals, which are detrimental to the water source.

10. (b)

### Kaziranga National Park

- **Location:** Golaghat, Karbi Anglong and Nagaon districts of the state of Assam.
- It is one of the **oldest wildlife conservancy reserves** of India, first notified in 1905 and constituted as a Reserved Forest in 1908.
- It was recognized as a **UNESCO World Heritage Site in 1985**. It is recognized as an **Important Bird Area by BirdLife International (Global partnership of NGOs)**.
- It was declared a **Wildlife Sanctuary in 1950** and notified as **Kaziranga National Park in 1974 under the Wildlife (Protection) Act, of 1972**.
- The Park is the abode of more than **70% of One Horned Rhinoceros** in the world.
  - **The Greater one-horned Rhino** is listed under **Schedule I of the Wildlife Protection Act, 1972**, and **vulnerable in the IUCN Red List**.
- Kaziranga also has the highest density of tigers in India.

## 11. (a)

**Statement 1 is not correct: Wildlife (Protection) Amendment Act 2022** changed the phrase 'protection of wild animals, birds and plants' by the '**conservation, protection and management of wildlife**' in the Preamble.

- **Statement 2 is correct:** The Wild Life (Protection) Act, 1972 had six schedules, but after the amendment, **it was reduced to only four schedules**, namely Schedule I, II, III, and IV.
- **Statement 3 is not correct: Schedule III** of Wildlife (Protection) Amendment Act 2022 is for protecting the Plant species.
- **Statement 4 is not correct: Schedule IV** of Wildlife (Protection) Amendment Act 2022 is for specimens listed in the Appendices under CITES (scheduled specimens).

## 12. (a)

**In News:** The SDG Summit took place in September 2023 under the auspices of the United Nations General Assembly, aimed to catalyze renewed efforts towards accelerating progress on the SDGs. **Sustainable Development Goals (SDGs)**

- The 17 SDGs and 169 targets are part of a transformative agenda - the 2030 Agenda for Sustainable Development adopted by 193 Member States at the UN General Assembly Summit in September 2015, and which came into effect on 1 January 2016.
- The 2030 Agenda for Sustainable Development, adopted by all **United Nations Member States in 2015**.
- They embarked on a journey to achieve the **2030 Agenda** to promote prosperity, address inequalities while protecting the environment.
- The 17 SDGs offer the most practical and effective pathway to tackle the causes of poverty, violent conflict, human rights abuses, climate change and environmental degradation.



## 13. (d)

**Both the Statements are not correct.**

**Kunming-Montreal Global Biodiversity Framework (KMGBF)**

- The Framework was adopted in **2022** at the **15th meeting** of the Conference of the Parties to the **Convention on Biological Diversity (CBD)**.
- **It aims** to halt and reverse biodiversity loss by **2030**. It features **23 targets** to be met by **2030** and **four global goals** to preserve biodiversity for current and future generations.
- The agreement is **not binding** on members.

## 14. (a)

**Statement 1 is correct:** Sea cucumbers are part of a larger animal group called **echinoderms**, which also contains starfish and sea urchins.

- **Habitat:** They are found in all marine environments throughout the world, from shallow to deep-sea environments.
- They are **benthic (found on seafloor)**, their larvae are **planktonic**, meaning they float in the ocean with the currents.

**Statement 2 and 3 are not correct: Diet:** They are **scavengers** that feed on small food items in the benthic zone (seafloor), as well as plankton floating in the water column.

- **Use:** They have been used as a **food source** and medicinal ingredient in Asian and Middle Eastern countries for centuries.

## 15. (a)

The Global Solar Facility (GSF) is a **payment guarantee mechanism under the ISA framework to attract investments into the solar energy sector**, in line with the ISA goal of unlocking \$1 trillion in solar energy investments by 2030.

- The **Global Solar Facility (GSF) was approved in the Fifth Session of the ISA Assembly**, in New Delhi, India in 2022 and later it was **announced at COP27 in Sharm-el-Sheikh on Nov 10, 2022**.
- **Mandate:** It is aimed to **help alleviate the constraints of contractual and financial uncertainty for solar energy**.
- The **GSF will have three funds**:
  - a payment guarantee fund,
  - an insurance fund to mitigate project risks and
  - an investment fund for technical assistance.

## 16. (d)

**Option d is correct: Lemru is one of two elephant reserves** (the other is Badalkhol Tamorpingla) and is part of the **Hasdeo Aranya forests** in Korba district of **Chhattisgarh**.

- It is planned **to prevent human-animal conflict** in the region, with elephants moving into Chhattisgarh from Odisha and Jharkhand.
- The reserve is part of **an elephant corridor** that connects **Lemru (Korba), Badalkhol (Jashpur), Tamorpingla (Surguja)**.

## 17. (a)

Antarctic krill in the Antarctic ecosystem are at risk due to declining sea ice.

**Antarctic krill** (*Euphausia suberba*)

**Statement 1 is correct :** Krill is a general term used to describe about 86 species of crustaceans found in open oceans. They belong to the group of crustaceans called **euphausiids**.

- **Antarctic krill** is one of 5 species of krill that lives in the Southern Ocean, south of the Antarctic convergence.
- Habitat includes open ocean areas as well as more coastal locations
  - live **exclusively in the Southern Ocean** and have a very wide distribution over a range of habitats.

**Statement 2 is not correct :** Listed as **Least Concern** (IUCN Red List of Threatened species )

- Krill fishery has been regulated by the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) since the 1980s.



# MISCELLANEOUS

1. 'Kongthong Village' recently seen in the news, is located in which of the following states?  
(a) Sikkim (b) Tripura  
(c) Meghalaya (d) Mizoram
2. Consider the following statements with reference to the Nobel Prize in Economic Sciences:
  1. In 2023, it was awarded to Narges Mohammadi for providing the first comprehensive account of women's earnings .
  2. It is awarded by the Royal Swedish Academy of Sciences.
  3. It was given first time to Ragnar Frisch and Jan Tinbergen in 1969.Which of the statements given above are correct?  
(a) 1 and 2 only (b) 2 and 3 only  
(c) 1 and 3 only (d) 1, 2 and 3
3. With reference to Asian Games, consider the following statements:
  1. The 19th edition of the Asian games was recently held in Seoul, South Korea.
  2. India holds the record for holding most of the editions of the game since its inception in 1951.
  3. The Olympic Council of Asia regulates the Asian Games.Select the correct answer using the code given below:  
(a) 1 and 2 only (b) 2 only  
(c) 1 and 3 only (d) 3 only
4. Which one of the following has published the '2023 State of the Climate Report: Entering Uncharted Territory'?  
(a) Nature Climate Change  
(b) BioScience Journal  
(c) Weather, Climate, and Society  
(d) International Journal of Environmental Research and Public Health
5. With reference to 'World Sight Day', Consider the following statements:
  1. This day is observed annually on the second Thursday of October.
  2. Its main focus is to raise awareness about eye health and to recognize the work done by thousands of ophthalmologists worldwide to fix vision impairment.Which of the statements given above is/are correct?  
(a) 1 only (b) 2 only  
(c) Both 1 and 2 (d) Neither 1 nor 2

6. With reference to the Global Hunger Index (GHI), consider the following statements?
1. It is based on the 4 indicators i.e, Undernourishment, Child stunting, Child wasting and Child mortality.
  2. GHI score is calculated on a 100-point scale reflecting the severity of hunger, where 0 is the worst score.

Which of the statements given above is/are correct?

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

7. Which one of the following statements about Palliative care is correct?

- (a) It is a care dedicated specially towards children.  
(b) It is a care that improves the quality of life of patients facing life-threatening illnesses.  
(c) It is an approach that ensures patients will not die at all.  
(d) It is one of the traditional medicine systems among AYUSH.

8. Which of the following sports have been officially included as additional sports on the programme for the Olympic Games Los Angeles 2028 (LA28).

1. Cricket 2. Flag football  
3. Squash 4. Baseball

Select the correct answer using the code given below:

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

9. With reference to the 'International Day of Eradication of Poverty', consider the following statements:

1. It is celebrated on October 17 by the United Nations every year.  
2. The theme for 2023 is "Decent Work and Social Protection: Putting Dignity in Practice for All".

Which of the statements given above is/are correct?

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

10. Consider the following statements, with reference to the 'Nuclear Briefcase':

1. It is named after Mount Cheget in the Caucasus Mountains in Russia, known as 'Cheget'.  
2. It serves as a secure communication tool connecting the president with his top military leaders and conveying orders for a nuclear strike.

Which of the statements given above is/are correct?

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

11. Which of the following Asian countries have ever hosted the Olympics?

1. China 2. South Korea  
3. Japan 4. India

Select the correct answer using the code given below:

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



12. Which of the following disciplines are included in the Shanti Swarup Bhatnagar (SSB) awards?

- |                          |                     |
|--------------------------|---------------------|
| 1. Mathematical Sciences | 2. Ocean Sciences   |
| 3. Chemical Sciences     | 4. Medical Sciences |
| 5. Planetary Sciences    |                     |

Select the correct answer using the code given below:

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

### EXPLANATIONS

1. (c)

Kongthong has been honoured with the prestigious 'Best Tourism Village (Bronze)' award at the National Tourism Awards 2023 by the Ministry of Tourism.

#### About Kongthong Village

- It is located in the East Khasi Hills district, around 65 kilometres from Meghalaya's capital city Shillong.
- It is popularly known as the **Whistling Village**.
- It has a unique oral tradition, **Jingrwai lawbei**, in which a song (Jingrwai) is sung in honour of the **root ancestress - the clan's first woman (Lawbei)**.
  - This song is composed by the mother following the birth of her child, during the first few weeks while she is regaining her health

2. (b)

**Statement 1 is not correct :** The Nobel Prize in Economics for 2023 was awarded to **Harvard University professor Claudia Goldin** for research that has advanced the understanding of the **gender gap in the labour market**.

- Claudia Goldin became the **third woman to receive the Nobel Prize** in economics
  - She provided the first comprehensive account of women's earnings and labour market participation through the centuries.

**Statements 2 and 3 are correct :** In 1968, Sveriges Riksbank (Sweden's central bank) established the Prize in Economic Sciences in Memory of Alfred Nobel, founder of the Nobel Prize.

- The first prize in economic sciences was awarded to **Ragnar Frisch and Jan Tinbergen in 1969**.
- It is officially known as The Sveriges Riksbank Prize in Economic Sciences
- The prize in economic sciences is awarded by the **Royal Swedish Academy of Sciences**, Stockholm, Sweden, according to the same principles as for the Nobel Prizes that have been awarded since 1901.
- It has been awarded 55 times to 93 laureates between 1969 and 2023.

3. (d)

**Asian Games: 2023 Edition** (Originally scheduled for 2022) was held in **Hangzhou, People's Republic of China**, from 23 September to 8 October, 2023.

- **Thailand** boasts an impressive record of hosting Asian games events for **four times**- 1966, 1970, 1978, and 1998, while **India hosted only two editions**: 1951 and 1982.
- The Asian Games, also known as **Asiad**, were regulated by the **Asian Games Federation** from 1951 to 1978 and since 1982, **Olympic Council of Asia** regulates the Asian Games. **Hence, statement 3 is correct.**

4. (b)

**BioScience Journal** published a report stating that **life on earth 'under siege'** as climate change pushes the **planet into 'uncharted territory'**.

- According to the '**2023 State of the Climate Report: Entering Uncharted Territory**,' published in the **BioScience journal** said that the Earth's 'vital signs' are worse than humans have ever seen, putting life on the planet in peril.

5. (c)

**Both the statements are Correct.**

**World Sight Day 2023**

- **Date:** This day is observed annually on the **second Thursday of October**. This year it is observed on **October 12**.
- **Theme:** The theme for 2023 is '**LOVE YOUR EYES AT WORK**'

**About the World Sight Day**

- Also known as '**World Eye Day**', and '**World Vision Day**'.
- It is an international day of awareness to focus on and encourage everyone to think about the importance of their eye health.
- It is globally observed to raise awareness about eye health and to recognize the work done by thousands of ophthalmologists worldwide to fix vision impairment.
- According to **WHO**, globally there are approximately **1 billion people** who have near or distance vision impairment.
- **Background:** It is coordinated by the **International Agency for the Prevention of Blindness (IAPB)**.
  - The day began to be officially observed as an IAPB event in the **year 2000** and has been marked in several different ways in nations across the world each year since then.

6. (a)

**Statement 1 is correct:** India ranks **111 out of a total of 125 countries** in the **Global Hunger Index (GHI) 2023**.

- GHI is a tool for **comprehensively measuring and tracking hunger** at global, regional, and national levels. GHI scores are based on the **values of four component indicators**:
  - **Undernourishment:** the share of the population with insufficient caloric intake.
  - **Child stunting:** the share of children under age five who have low height for their age, reflecting chronic undernutrition.
  - **Child wasting:** the share of children under age five who have low weight for their height, reflecting acute undernutrition.
  - **Child mortality:** the share of children who die before their fifth birthday, partly reflecting the fatal mix of inadequate nutrition and unhealthy environments.

**Statement 2 is not correct:** Based on the values of the four indicators, a GHI score is calculated on a **100-point scale** reflecting the **severity of hunger**, where **0 is the best possible score** (no hunger) and **100 is the worst**.

7. (b)

**Palliative care:**

- Palliative care is an approach that **improves the quality of life of patients** and their families who are facing problems associated with **life-threatening illness** like cancers, end-stage kidney disease and debilitating brain disorders.

- It prevents and relieves suffering through the early identification, correct assessment and treatment of pain and other problems, whether physical or psychosocial.
- Addressing suffering involves **taking care of issues beyond physical symptoms**. Palliative care uses a **team approach** to support patients and their caregivers.
  - This includes **addressing practical needs and providing bereavement counselling**. It offers a support system to help patients live as actively as possible until death.

8. (d)

The International Olympic Committee (IOC) Session has approved the Los Angeles 2028 Olympics organising committee's proposal for the inclusion of 5 additional sports in the sporting event.

- **Baseball/softball, cricket, flag football, lacrosse and squash** have been officially included as additional sports on the programme for the **Olympic Games Los Angeles 2028**.

9. (c)

**Both statements are correct.**

**International Day for the Eradication of Poverty**

- It is celebrated annually on **October 17** by the **United Nations**.
- **Aim:** To raise awareness about the **struggles of people living in poverty**.
- **Theme for 2023: "Decent Work and Social Protection: Putting Dignity in Practice for All"** which aims for universal access to decent work and social protection as a way to uphold human dignity for all people.

10. (c)

**Both the statements are correct**

**About Nuclear Briefcase:**

- Also known as the '**Cheget**', named after **Mount Cheget in the Caucasus Mountains in Russia**. It plays a vital role in **ordering a nuclear strike by Russia**.
- The briefcase serves as a **secure communication tool** connecting the president with his top military leaders and conveying orders for a nuclear strike.
- In the "**command**" section, there are **two buttons**:
  - **White for launch** and **Red for Cancel**, activated with a special flashcard (Zvezda).
- The Briefcase links the president to the military through "**Kazbek**", a secret network connecting to "**Kavkaz**."
- The **President, Defence Minister, and Chief of General staff** have a briefcase each and they are supposed to coordinate in case of a potential order to strike.

11. (b)

Prime Minister Narendra Modi publicly declared **India's intention to host the Olympic Games**, preferably in 2036.

- He also mentioned India's ambition to host the **Youth Olympics in 2029** although the quadrennial event is currently scheduled for 2030.
- Only three Asian countries have ever hosted the Olympics — **China, South Korea and Japan**, with Japan hosting the games twice in 1964 and 2020.
- It is the members of the International Olympic Committee (IOC), meeting at their Session, who choose the host.
  - Electing the host for the Olympic Games is one of the powers of the Session.
  - The host city is elected by a majority of the votes cast by secret ballot.

Each active member has one vote.

- The IOC's adoption of Olympic Agenda 2020 in late 2014 brought an entirely new philosophy to the selection of Olympic host cities.
  - It aims to reduce costs and adopt a flexible Games model that adapts to a Candidate City's unique context.
- It placed emphasis on three main aspects — **flexibility, sustainability and cost-effectiveness** — with the motto being 'The Games adapt to the region, the region does not adapt to the Games'.
- There is now a two-stage process — a **continuous dialogue** and a **targeted dialogue** — without any fixed deadlines, to assess, discuss and guide potential hosts.

## 12. (d)

### About Shanti Swarup Bhatnagar (SSB) awards

- The award is named after the founder Director of the Council of Scientific & Industrial Research (CSIR) India, the late Dr (Sir) Shanti Swarup Bhatnagar and is known as the '**Shanti Swarup Bhatnagar (SSB) Prize** for Science and Technology'.
- The Prize is given each year for outstanding contributions to science and technology.
- **Nature of the Prize:** SSB Prizes, each of the value of Rs 5,00,000 (Rupees five lakh only), are awarded annually for notable and outstanding research, applied or fundamental, in the following disciplines:
  - Biological Sciences,
  - Chemical Sciences,
  - Earth, Atmosphere, Ocean and Planetary Sciences,
  - Engineering Sciences,
  - Mathematical Sciences,
  - Medical Sciences and
  - Physical Sciences.
- Any citizen of India engaged in research in any field of science and technology up to the age of 45 years as reckoned on 31st December of the year preceding the year of the Prize.
  - Overseas citizens of India (OCI) and Persons of Indian Origin (PIO) working in India are also eligible.

