

# DAILY MCQs COMPILATION

*with*

# EXPLANATIONS

---

April 2024

**NEXT IAS**



# Table of Contents

---

❖	History & Culture	3
❖	Economy	14
❖	Indian Polity & Constitution	32
❖	Geography	45
❖	Government Schemes/ Initiatives	63
❖	Defense / Internal Security	66
❖	International Relations	70
❖	Science and Technology	79
❖	Environment & Ecology	99
❖	Miscellaneous	113



## History, Art & Culture

1. With reference to Ellora Caves, which of the following statements is/are correct?
  1. The site includes 34 caves, carved out of solid rock.
  2. The caves are a remarkable fusion of Buddhist, Hindu, and Jain monuments.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 Varaha Cave Temple, which of the following statements is/are correct?
  1. It is a rock-cut cave temple located at Mamallapuram, Tamil Nadu.
  2. It was made by the Pallava rulers in the 7th century CE.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. Who among the following was the author of 'Tirukkural', a collection of couplets on matters like ethics, politics, economics and love?
  - (a) Subramania Bharati
  - (b) Ramanujachara
  - (c) Thiruvalluvar
  - (d) Shankaracharya
4. Consider the following pairs:

<b>Handloom</b>	<b>State</b>
1. Phulkari	Punjab
2. Daccai	Assam
3. Brocade	Rajasthan
4. Chanderi	Madhya Pradesh

How many pairs given above are correctly matched?
  - (a) Only one pair
  - (b) Only two pairs
  - (c) Only three pairs
  - (d) All four pairs
5. Recently Centenary of the Vaikom Satyagraha was observed, it is related to which of the following states?
  - (a) Assam
  - (b) Maharashtra
  - (c) Kerala
  - (d) West Bengal

6. Bohag Bihu, also known as Rongali Bihu, is a major festival celebrated in:
- Punjab
  - Tamil Nadu
  - Assam
  - Kerala
7. With reference to the Particularly Vulnerable Tribal Groups (PVTGs), consider the following statements:
- In 1973, the Dhebar Commission set up a separate category for Primitive Tribal Groups (PTGs).
  - These groups have primitive traits, geographical isolation, low literacy, zero to negative population growth rate and backwardness.
  - Madhya Pradesh has the largest population of PVTGs.
- How many of the statements given above are correct?
- Only one
  - Only two
  - All three
  - None
8. Recently certain restrictions were imposed on visitors arriving at Ahobilam temple in the wake of the intense heat wave that can impact the movement of wild animals.
- In context of the above statement, Ahobilam temple is situated in which of the following states?
- Mizoram
  - Uttarakhand
  - Andhra Pradesh
  - Tamil Nadu
9. Consider the following pairs:
- | Harappan Site  | Present Day |
|----------------|-------------|
| 1. Lothal      | Gujarat     |
| 2. Rakhigarhi  | Rajasthan   |
| 3. Ganweriwala | Pakistan    |
| 4. Kalibangan  | Haryana     |
- How many of the above pairs are correctly matched?
- Only one pair
  - Only two pairs
  - Only three pairs
  - All four pairs
10. With reference to Harappan Sites, Consider the following pairs :
- | Harappan Sites    | Rivers  |
|-------------------|---------|
| 1. Mohenjo-Daro : | Indus   |
| 2. Lothal :       | Bhogava |
| 3. Harappa :      | Ravi    |
- How many of the above pairs are correctly matched?
- Only one pair
  - Only two pairs
  - All three pairs
  - None of the pairs

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

1. It is also known as an Iron-age civilization.
2. Rakhigarhi, is the largest Harappan site of the Indian subcontinent.

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

1. Rakhigarhi, is the largest Harappan site of the Indian subcontinent.
2. It is located in the Ghaggar-Hakra river plain, in Rajasthan.

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

13. With reference to the Satpula Dam, consider the following statements:

1. The Dam was built by Mohammad Bin Tughlaq.
2. It was built using Delhi quartz — a stone found in the Aravallis.

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

1. It is an important site of Jainism located in Karnataka.
2. Recently a coin hoard belonging to the Ikshvaku period was discovered at the site.

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. Consider the following pairs:

<i><b>Festivals</b></i>	<i><b>States in India</b></i>
1. Puthandu	Tamil Nadu
2. Vishu	Assam
3. Pana Sankranti	Kerala
4. Poila Boishakh	West Bengal

How many pairs given above are correctly matched?

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

16. With reference to the Vijayanagara Empire, which of the following statements is/are correct?

1. It was established by Harihara I and Bukka Raya I of the Sangama dynasty.
2. The empire declined after the Battle of Talikota in 1565.

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

17. The term “Sulthan Bathery”, recently seen in the news, belongs to which of the following states?

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

18. He played a significant role in the formation of the Reserve Bank of India. He founded the Bahishkrit Hitkarini Sabha (Society for Welfare of the Ostracized) and led social movements such as Mahad Satyagraha in 1927. He published a book titled “Who were Shudras?” In 1990, the Bharat Ratna, India’s highest civilian award, was posthumously conferred upon him.

Which among the following personalities is described above?

- (a) Mahatma Gandhi
- (b) Dadabhai Naoroji
- (c) Sardar Vallabhbhai Patel
- (d) Dr. B.R. Ambedkar

19. The ‘Suriyanar Kovil Temple’ sometime appeared in the news, is located in:

- (a) Karnataka
- (b) Tamil Nadu
- (c) Madhya Pradesh
- (d) Maharashtra

20. With reference to the Indian history, the term ‘Kevaljnan’ was related to:

- (a) Buddhism
- (b) Vaishnavism
- (c) Shaivism
- (d) Jainism

21. Consider the following statements:

1. Jainism originated as a reform movement within Hinduism, rejecting the caste system.
2. Jainism emphasizes the importance of non-violence (ahimsa) to all living beings.

Which of the above given statements is/are correct?

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

22. With reference to the Panhala Fort , which of the following statements is/are correct?

1. It was built by Chhatrapati Shivaji in the 16th Century.
2. In 1954, the Fort was declared as a Monument of National Importance.

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
23. With reference to the Padma Awards, consider the following statements:
1. The awards are conferred on the recommendations made by the Padma Awards Committee, which is headed by the Prime Minister.
  2. It was instituted in 1954 and seeks to recognize achievements in all disciplines where an element of public service is involved.
- 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
24. With reference to the *Indian Historical Records Commission*, consider the following statements:
1. It advises the Government of India on all issues connected with the management of historical records and research.
  2. It is headed by a Director General of Archaeological Survey of India.
- 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
25. *Dongria Kondh Tribe*, recently seen in the news, belongs to which of the following states in India?
- (a) Odisha  
(b) Chattisgarh  
(c) Jharkhand  
(d) Tamil Nadu
26. Which of the following is/are the UNESCO world heritage sites in India?
1. Kaziranga National park.
  2. Manas wildlife sanctuary.
  3. Great Nicobar Biosphere Reserve
  4. Victorian Gothic and Art Deco Ensembles of Mumbai
- Select the correct answer using the code given below:
- (a) 1 and 4 only  
(b) 2 and 3 only  
(c) 1, 2 and 4 only  
(d) 1, 2, 3 and 4

## EXPLANATIONS (History, Art & Culture)

1. (c)  
Both the Statements are correct.
- **Ellora Caves:** They are situated in Maharashtra and are a remarkable fusion of Buddhist, Hindu, and Jain monuments.

- The site includes **34 caves**, carved out of solid rock between the 6th and 10th centuries CE.
- **The Kailash Temple**, carved from a single rock and dedicated to Lord Shiva, attracts visitors from all over the world.

2. (c)

Both the Statements are correct.

- **Varaha Cave Temple:** In the coastal town of Mamallapuram in Tamil Nadu stands the Varaha Cave Temple, a UNESCO-listed monument carved out of a single rock in the **7th century CE**.
  - It was made by the **Pallava rulers**, depicting various forms of Lord Vishnu, including his avatar or incarnation as Varaha (boar) to save Goddess Earth.

3. (c)

Establishment of Thiruvalluvar Cultural Centres globally proposed in a political manifesto.

About Thiruvalluvar

- Thiruvalluvar was a celebrated Tamil poet and scholar .
- **Works :** He is best known as the author of 'Tirukkural', a collection of couplets on matters like ethics, politics, economics and love.
  - Tirukkural is considered one of the greatest works in Tamil literature.

4. (b)

**Pair 1 and 4 are correctly matched and Pair 2 and 3 are incorrectly matched :** Almost every state of India has a unique handloom product to offer such as **Jacquard from Uttar Pradesh, Chanderi from Madhya Pradesh, Phulkari from Punjab, Brocade from Benaras and Daccai from West Bengal.**

5. (c)

The issue of temple entry was first raised by **Ezhava leader T K Madhavan** in a 1917 editorial in his paper **Deshabhimani**.

- In the **1923 session of the INC in Kakinada**, a resolution was passed by the **Kerala Provincial Congress Committee** to take up anti-untouchability as a key issue.
- Vaikom, with its revered Shiva temple, was chosen as the location for the very first satyagraha.
  - Vaikom was a temple town in the princely state of **Travancore**.
    - Vaikom Satyagraha was the first among temple entry movements in India.
  - It lasted for 604 days (20 months) from March 30, 1924 to November 23, 1925.

6. (c)

Bohag Bihu, also known as Rongali Bihu, is the Assamese New Year and the biggest festival of Assam. It is celebrated in mid-April and marks the beginning of the Assamese solar calendar. While similar harvest festivals occur throughout India with different names (e.g Baisakhi in Punjab, Pongal in Tamil Nadu, and Vishu in Kerala), Bohag Bihu is specific to Assam and its culture.

7. (b)

**Statement 1 and 2 are correct:** In 1973, the **Dhebar Commission** set up a separate category for **Primitive Tribal Groups (PTGs)**.

- In **1975**, the Union identified 52 tribal groups as PTGs.
- In **1993**, 23 more groups were added to the list. Later, in 2006, these groups were named PVTGs.
- PVTGs are a **more vulnerable group** among tribal groups in India.
  - These groups have primitive traits, geographical isolation, low literacy, zero to negative population growth rate and backwardness.
  - Moreover, they are largely dependent upon hunting for food and a pre-agriculture level of technology.

**Statement 3 is not correct:** According to the 2011 Census, **Odisha** has the largest population of PVTGs followed by Madhya Pradesh.



8. (c)

**In News:** The Forest Department and Sri Lakshmi Narasimha Swamy Devasthanam (SLNSD) imposed certain restrictions on visitors arriving at Ahobilam temple in the wake of the intense heat wave that can impact the movement of wild animals.

- Ahobilam is a town and holy site in the Allagadda mandal of Kurnool district in the Indian state of **Andhra Pradesh**.
- It is surrounded by picturesque hills of the **Eastern Ghats** with several mountain hills and gorges.
- It is situated within the Nallamala forest.
- It is the centre of worship of **Narasimha**, the lion-headed avatar of **Vishnu**, to whom the nine Hindu temples and other shrines are all dedicated.

9. (b)

#### Major Harappan Sites

Site	Present Day
● Harappa	● Punjab, Pakistan
● Mohenjo-Daro	● Sindh, Pakistan
● Dholavira	● Kutch district of Gujarat,
● Kalibangan	● Rajasthan
● Lothal	● Gujarat
● Rakhigarhi	● Haryana
● Chanhudaro	● Sindh, Pakistan
● Ganweriwala	● Punjab, Pakistan
● Sutkagendor	● Baluchistan Province, Pakistan
● Alamgirpur	● Uttar Pradesh

10. (c)

All three pairs are correctly matched.

- Mohenjo-daro is located off the right (west) bank of the lower **Indus River** in Sindh, Pakistan.
- The archaeological remains of the Harappa port-town of Lothal is located along the **Bhogava River**, a tributary of Sabarmati, in the Gulf of Khambhat.
- Harappa, is located in eastern Pakistan on the left bank of the **Ravi River**.

11. (b)

Statements 1 is not correct and Statements 2 is correct.

#### Harappan Civilization

- The Harappan civilization is believed to be **one of the oldest world civilizations** together with Egypt and Mesopotamia.
- It was developed along the **river Indus** and for that reason it is also known as the **Indus Valley Civilization**.

- The Harappan civilization is identified as a **Bronze-age civilization** because many objects have been found that are made up of **copper based alloys**.
- **Rakhigarhi**, is the largest Harappan site of the Indian subcontinent.

## 12. (a)

### Rakhigarhi

- **Site location:** The present-day Rakhigarhi is located 27 km from the Ghaggar river, in the Ghaggar-Hakra river plain, in **Haryana**.
- The archaeological site, dating back to **2600-1900 BCE**.
- It is the **largest Harappans site** in the Indian Subcontinent.
- **Findings**
  - **Granary:** A granary belonging to the mature Harappan phase (2600 BCE to 2000 BCE) has been found here. It has 7 rectangular or square chambers.
  - **Culture, clothing and worship:** Fire altars and apsidal structures were revealed in Rakhigarhi.
  - **Cemetery and burial sites:** A cemetery of Mature Harappan period is discovered at Rakhigarhi, with eight graves found.

## 13. (c)

**Context:** Recently, the Satpula dam was in news due to its unique character of reliable source of water and acting as a defence against possible intruders in medieval times.

### About the Satpula:

- Satpula, a magnificent **Tughlaq-era dam**, is a historical marvel nestled in the heart of Delhi.
- It was built in **1340 by Mohammad Bin Tughlaq**, served **two purposes**:
  - Providing a reliable source of water for irrigation, and;
  - Acting as a defence against possible intruders.
- The dam finds mention in **Sir Sayyid Ahmad Khan's Asar-us-Sanadid** (The Remnant Signs of Ancient Heroes) — considered among the first books describing Delhi's numerous monuments in vivid detail.
- The Satpula dam was built using **Delhi quartz**, a stone found in the Aravallis, and is a testament to the superior masonry and architectural skills that marked the Tughlaq era.

## 14. (b)

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

### Context

- Telangana's Department of Heritage has recently unearthed a coin hoard belonging to the Ikshvaku period at Phanigiri.

### About Phanigiri

- The Phanigiri is an important **Buddhist site** in **Telangana**.
- It is located on the hilltop, on the ancient trade route (Dakshinapatha) connecting the west and the east coast of the Deccan.
- **Excavations at Phanigiri** brought to light a Mahastupa, apsidal Chaitya Grihas, votive Stupas, Congregation hall viharas, platforms with staircases at various levels.

## 15. (b)

**Pair 1 and 4 are correctly matched:**

- **Puthandu** - It is the Tamil New Year celebrated in Tamil Nadu.
- **Poila Boishakh** - It marks the Bengali New Year in West Bengal.

**Pair 2 and Pair 3 are correct:**

- **Vishu** - Celebrated as the New Year in Kerala.
- **Pana Sankranti** - Celebrated as the New Year in Odisha.

16. (c)

Both the Statements are correct.

- It was established in 1336 by the brothers Harihara I and Bukka Raya I of the Sangama dynasty.
- The wealth and fame of the empire inspired visits by and writings of medieval European travelers such as Domingo Paes, Fernão Nunes, and Niccolò de' Conti.
- The empire declined after a major military defeat in the Battle of Talikota in 1565 by the combined armies of the Deccan sultanates.

17. (b)

**News:** Kerala BJP Chief demands renaming Sulthan Bathery in Wayanad to Ganapathivattam.

**About**

- Sulthan Bathery is a municipal town in Wayanad district of **Kerala**.
- It was earlier known as **Ganapathi Vattam**. The name was after a Ganesha temple built during the **Vijayanagar period**.
  - The temple was constructed by Jains who migrated to Wayanad from areas in present-day Tamil Nadu and Karnataka in the **13th century**.

**History of "Sultan Bathery"**

- The town's name was changed after Tipu Sultan's invasion of the Malabar region in 1700.
- He used the temple as a battery or store for ammunition and artillery in Ganapathi Vattam.
- This led to the British recording Ganapathi Vattam as **"Tipu Sultan's Battery"**, and the name survived as Sulthan Bathery.

18. (d)

The 133rd Birth anniversary of Bharat Ratna Dr. Babasaheb Ambedkar was celebrated.

**Bhim Rao Ambedkar**

- He was an Indian jurist, economist, politician and social reformer.
  - He was first Minister of Law and Justice of independent India and is considered as the chief architect of the Constitution of India.
- He was born in a **low-caste Mahar** family on 14th April, 1891 to Subedar Ramji Maloji Sakpal.
  - He played a significant role in the formation of the Reserve Bank of India.
- The Central bank was formed on the concept presented by Babasaheb to the Hilton Young Commission.
  - He founded **Bahishkrit Hitkarini Sabha (Society for Welfare of the Ostracized)** and led social movements such as **Mahad Satyagraha** in 1927 to demand justice and equal access to public resources for the historically oppressed castes of Indian society.
  - The **Bahishkrit Bharat newspaper** was started in 1927 to address the cause of the depressed classes in view of the new reform.
- In 1946, he was elected to the Constituent Assembly of India.
- On 15 August 1947, he took oath as the first Law Minister of independent India.
  - Subsequently, he was **elected Chairperson of the Drafting Committee of the Constituent Assembly**, and steered the process of drafting of India's Constitution
- He published his book, **Who were Shudras?**
- In **1955**, he published his book titled **Thoughts on Linguistic States**.
- Dr. B.R. Ambedkar's death anniversary is observed as Mahaparinirvan Diwas across the country.
  - In 1956, he embraced Buddhism in a historic ceremony in Nagpur and died on 6th December 1956.
- In **1990**, the **Bharat Ratna**, India's highest civilian award, was posthumously conferred upon him.

19. (b)

**In News:** The Surya Tilak ceremony is a testament to the fusion of ancient tradition with modern science.

- The practice of Surya Tilak using integration of optics and mechanics is not new and has been essential to the ancient temples of the Indian subcontinent.
- Various temples across India perform this ceremony, each having a distinct engineering technique that illuminates deities with sunlight at specific times.
  - For instance, the **Suriyanar Kovil Temple in Tamil Nadu**, built between the 11th-12th centuries, illuminates specific areas throughout the year, including the deity Suriyanar and his consorts.

20. (d)

**In News:** Recently, the Prime Minister of India inaugurated the 2550th Bhagwan Mahaveer Nirvan Mahotsav on the auspicious occasion of Mahaveer Jayanti at Bharat Mandapam in New Delhi.

- **Kevaljnan:** At the age of forty-two he attained **Kevaljnan (omniscience)** through *right knowledge, right faith and right conduct (Three Jewels of Jainism)*.
- He became a **Jina (conqueror)** and the twenty-fourth tirthankara.
  - Rishabh Deva was the first tirthankara.

21. (b)

**Statement 1 is not correct:** Jainism is considered an independent religion that arose around the same time period as Hinduism (6th century BCE). While it shares some philosophical concepts with Hinduism, Jainism has distinct beliefs and practices.

**Statement 2 is correct:** Ahimsa, or non-violence, is a core principle of Jainism. Jains believe in minimizing harm to all living beings, extending this principle to their diet (vegetarianism) and daily activities.

22. (b)

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

**Context**

- The Archaeological Survey of India (ASI), Mumbai Circle celebrated World Heritage Day at Panhala Fort.

**About**

- **Location:** It is located in Panhala, Kolhapur in Maharashtra. It is strategically placed in proximity to the trade routes connecting the Sahyadri mountains, the Deccan plateau, and the Konkan coast.
- The fort was built between **1178 and 1209 CE**, by the **Shilahara** ruler **Bhoja II**.

**Significance**

- In 1954, Panhala Fort was declared as a **Monument of National Importance**.
- Panhala Fort, is one of the 11 forts that has been nominated by ASI for inclusion in the UNESCO World Heritage List under the title, '**Maratha Military Landscapes**'.

23. (b)

**Context:** Former Vice-President M. Venkaiah Naidu, singer Usha Uthup and tennis player Rohan Bopanna were among a host of prominent personalities who were conferred with Padma awards by President Droupadi Murmu recently.

**Padma Awards**

- The Padma Awards instituted **in the year 1954**, are one of the highest civilian honours of India announced annually on the eve of Republic Day.
- The award seeks to recognize achievements in all disciplines where an element of public service is involved.

- The awards are conferred on the recommendations made by the Padma Awards Committee, which is headed by the **Cabinet Secretary**.

**The Awards are given in three categories:**

- Padma Vibhushan (for exceptional and distinguished service),
- Padma Bhushan (distinguished service of higher order), and
- Padma Shri (distinguished service).

## 24. (a)

**In News:** Recently, the Indian Historical Records Commission (IHRC) adopted a new logo and motto.

**Statement 1 is correct:** Indian Historical Records Commission (IHRC) was *established in 1919*, as an all-India forum of creators, custodians, and users of records.

- It **advises** the Government of India on **all issues connected with the management of records** and their use for historical research.
- The IHRC plays a vital role in **identifying, collecting, cataloguing, and maintaining** historical documents, manuscripts, and other sources of historical information.

**Statement 2 is not correct:** The Union Minister of Culture, *not the Director General of Archaeological Survey of India*, heads the Indian Historical Records Commission (IHRC).

## 25. (a)

The **Niyamgiri hill range in Odisha state**, is home to the Dongria Kondh tribe.

- The Dongria have distinctive jewellery, tattoos and hairstyles.
- Women wear many rings through their ears and three through their noses, while boys wear two nose rings.
- Dongria girls wear clips in their hair and rings and beads around their necks.

## 26. (c)

**Statement 1 is correct:** Kaziranga National park was inscribed into UNESCO world heritage site in 1985.

It is located in Assam. It is inhabited by the world's largest population of one-horned rhinoceroses, as well as many mammals, including tigers, elephants, panthers and bears, and thousands of birds.

**Statement 2 is correct:** Manas wildlife sanctuary is inscribed into UNESCO world heritage site in 1985. It is located in the foothills of the Himalayas, where wooded hills give way to alluvial grasslands and tropical forests, the Manas sanctuary is home to the tiger, pygmy hog, Indian rhinoceros and Indian elephant.

**Statement 3 is not correct:** Great Nicobar Biosphere Reserve is not there in UNESCO world heritage sites but it is included in the list of Man and Biosphere program of UNESCO to promote sustainable development based on local community effort and sound science.

**Statement 4 is correct:** Victorian Gothic and Art Deco Ensembles of Mumbai inscribed into UNESCO world heritage site in 2018. The Victorian ensemble includes Indian elements suited to the climate, including balconies and verandas. The Art Deco edifices, with their cinemas and residential buildings, blend Indian design with Art Deco imagery, creating a unique style that has been described as Indo-Deco.

# Economy

1. With reference to Sensex, consider the following statements:
  1. The term 'Sensex' is a blend of words 'Sensitive' and 'Index' and was coined by stock market expert Deepak Mohoni.
  2. It was launched on January 1, 1986 as a basket of 30 stocks representing the country's largest, financially-sound companies.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
2. With reference to the Geographical Indication (GI) tag, consider the following statements:
  1. The first GI tag in India was given to the Darjeeling tea.
  2. It also covers non-agricultural products such as handicrafts, ceramics, and glassware.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 Millets, consider the following statements:
  1. India is the largest producer of millets in the world.
  2. Millets are not covered under Minimum Support Price (MSP).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. The term 'Impossible Trinity' or 'Trilemma' is related to:
  - (a) Space Astronomy
  - (b) Economy
  - (c) Climate Change
  - (d) Health
5. The Securities and Exchange Board of India (SEBI) is responsible for regulating the Indian securities market. Which of the following is **NOT** a function of SEBI?
  - (a) Protecting the interests of investors in the securities market.
  - (b) Promoting and regulating the growth of stock exchanges and intermediaries.
  - (c) Prohibiting insider trading and unfair market practices.
  - (d) Recommending the issue price of securities to companies.
6. Consider the following statements about the Reserve Bank of India (RBI):
  1. RBI is responsible for the issuance and supply of all denominations of Indian currency.
  2. RBI is the sole authority for regulating commercial banks in India.
  3. RBI determines the fiscal policy of the Union government.

Which of the statements given above is/are correct?

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

7. Consider the following statements about Geographical Indication (GI) Tags in India:

- 1. GI tags are awarded to products with a specific geographical origin and possess distinct qualities or reputation linked to that origin.
- 2. The Geographical Indications of Goods (Registration and Protection) Act of 1999 provides the legal framework for GI registration in India.
- 3. GI tags can be granted to products like agricultural products, natural resources, and manufactured handicrafts but not to services.

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. A country experiences a demographic dividend when a significant portion of its population enters the working age group. This can lead to economic growth. However, challenges also exist. Which of the following statements about demographic dividend is **most accurate**?

- (a) A large working-age population automatically translates into a skilled workforce and economic prosperity.
- (b) Demographic dividend can be maximized only if investments are made in education, healthcare, and skill development of the working-age population.
- (c) An aging population can never be a source of economic advantage.
- (d) Countries with a declining working-age population are not susceptible to economic stagnation.

9. Which one of the following minerals is known as brown diamond?

- (a) Manganese
- (b) Lignite
- (c) Iron
- (d) Copper

10. With reference to Hydroponic Farming, which of the following statements is/are correct?

- 1. It is a system of growing crops without soil in a liquid nutrient solution.
- 2. It requires continuous attention to the crops, unlike the traditional farming system.

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

11. With reference to the *International Labour Organisation (ILO)*, consider the following statements:

- 1. It was established in 1919 by the Treaty of Versailles as an affiliated agency of the League of Nations.
- 2. Its headquarter is located in France.
- 3. India is a founding member of it.

How many of the statements given above are correct?

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

12. Consider the following statements about Basel III norms:

1. Basel III norms establish minimum capital adequacy ratios that banks need to maintain to absorb potential financial losses.
2. The norms require banks to hold a higher proportion of their capital in highly liquid assets that can be easily converted into cash.
3. Basel III regulations are mandatory for all member countries of the International Monetary Fund (IMF).
4. Basel III norms are solely focused on regulating commercial banks, and do not apply to other financial institutions.

Which of the statements given above are correct?

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

13. With reference to Hydroponic Farming, which of the following statements is/are correct?

1. Hydroponics drastically reduces water usage, making it ideal for drought-prone areas.
2. In places where the terrain is unsuitable for soil-based agriculture, hydroponics offers a practical alternative.

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 Monetary Policy Committee, consider the following statements:

1. It is a 6 member committee that is led by the Reserve Bank of India's Governor.
2. The MPC determines the policy repo rate required to achieve the inflation target.
3. It is required to meet at least once in a year.

How many of the statements given above are correct?

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

15. Terms like '*deposition*' and '*etch*' sometimes appeared in the news in context of:

- (a) Total Solar Eclipse
- (b) Semiconductor Manufacturing
- (c) Protecting Wildlife
- (d) Water Harvesting Techniques



16. With reference to the Onion Production in India, which of the following statements is/are correct?
1. India is the second largest onion-growing country in the world.
  2. Maharashtra, is the largest onion producing state 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
17. With reference to the anti-dumping duty, consider the following statements:
1. It is a tariff imposed on imports manufactured in foreign countries that are priced below the fair market value of similar goods in the domestic market.
  2. The use of anti dumping measures is not permitted by the WTO.
- 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
18. Lavender cultivation is gaining traction in India due to its economic potential. Which of the following statements about Lavender cultivation in India is/are true?
- (a) Lavender thrives in hot and humid tropical climates with abundant rainfall.
  - (b) The Lavender Revolution was launched in 2020 through the Council of Scientific & Industrial Research (CSIR) Aroma Mission.
  - (c) The Indian state of Himachal Pradesh is a leading producer of Lavender due to its high-altitude temperatures.
  - (d) Due to its deep root system, Lavender cultivation is particularly suitable for preventing soil erosion on hillsides.
19. Consider the following statements about Corporate Social Responsibility (CSR) in India:
1. Indian companies with a net profit exceeding a specific threshold are mandated to spend a certain percentage of their profits on CSR activities.
  2. The focus of CSR activities in India is primarily on environmental sustainability initiatives.
  3. The Ministry of Corporate Affairs (MCA) is the nodal ministry responsible for monitoring and regulating CSR activities in India.
- Which of the statements given above are correct?
- (a) 1 and 2 only
  - (b) 2 and 3 only
  - (c) 1 and 3 only
  - (d) All of the above
20. With reference to the World Trade Organization (WTO), which of the following statements is/are correct?
1. It was founded in 1995 and headquartered in Berlin, Germany.
  2. More than 150 countries are members of the WTO.
- 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

21. What are the advantages of the Aquaponics technique used in farming?
1. Less operational cost than a conventional farm
  2. There is no need for fertilisers
  3. Suits greatly to the demand for tuberous plants and root vegetables
  4. Yield is higher than that of conventional farming
- Select the correct answer using the code given below:
- (a) 1, 2 and 3 only
  - (b) 1, 2 and 4 only
  - (c) 1, 3 and 4 only
  - (d) 2, 3 and 4 only
22. With reference to the Horticulture Sector in India, consider the following statements:
1. India is the second largest producer of vegetables and fruits in the world.
  2. Productivity of horticulture crops is much lower compared to productivity of food grains.
- 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 the Asian Development Bank, which of the following statements is/are correct?
1. ADB is a regional development bank established in 1966 for Social and Economic Development.
  2. It has all the members from the Asia-Pacific region only.
- 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
24. What are some potential consequences of Shrinkflation for the Indian economy?
- (a) Increased inflation due to a perception of product scarcity.
  - (b) Reduced consumer confidence and purchasing power.
  - (c) Difficulty in accurate measurement of inflation using price indices.
  - (d) All of the above
26. The Indian government allows 100% FDI under the automatic route in the manufacturing sector. This implies that foreign companies can:
- (a) Invest any amount of money in any manufacturing activity without prior government approval.
  - (b) Invest only up to a certain pre-defined limit in specific manufacturing sub-sectors without approval.
  - (c) Invest freely but are subject to mandatory profit-sharing agreements with domestic partners.
  - (d) Invest only in joint ventures with Indian companies, with a pre-determined equity share.
27. With reference to the Agriculture Sector in India, which of the following statements is/are correct?
1. The share of agriculture in total Gross Value Added (GVA) of the economy was 35% in 2022-23.
  2. The agriculture sector is one of the leading causes of disguised unemployment in 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

28. With reference to the Gross Fixed Capital Formation (GFCF), consider the following statements:

1. It refers to the growth in the size of fixed capital in an economy.
2. It does not include capital formation as a result of investment by the government.

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

29. Which of the following statements is/are correct regarding the Primary Agricultural Credit Societies (PACS)?

1. A village can have only one Primary Agricultural Credit Society
2. They are connected to the core banking system (CBS)
3. One of the most important functions of District Central Cooperative Banks is to provide funds to the Primary Agricultural Credit Societies.

Choose the correct answer from options given below

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

30. With reference to the International Monetary Fund (IMF), which of the following statements is/are correct?

1. The IMF was established in 1944 in the aftermath of the Great Depression of the 1930s.
2. It is the lender of last resort to governments of countries that had to deal with severe currency crises.

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

31. Consider the following statements regarding groundwater in India.

1. Around 90% of groundwater depletion in India is due to the Industrial sector.
2. Around 85% of rural water requirements and 50% of urban areas' water requirements are fulfilled by groundwater.
3. India was declared as the highest groundwater user in the world in 2018.

Which of the statements given above is/are correct?

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

32. Which of the following best describes the term "Reverse Repo Rate", sometimes seen in the news?

- (a) The rate of the interest that the commercial banks pay to RBI on long-term loans from the RBI.
- (b) The rate of interest that RBI pays to commercial banks that offer long term loans to RBI.
- (c) The rate of interest that RBI pays to commercial banks that offer a short term loan to RBI.
- (d) The rate of interest that commercial banks pay to RBI that borrow short-term loans from RBI.

33. With reference to the National Bank for Agriculture and Rural Development (NABARD), which of the following statements is/are correct?
1. It is an apex regulatory body for overall regulation of regional rural banks and apex cooperative banks in India.
  2. It was established on the recommendations of the B. Sivaraman Committee.
- 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
34. Disaster-resilient infrastructure should ideally possess all of the following characteristics **except**:
- (a) Flexibility to adapt to changing environmental conditions.
  - (b) Redundancy in critical systems to ensure continued operation.
  - (c) High construction costs compared to traditional infrastructure.
  - (d) Use of local, sustainable materials whenever possible.
35. With reference to the Coalition for Disaster Resilient Infrastructure (CDRI), which of the following statements is/are correct?
1. It was launched during the United Nations Climate Action Summit in 2019.
  2. Its headquarter is located in Geneva, Switzerland.
- 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
36. With reference to Compulsory Convertible Debenture (CCD), which of the following statements is/are correct?
1. It is a type of bond which must be converted into stock by a specified date.
  2. It is classified as a hybrid security, as it is neither purely a bond nor purely a stock.
- 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
37. Marrakesh Agreement, recently seen in the news is related to:
- (a) WTO
  - (b) IMF
  - (c) World Bank
  - (d) BRICS
38. With reference to the Nominal Effective Exchange Rate (NEER), which of the following statements is/are correct?
1. is an unadjusted weighted average rate at which one country's currency exchanges for a basket of multiple foreign currencies.
  2. It is an indicator of a country's international competitiveness in terms of the foreign exchange market.

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
39. A rise in the savings rate of individuals can surprisingly cause a fall rather than a rise in the overall savings in an economy. This concept was popularised by which of the following economists?
- (a) Adam Smith
  - (b) Karl Marx John
  - (c) John Maynard Keynes
  - (d) Amartya Sen
40. Which of the following committees is NOT associated with recommendations for improving corporate governance in India?
- (a) Narayana Murthy Committee on Corporate Governance
  - (b) J. J. Irani Committee on Corporate Governance
  - (c) Birla Committee on Corporate Governance
  - (d) Urjit Committee
41. In the context of economic theory, the Paradox of Thrift refers to the situation where:
- (a) Increased government spending stimulates economic growth but reduces private savings.
  - (b) Increased government spending leads to higher inflation and decreased economic output.
  - (c) Increased individual savings during a recession lead to a decrease in aggregate demand and a deeper recession.
  - (d) Increased individual savings during economic boom times lead to a decrease in investment opportunities.

## EXPLANATIONS (Economy)

1. (c)

Both the statements are correct: Sensex is the benchmark index of the Bombay Stock Exchange (BSE) in India.

- It was launched on **January 1, 1986** as a **basket of 30 stocks** representing the country's largest, financially-sound companies listed on the BSE.
- The term 'Sensex' is a blend of words '**Sensitive**' and '**Index**' and was coined by stock market expert **Deepak Mohoni**.
- If the Sensex value increases it means that there is a **general increase in the prices of shares**. On the other hand, if the value of Sensex declines, it means that there is a **general decrease in share prices**.

2. (c)

Both the statements are correct.

**News**

- Over 60 products from across India, including the famous Banaras Thandai, have been given the Geographical Indication (GI) tag.

**About**

- Geographical Indication (GI) tag is a form of certification that recognises unique products based on their origin, which is often attributed to agro-climatic variations and traditional cultivation practices.

- This certification is **also extended to non-agricultural products**, such as handicrafts, based on human skills, materials and resources available in certain areas that make the product unique.
- The **first GI tag** in the country was given two decades ago to the famous **Darjeeling tea**.
- In December 1999, the Parliament had passed the Geographical Indications of Goods (Registration and Protection) Act, 1999. This Act seeks to provide for the registration and better protection of geographical indications relating to goods in India.

### 3. (a)

**News:** The Food and Agriculture Organization (FAO) organized the closing ceremony of the International Year of Millets (IYM) 2023 on 29 March 2024 at the FAO headquarters, Rome, Italy.

#### About: Millets

- Millet is a common term to categorize small-seeded grasses that are often termed Nutri-cereals or Dryland-cereals and includes Sorghum (Jowar), Pearl Millet (Bajra), Finger Millet (Ragi), Little Millet (Kutki), Foxtail Millet (Kakun), Proso Millet (Cheena), Barnyard Millet (Sawa), Kodo Millet (Kodon) and other millets.
- India is the **largest producer** of millets in the world.
- The major millet producing states in India are Rajasthan, Uttar Pradesh, Haryana, Gujarat, Madhya Pradesh, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh and Telangana.
- The millets such as Ragi, Jowar and Bajra are **covered under Minimum Support Price (MSP)**.

### 4. (b)

**News:** Recently, the Prime Minister and RBI Governor attended a ceremony **marking 90 years of the RBI** in Mumbai.

- 'Impossible Trinity' or 'Trilemma': The RBI faces the challenge of managing the 'impossible trinity' or 'trilemma', which refers to the *difficulty of having a stable foreign exchange rate, free capital movement (absence of capital controls), and an independent monetary policy* all at the same time.

### 5. (d)

**Statements a, b and c are correct:** SEBI works to protect investors, ensure fair practices, and oversee the development of stock exchanges and intermediaries.

Determining the issue price of securities is a decision made by the company itself, often in consultation with investment bankers. SEBI may regulate aspects like the prospectus and disclosure requirements, but it doesn't set the price.

### 6. (a)

**Statement 1 is not correct:** The RBI has the sole right or authority or monopoly of issuing currency notes except one rupee note and coins of smaller denomination. The responsibility for issuing coins is that of the Government of India (GoI), RBI's role is restricted to putting into circulation the coins received by it.

**Statement 2 is correct:** RBI is responsible for regulating commercial banks in India. This includes issuing licenses, setting capital adequacy norms, and overseeing their operations to ensure financial stability.

**Statement 3 is not correct:** The Ministry of Finance, along with the NITI Aayog, formulates the fiscal policy of the Indian government. RBI plays a role in monetary policy, which is distinct from fiscal policy.

### 7. (d)

**Statement 1 is correct:** A core principle of GI tags is that the product's specific geographical origin imparts unique characteristics or a reputation that distinguishes it from similar products. For example, Darjeeling Tea or Kanchipuram Silk.

**Statement 2 is correct:** The Geographical Indications of Goods (Registration and Protection) Act of 1999 established the legal framework for registering and protecting GI tags in India. This act defines the process, rights, and penalties associated with GI protection.

**Statement 3 is correct:** GI tags in India can be granted to a wider range of products than just agricultural goods. It encompasses:

- Agricultural products (e.g., Alphonso Mango)
- Natural resources (e.g., Kangra Valley Himalayan Rock Salt)
- Manufactured handicrafts (e.g., Phulkari embroidery)
- GI tags are not currently granted to services in India.

8. (b)

**Option (a) is not correct:** A large young population doesn't automatically translate to a skilled workforce. Investment in education and training is crucial to reap the benefits of the demographic dividend.

**Option (b) is the most accurate:** By investing in human capital through education, healthcare, and skill development, a country can empower its young population to contribute effectively to the economy, leading to higher productivity and potential economic growth.

**Option (c) is not correct:** While aging populations come with their own challenges, some countries have managed to achieve economic success with an older workforce, for example, by focusing on innovation and technological advancements.

**Option (d) is not correct:** Countries with a declining working-age population may face labor shortages and potential economic stagnation if proper measures are not taken, such as automation or immigration policies.

9. (b)

**In News:** India has for the first time crossed the milestone of 1 billion tonnes of coal and lignite production in the financial year 2023-24.

- Lignite is a low grade brown coal (is known as brown diamond), which is soft with high moisture content.
- The principal lignite reserves are in Neyveli in Tamil Nadu and are used for generation of electricity.

10. (c)

**Both the Statements are correct.**

#### Hydroponic Farming

- The Hydroponic System is a system of **growing crops without soil**, often called soilless farming. In this system, the plant roots grow in a liquid nutrient solution or inside the moist inert materials like **Rockwool and Vermiculite**.
- The liquid nutrient solution is a mixture of essential plant nutrients in the water.
- The plant roots are suspended either in the static liquid solution or in a continuously flowing nutrient mixture.
- It requires continuous attention to the crops, unlike the traditional farming system.

#### Suitable Regions for Hydroponic Farming

- **Areas with Limited Water Supply:** Hydroponics drastically reduces water usage, making it ideal for drought-prone areas.
- **Rocky Regions:** In places where the terrain is unsuitable for soil-based agriculture, hydroponics offers a practical alternative.
- **Low Soil Fertility Areas:** Hydroponics bypasses the need for fertile soil, allowing cultivation in regions with poor soil quality.



- **Demand-Driven Areas:** Regions with a high demand for fresh products are perfect for hydroponic farms, catering to health-conscious consumers in urban and semi-urban locales.

## 11. (b)

**Statement 1 is correct:**

- **International Labour Organisation (ILO):** It is a specialised agency of the United Nations.
  - It was established in 1919 by the **Treaty of Versailles** as an affiliated agency of the **League of Nations**, and became the first affiliated specialised agency of the **United Nations in 1946**.

**Statement 2 is not correct:**

- **Headquarter:** Geneva, Switzerland.

**Statement 3 is correct:**

- India is a founder member of the ILO.
  - At present the ILO has 185 Members.
- A unique feature of the ILO is its **tripartite character**.
- At every level in the Organization, Governments are associated with the two other social partners, namely the **workers and employers**.

## 12. (a)

**Statement 1 is correct:** A core principle of Basel III is setting minimum capital adequacy ratios (CAR) for banks. This ensures banks have sufficient capital buffers to withstand financial shocks and maintain lending capacity during crises.

**Statement 2 is correct:** Basel III emphasizes the importance of liquidity for banks. It requires them to hold a higher proportion of high-quality liquid assets (HQLA) that can be readily sold or converted into cash to meet short-term obligations.

**Statement 3 is not correct:** Basel III norms are developed by the Basel Committee on Banking Supervision (BCBS), not the IMF. While many countries implement Basel III recommendations, it's not mandatory for all IMF member countries.

**Statement 4 is not correct:** Basel III regulations apply to internationally active banks, not just commercial banks. Investment banks and other financial institutions with significant cross-border operations are also subject to these norms.

## 13. (c)

**Both the statements are correct.**

**Context**

- In the wake of evolving consumer preferences, Hydroponic Farming has emerged as, at the forefront of an agricultural transformation.

**Hydroponic Farming**

- The Hydroponic System is a system of growing crops without soil, often called soilless farming. In this system, the plant roots grow in a liquid nutrient solution or inside the moist inert materials like Rockwool and Vermiculite.
- The liquid nutrient solution is a mixture of essential plant nutrients in the water.
- The plant roots are suspended either in the static liquid solution or in a continuously flowing nutrient mixture.

**Suitable Regions for Hydroponic Farming**

- **Areas with Limited Water Supply:** Hydroponics **drastically reduces water usage**, making it ideal for drought-prone areas.



- **Rocky Regions:** In places where the **terrain is unsuitable for soil-based agriculture**, hydroponics offers a practical alternative.
- **Low Soil Fertility Areas:** Hydroponics bypasses the need for fertile soil, allowing cultivation in regions with poor soil quality.
- **Demand-Driven Areas:** Regions with a high demand for fresh products are perfect for hydroponic farms, catering to health-conscious consumers in urban and semi-urban locales.

**14. (b)**

**Statement 1 and 2 are correct:** The Monetary Policy Committee or the MPC is a **6 member committee** that is led by the **RBI governor**.

- The first such MPC was constituted in **2016**.
- The MPC determines the **policy repo rate** required to achieve the **inflation target**.

**Statement 3 is not correct:** The MPC is required to meet at least **four times in a year**. The quorum for the meeting of the MPC is four members.

- Each member of the MPC has one vote, and in the event of an equality of votes, the Governor has a second or casting vote.

**15. (b)**

**In News :** With supply chain disruptions during the **pandemic and recent geopolitical tensions**, many countries, **including India**, have realised the importance of **investing in chip manufacturing infrastructure**.

**The Manufacturing Process:**

- It involves several critical steps like **deposition, photoresist, lithography, etch, ionisation, and packaging**.
- **Deposition:** It begins with a **silicon wafer**. Wafers are sliced from a salami-shaped bar of **99.99% pure silicon (known as an 'ingot')** and polished to extreme smoothness.
  - Thin films of conducting, isolating, or semiconducting materials are deposited on the wafer to enable the first layer to be printed on it.
- **Etching:** It refers to any technology that will selectively remove material from a thin film on a substrate (with or without prior structures on its surface) and by this removal create a pattern of that material on the substrate.

**16. (c)**

**Both the Statements are correct.**

**Onion Production in India**

- India is the **second largest onion-growing country in the world**. Indian onions have two crop cycles, first harvesting which starts from November to January and the second harvesting from January to May.
- **Major varieties found in India:** Agrifound Dark Red, Agrifound Light Red, NHRDF Red, Agrifound White, Agrifound Rose and Agrifound Red, Pusa Ratnar, Pusa Red, and Pusa White Round.
- **Major Onion producing states:** Maharashtra, Karnataka, Madhya Pradesh, Gujarat.
- **Major Export Destinations (2022-23):** Bangladesh, Malaysia, United Arab Emts, Sri Lanka, Nepal and Indonesia.

**17. (a)**

**News:** The Directorate General of Trade Remedies (DGTR) has recommended the imposition of **anti-dumping duty** on sodium cyanide (NaCN) imported from China, the European Union, Japan and Korea to guard the domestic players from the cheap imports.

### What is anti-dumping duty?

- It is a **tariff imposed on imports** manufactured in foreign countries that are priced **below the fair market value** of similar goods in the domestic market.
- The duty is priced in an amount that equals the difference between the normal costs of the products in the importing country and the market value of similar goods in the exporting country.
- The **use of anti-dumping measures** as an instrument of fair competition is **permitted** by the WTO.

### 18. (d)

**Option (a) is not correct:** Lavender prefers a warm and temperate climate with well-distributed rainfall, not hot and humid conditions.

**Option (b) is not correct:** The Purple or Lavender Revolution was **launched in 2016** by the Union Ministry of Science & Technology through the Council of Scientific & Industrial Research (CSIR) Aroma Mission. The main product of Lavender cultivation is essential oil extracted from its flowers, widely used in the perfume, cosmetics, and aromatherapy industries.

**Option (c) is not correct:** While some cultivation does occur in Himachal Pradesh, the state of Jammu and Kashmir, particularly the Baderwah Valley, is known as the "Lavender Capital of India" due to its suitable climate and successful cultivation efforts.

**Option (d) is correct:** Lavender has a deep root system that helps to bind soil particles, making it a suitable crop for preventing soil erosion on hillsides.

### 19. (c)

**Statement 1 is correct:** The Companies Act, 2013 mandates certain companies to spend at least 2% of their average net profit over the preceding three years on CSR activities.

**Statement 2 is not correct:** While environmental sustainability is an important area of CSR, the Companies Act allows for CSR activities across a broader range of social and environmental issues, including education, healthcare, poverty alleviation, and promoting gender equality.

**Statement 3 is correct;** The Ministry of Corporate Affairs (MCA) oversees the implementation of CSR provisions under the Companies Act.

### 20. (b)

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

#### World Trade Organization (WTO)

- **WTO** is the international organization that deals with the rules of trade between countries.
- **History:** **WTO** was founded in **1995**. It is the successor to the General Agreement on Tariffs and Trade (GATT) established in the wake of the Second World War.
- **Headquarters:** Geneva, Switzerland
- **Member:** The WTO is run by its 164 members.

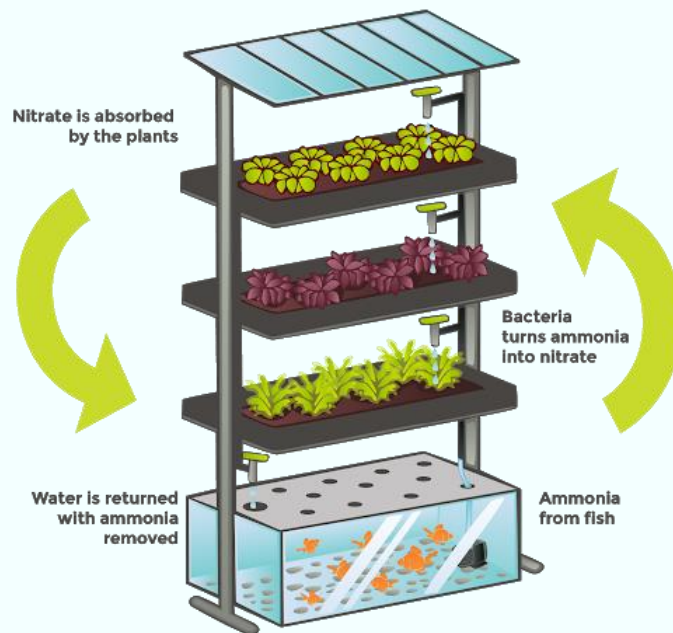
### 21. (b)

Aquaponics is a form of agriculture that combines raising fish in tanks (recirculating aquaculture) with soilless plant culture (hydroponics). It is an emerging technique in which both fishes, as well as plants, are grown in an integrated manner. It is a sustainable method of raising both fish and vegetables.

**Advantages:** The setup cost of the aquaponic farm might be higher than conventional farms, but the **operational cost is much less, there is no need for fertilisers** and the water requirement is 90% less than that required in conventional farming. Suits greatly to the demand of organic fruits and vegetables, **the yield from aquaponics is two times higher than that of conventional farming.**

**Disadvantages:** This method can become an issue when considering that specific plant species such as tuberous plants and root vegetables perform most of their needed growth within soil like Potato, Carrot etc., high Electricity Usage etc.

## AQUAPONIC SYSTEM



22. (a)

**Statement 1 is correct:** Horticulture is the science and art of cultivating fruits, vegetables, flowers, and ornamental plants.

- At present, India is the **second largest producer** of vegetables and fruits in the world.
- India ranks first in the production of a number of crops like Banana, Lime & Lemon, Papaya, Okra.

**Statement 2 is not correct:** India is currently producing about **320.48 million tons of horticulture produce** which has surpassed the food grain production, that too from much less area.

- Productivity of horticulture crops is much higher compared to productivity of food grains.

23. (a)

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

**Asian Development Bank**

- ADB is a regional development bank established in **1966** for Social and Economic Development.
- It has **68 members** — of which 49 members are from within Asia and the Pacific and 19 outside.
- It is a **multilateral development bank**, which seeks to help its developing member countries to reduce poverty and improve their people's quality of life through inclusive economic growth, environmentally sustainable growth and regional integration.
- **Headquarters:** Manila, Philippines.

25. (d)

Shrinkflation is the practice by companies of reducing the size or quantity of a product while keeping the same price. Shrinkflation can lead to all the mentioned consequences. It can create a perception of scarcity, erode consumer confidence, and make it difficult to accurately measure inflation using traditional price indices that rely on a fixed quantity of goods.

**26. (a)**

The automatic route in FDI allows foreign companies to invest any amount of money in specific sectors without prior government approval. This is typically the case for well-established and non-sensitive sectors like manufacturing.

**Option b is not correct** because the automatic route doesn't impose pre-defined limits based on sub-sectors.

**Option c is not correct** as there's no mandatory profit-sharing requirement for the automatic route.

**Option d is not correct** as the automatic route doesn't require mandatory joint ventures or pre-determined equity shares.

**27. (b)**

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

**Agriculture Sector in India**

- India is one of the major players in the agriculture sector worldwide and it is the primary source of livelihood for ~55% of India's population.
- It is the **second-largest** producer of fruit, vegetables, tea, farmed fish, sugarcane, wheat, rice, cotton, and sugar.

**Disguised unemployment**

- Disguised unemployment exists when part of the labor force is either left without work or is working in a redundant manner such that worker productivity is essentially zero.
- It is unemployment that does not affect aggregate output. An economy demonstrates disguised unemployment when productivity is low and too many workers are filling too few jobs.
- The agriculture sector is one of the leading causes of disguised unemployment in the country.

**28. (a)**

**Statement 1 is correct:** GFCF refers to the **growth in the size of fixed capital in an economy.**

- Fixed capital refers to things such as buildings and machinery, for instance, which require investment to be created.

**Statement 2 is not correct:** GFCF also includes **capital formation as a result of investment by the government.**

**29. (b)**

**Statement 1 is not correct:** Primary Agricultural Credit Societies (PACS) are **village level cooperative credit societies that serve as the last link in a three-tier cooperative credit structure.** A village can have multiple Primary Agricultural Credit Societies (PACS).

**Statement 2 not correct:** While SCBs and DCCBs are connected to the Core Banking Software (CBS), PACS are not.

**Statement 3 is correct:** One of the most important functions of District Central Cooperative Banks is to provide funds to the Primary Agricultural Credit Societies. Credit from the SCBs is transferred to the district central cooperative banks, or DCCBs, that operate at the district level.

The DCCBs work with PACS, which deal directly with farmers. PACS are involved in short term lending — or what is known as **crop loan.**

**30. (c)**

**Both the Statements are correct.**

**International Monetary Fund (IMF)**

- The IMF was established in **1944** in the aftermath of the Great Depression of the 1930s.

- The organization is currently composed of **190 member** countries.
  - Each member has representation on the IMF's executive board in proportion to its financial importance.
- The primary goal of the IMF back then was to bring about international economic coordination to prevent competing currency devaluation by countries trying to promote their own exports.
- Eventually, the IMF evolved to be a **lender of last resort** to governments of countries that had to deal with severe currency crises.

**31. (c)**

**Statement 1 is not correct:** 90% of groundwater depletion in India is due to the **agriculture sector**. 8- 9% of Groundwater is utilized by households and is followed by the **Industrial sector (1-2%)**.

**Statement 2 is correct:** Around 85% of rural water requirements and 50% of urban areas water requirements are fulfilled by groundwater.

**Statement 3 is correct:** India is the **highest groundwater user in the world**, with an estimated usage of around 251 bcm per year, more than a quarter of the global total.

**32. (c)**

The Reverse Repo Rate is an important Monetary Policy tool used by the Reserve Bank of India (RBI) to control liquidity and inflation in the economy. The interest rate at which the RBI borrows money from banks for the short term is defined as Reverse Repo Rate. The Reverse Repo Rate helps the RBI get money from the banks in times of need. In return, the RBI offers attractive interest rates to them. The banks also voluntarily park excess funds with the central bank as it provides them with an opportunity to earn higher interest on surplus money lying idle.

**33. (c)**

**Both the Statements are correct.**

**NABARD**

- It is an apex regulatory body for overall regulation of regional rural banks and apex cooperative banks in India.
- It is under the jurisdiction of the **Ministry of Finance**, Government of India.
- NABARD was established on the recommendations of **B. Sivaraman Committee** in 1982 to implement the National Bank for Agriculture and Rural Development Act 1981.
- NABARD supervises State Cooperative Banks (StCBs), District Cooperative Central Banks (DCCBs), and Regional Rural Banks (RRBs) and conducts statutory inspections of these banks.

**34. (c)**

Disaster Resilient Infrastructure (DRI) refers to the design and construction of infrastructure systems that can withstand, adapt to, and rapidly recover from disasters.

Disaster-resilient infrastructure aims to minimize damage and disruption during disasters by:

- The ability to adapt to changing conditions like floods or earthquakes is crucial.
- Back-up systems ensure critical infrastructure like power grids remain functional.
- Using local, renewable materials reduces environmental impact and may be better suited to local conditions.
- Disaster-resilient infrastructure saves money in the long run by preventing costly repairs and downtime after disasters. Hence, **statement (c) is not correct**.

**35. (a)**

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

### Coalition for Disaster Resilient Infrastructure (CDRI)

- CDRI is a global partnership of National Governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, academic and knowledge institutions.
- CDRI was launched during the United Nations Climate Action Summit in 2019, at New York.
- Members: 31 Countries, 6 International Organizations and 2 private sector organizations.
- Headquarter: New Delhi

### 36. (c)

Both the Statements are correct.

#### Context

- The Competition Commission of India (CCI) has approved subscription to compulsory convertible debentures (CCDs) of Napino Auto and Electronics Limited (Napino) by International Finance Corporation.

#### Compulsory Convertible Debenture (CCD)

- A compulsory convertible debenture (CCD) is a type of bond which must be converted into stock by a specified date.
- It is classified as a hybrid security, as it is neither purely a bond nor purely a stock.

### 37. (a)

#### In News

- The World Trade Organization (WTO) marks the 30th anniversary of the Marrakesh Agreement, a significant milestone in global trade cooperation.

#### Marrakesh Agreement

- It was signed on April 15, 1994, during the Uruguay Round of multilateral trade negotiations held in Marrakesh, Morocco.
- The agreement marked a significant milestone in global trade cooperation and set the framework for international trade relations among participating countries.
- The Marrakesh Agreement formally created the World Trade Organization, replacing the **General Agreement on Tariffs and Trade (GATT)** as the primary international body governing global trade.
- The WTO officially came into existence on **January 1, 1995**.

### 38. (c)

Both the Statements are correct.

#### Nominal Effective Exchange Rate (NEER)

- NEER is an **unadjusted weighted average rate** at which one country's currency exchanges for a basket of multiple foreign currencies.
- It is the amount of domestic currency needed to purchase foreign currency and an indicator of a **country's international competitiveness** in terms of the foreign exchange (forex) market.
- The Reserve Bank of India has constructed NEER indices of the rupee against a **basket of six and also of 40 currencies**.
  - The former comprises the US dollar, the euro, the Chinese yuan, the British pound, the Japanese yen and the Hong Kong dollar.
  - The latter index covers a bigger basket of 40 currencies of countries that account for about 88% of India's annual trade flows.
- The NEER indices are with reference to a base year value of **100 for 2015-16**.



- The increases indicate the rupee's effective appreciation against these currencies and decreases point to overall exchange rate depreciation.

### 39. (c)

**John Maynard Keynes**

**About**

- The paradox of savings, also known as the paradox of thrift, refers to the theory that a rise in the savings rate of individuals can surprisingly cause a fall rather than a rise in the overall savings in an economy.
- The concept was popularised by British economist **John Maynard Keynes** in his 1936 book *The General Theory of Employment, Interest, and Money*.
- Keynesian economists believe that higher savings is bad for the wider economy, and that boosting consumer spending is the way to grow an economy.

### 40. (d)

**Narayana Murthy Committee (2003):** Recommended measures for strengthening independent directors, improving disclosures, and increasing auditor independence.

**J. J. Irani Committee (2005):** Focused on enhancing the role of independent directors, strengthening audit committees, and improving corporate social responsibility practices.

**Birla Committee on Corporate Governance (1999):** Pioneered discussions on corporate governance reforms in India. It advocated for transparency, accountability, and stakeholder rights.

**Urjit Patel Committee (2013):** It was largely responsible for modifying and enhancing the RBI's Monetary Policy Framework.

### 41. (c)

The Paradox of Thrift is a concept developed by John Maynard Keynes. It posits that during a recession, if individuals try to be more cautious and increase their savings, it can have a counterintuitive effect, like: When people save more, they spend less. This decrease in spending reduces the overall demand for goods and services in the economy (**aggregate demand**). Reduced demand leads to lower production by businesses. This, in turn, can lead to reduced investment and hiring. Lower production and hiring lead to lower incomes for workers, further dampening demand and creating a vicious cycle that can deepen the recession.

# INDIAN POLITY & CONSTITUTION

1. With reference to the *Association for Democratic Reforms (ADR)*, consider the following statements:
  1. It was established by the Union Ministry of Law and Justice in 1999.
  2. It focuses on corruption and criminalization in the political process.Which of the statements given above is/are correct?
  - (a) 1 only
  - (a) 2 only
  - (a) Both 1 and 2
  - (a) Neither 1 nor 2
2. With reference to the *National Green Tribunal (NGT)*, consider the following statements:
  1. It was set up as India's international law obligations to develop national laws on the environment and implement them effectively.
  2. It is not bound by the procedure laid down under the Code of Civil Procedure.
  3. It has powers to review its own decisions.How many of the statements given above are correct?
  - (a) Only one
  - (b) Only two
  - (c) All three
  - (d) None
3. Consider the following statements regarding the Prevention of Money Laundering Act (PMLA):
  1. The Enforcement Directorate (ED) is classified as a 'police agency' by the Act since it has powers of summons, arrests, and raids.
  2. Under the PMLA, the burden of proof of innocence lies with the accused and not the Enforcement Directorate (ED).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. Consider the following:
  1. Education
  2. Extradition
  3. Forests
  4. Administration of Justice
  5. Post Office Savings BankHow many of the above subjects were moved from State to the Concurrent List of Schedule VII of the Indian Constitution?
  - (a) Only two
  - (b) Only three
  - (c) Only four
  - (d) All five



5. With reference to the Surrogacy (Regulation) Act, 2021, consider the following statements:
1. The couple is deemed eligible if they have been married for five years.
  2. A surrogate mother has to be a close relative without any child of her own.
- 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. The National Pharmaceutical Pricing Authority (NPPA) plays a crucial role in regulating the pharmaceutical sector in India. Which of the following statements about NPPA is correct?
- (a) NPPA is a statutory regulatory body with the authority to fix prices of all drugs sold in India.
  - (b) NPPA's primary function is to promote research and development of new drugs in India.
  - (c) NPPA enforces price ceilings for essential and scheduled drugs based on a specific pricing mechanism.
  - (d) NPPA cannot penalize pharmaceutical companies for violations of pricing regulations.
7. A party becomes eligible to be accorded national status in India, if
- (a) It is recognised as a State party in at least three States.
  - (b) It secures not less than 6% of the total votes polled in four or more States in the last Lok Sabha or Assembly elections, and in addition, gets at least three of its members elected to the Lok Sabha.
  - (c) It wins at least 2% of the total seats in the Lok Sabha from not less than three States.
  - (d) None of the above.
8. Which of the following States/Union Territories comes under the Sixth Schedule of the Indian Constitution?
1. Ladakh
  2. Meghalaya
  3. Tripura
  4. Mizoram
- Select the correct answer using the code given below:
- (a) 2 and 3 only
  - (b) 1, 2 and 3 only
  - (c) 2, 3 and 4 only
  - (d) 3, and 4 only
9. Recently, the Supreme Court has expanded the scope of Articles 14 and 21 to include, which of the following rights?
- (a) Right to live with dignity
  - (b) Right against the adverse effects of climate change
  - (c) Right to livelihood
  - (d) Right to privacy
10. Recently, the Supreme Court of India observed 'right against climate change' and 'sustainable development' as:
- (a) Natural Rights
  - (b) Fundamental Rights
  - (c) Legal Rights
  - (d) Moral Rights

11. With reference to the *Curative Jurisdiction*, consider the following statements:
1. It is mentioned in the Indian Constitution as a layer of appeal against a Supreme Court decision.
  2. It can only be filed after a review plea has already been dismissed by the Supreme Court.
- 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
12. With reference to the star campaigners, consider the following statements:
1. Article 324 defines a star campaigner and appointment procedure related to it.
  2. A recognised political party cannot have more than 40 star campaigners.
- 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 Voter Verified Paper Audit Trail (VVPAT), consider the following statements:
1. It was used for the first time in the bye- election in Kerala.
  2. 2019 Lok Sabha elections became the first general election to have 100% of Electronic Voting Machines being attached to VVPATs.
- 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. With reference to the First Information Report (FIR), consider the following statements:
1. An FIR can be lodged only in writing by the victim.
  2. Zero FIR was introduced on the recommendation of the Padmanabhaiah Committee on Police Reforms.
- 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
15. With reference to the Preventive Detention, consider the following statements:
1. Preventive detention means to detain a person so that to prevent that person from committing any possible crime.
  2. A person can be taken to preventive custody for 6 months at the first instance.
  3. The detainee is entitled to know the grounds of his detention and the state cannot deny it under any circumstances.
- How many of the statements given above are correct?
- (a) Only one
  - (b) Only two
  - (c) All three
  - (d) None

16. Which among the following are the grounds for the Preventive detention in India?

1. Security of State
2. Maintenance of Public Order
3. Maintaining Essential Services

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

17. With reference to the National Education Policy 2020, consider the following statements:

1. It replaces the thirty-four-year-old National Policy on Education (NPE), 1986.
2. It replaces the 10+2 structure in school education with 5+3+3+4 structure covering ages 3-18.

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

18. Consider the following statements:

**Statement I:** The power to enact a law providing for preventive detention rests solely with the Parliament.

**Statement II:** An Advisory Board's recommendation is mandatory for detaining a person beyond three months under preventive detention.

Select the correct option using the codes given below

- (a) Both Statement I and Statement II are correct.
- (b) Both Statement I and Statement II are incorrect.
- (c) Statement I is correct, Statement II is incorrect.
- (d) Statement I is incorrect, Statement II is correct.

19. With reference to the laws for nomination to the Lok Sabha election, consider the following statements:

1. An elector above 25 years of age can contest Lok Sabha election from any constituency in India.
2. A candidate can file up to four nomination papers with different sets of proposers.

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. Article 244 A of the Indian Constitution deals with which of the following?

- (a) Power of the President to make regulations for certain Union territories.
- (b) Formation of an autonomous State comprising certain tribal areas in Assam.
- (c) Proclamation of Emergency.
- (d) Special Provisions for the State of Maharashtra

21. With reference to the Panchayati Raj in India, consider the following statements:

1. It came into force by the 73rd Constitutional Amendment Act.
2. Zila Panchayat is the most basic level of Panchayati Raj System.

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
22. Consider the following statements about Panchayati Raj in India:
1. Panchayati Raj institutions are mandated for every state in India with a three-tier structure.
  2. The Gram Sabha is the legislative body of the Panchayati Raj system at the village level.
  3. Reservation of seats in Panchayati Raj institutions is mandated for Scheduled Castes (SCs), Scheduled Tribes (STs), and Other Backward Classes (OBCs).
- Which of the following statements are correct?
- (a) 1 and 2 only  
(b) 1 and 3 only  
(c) 2 and 3 only  
(d) 1, 2, and 3
23. Consider the following statements regarding the Schedule Tribes of India:
1. The President through a public notification can declare the tribes or tribal communities as Schedule Tribes.
  2. The Constitution is silent about the criteria for the specification of a community as a Scheduled Tribe.
  3. The term scheduled tribes is nowhere defined in the constitution of India.
- Which of the statements given above is/are **not correct**?
- (a) 1 and 2 only  
(b) 2 only  
(c) 3 only  
(d) 2 and 3 only
24. Lily Thomas vs. Union of India Case 2013 recently seen in the news, it is related to?
- (a) Section 8(4) of the Representation of People Act, 1951  
(b) Section 69(a) of the Information Technology Act, 2000  
(c) Section 13 of The Right To Information Act, 2005  
(d) Section 124A of the Indian Penal Code, 1870
25. With reference to the Electronic Voting Machines (EVMs), which of the following statements is/are correct?
1. It was first used in 1982 in the Assembly constituency of Paravur in Kerala.
  2. It consists of a control unit and a balloting unit, connected by a cable.
- 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
26. With reference to the Human Rights, consider the following statements:
1. These are legal rights granted and protected by a government.
  2. These rights are considered universal, inalienable, and indivisible.
- 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

27. With reference to the Corporal Punishment, consider the following statements:

1. It is the use of physical force against a child as a 'corrective' form of enforcing discipline.
2. Right of Children to Free and Compulsory Education Act, 2009 expressly bans subjecting a child to mental harassment or physical punishment.

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 (Indian Polity & Constitution)

1. (b)

**In News:** Recently, the Association of Democratic Reforms (ADR) scrutinised the affidavits of the sitting MPs, and revealed several sitting MPs with criminal charges.

**Both the statement are not correct:**

- The Association for Democratic Reforms (ADR): It is an apolitical and non-partisan non-profit organisation in India that was established in 1999 by a group of professors from the Indian Institute of Management (IIM) Ahmedabad.
- It focuses on corruption and criminalization in the political process, empowerment of the electorate through greater dissemination of information relating to the candidates and the parties etc.

**Objectives:**

- To improve governance and strengthen democracy through continuous work in the area of **Electoral and Political Reforms**.

2. (c)

**Statement 1 is correct:**

- The National Green Tribunal (NGT): It is a statutory body that was set up under the National Green Tribunal Act in 2010.
  - It was **set up as per** recommendations of the Supreme Court, Law Commission and **India's international law obligations** to develop national laws on the environment and implement them effectively.

**Statement 2 is correct:**

- The NGT is not simply adjudicatory in nature. It performs vital roles that are **preventative, ameliorative, or remedial**.
- The NGT is **not bound by the procedure laid down under the Code of Civil Procedure (1908)**, but shall be **guided by principles of natural justice**.

**Statement 3 is correct:**

- Its orders are **binding** and it has power to grant relief in the form of compensation and damages to affected persons.

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

### 3. (b)

#### Prevention of Money Laundering Act (PMLA) 2002

- It was enacted in **January 2003** and the Act along with the **Rules** framed thereunder has come into force **with effect from 1st July 2005**.
- The Parliament enacted the PMLA as a result of **international commitment** to sternly deal with the **menace of money laundering** of proceeds of a crime having **transnational consequences** on the financial systems of the countries

#### Power to Enforcement Directorate (ED):

- The Act gives the government and the Enforcement Directorate (ED) virtually unbridled powers of summons, arrest, and raids.
- Despite having powers of investigation, the ED has not been classified as a 'police agency'. Hence statement 1 is incorrect.
- Besides, there is a lack of clarity about the ED's selection of cases to investigate.

#### Bails & the burden of proof:

- It makes bail nearly impossible while shifting the burden of proof of innocence on to the accused rather than the prosecution. Hence statement 2 is correct.
- The Court made it clear that the State has a compelling interest in imposing stringent bail conditions for economic offences.

### 4. (b)

#### In News:

- The Concurrent List (List-III) of Schedule VII of Indian Constitution includes a list of 52 items.
- The 42nd Amendment Act of 1976 transferred five subjects to the Concurrent List (List III) from the State List (List II), that include:
  - Education
  - Protection of Wild Animals and Birds
  - Forests
  - Administration of Justice
  - Weights & Measures
- The 'Extradition' and 'Post Office Savings Bank' are in the Union List (List I).

### 5. (a)

**Statement 1 is correct: Eligibility and Conditions for Couples:** A couple should procure **certificates of eligibility and essentiality** in order to have a child via surrogacy.

- The couple is deemed 'eligible' if they have been **married for five years**, the wife is aged between **23-50 years** and the husband is between **26-55 years**.

**Statement 2 is not correct: Eligibility to be a surrogate:** A surrogate mother has to be a close relative of the couple, a married woman with a child of her own, aged between 25-35 years, who has been a surrogate only once in her life.

- She must also possess a certificate of **medical and psychological fitness** for surrogacy.

### 6. (c)

**Option (a) is not correct:** NPPA is an independent body, but it doesn't fix prices for all drugs. Its focus is on essential and scheduled drugs.

**Option (b) is not correct:** NPPA's primary focus is on regulating drug prices, not promoting research and development.

**Option (c) is Correct:** NPPA uses a specific pricing mechanism to determine price ceilings for essential and scheduled drugs listed under the Drugs (Prices Control) Order (DPCO).

**Option (d) is not correct:** NPPA has the authority to impose penalties on pharmaceutical companies for violating pricing regulations.

## 7. (c)

**Context:** The Election Commission reviews the poll performance of recognised parties after every State Assembly election or general election to the Lok Sabha.

- The rules for recognition as a national party are specified by the Commission in para 6B of the Election Symbols (Reservation and Allotment) Order, 1968.

**About**

- A party becomes eligible to be accorded national status if it fulfils any of the following conditions:
  - It is recognised as a State party in at **least four States**.
  - It secures not less than 6% of the total votes polled in four or more States in the last Lok Sabha or Assembly elections, and in addition, gets at least **four of its members elected to the Lok Sabha**.
  - It wins **at least 2% of the total seats** in the Lok Sabha from not less than three States.

## 8. (c)

**News:** Section 144 of Crpc was imposed in Ladakh's Leh ahead of Sonam Wangchuk's 'Pashmina March'.

**Background**

- Sonam Wangchuk was also on hunger strike earlier for the demand of inclusion of Ladakh in the sixth schedule.
- **Sixth Schedule under Article 244** ensures autonomous governance in tribal areas in **Assam, Meghalaya, Tripura, and Mizoram** through autonomous district councils.

**Now, What is Pashmina March?**

- Inspired by Mahatma Gandhi's historic Salt March, the Pashmina March is against the alleged Chinese incursions into the ecological fragile areas of **Changthang region** of Ladakh and challenges faced by the shepherds of the region due to the absence of protection under the sixth schedule.

## 9. (b)

**News:** Recently, the Supreme Court has expanded the scope of Article 21 and Article 14 to include the "right against the adverse effects of climate change".

**What is Article 21 and Article 14?**

- Article 21 recognises the right to life and personal liberty while Article 14 indicates that all persons shall have equality before law and the equal protection of laws.

**How is Climate Change linked with Articles 21 and 14?**

- The right to health (which is a part of the right to life under Article 21) is impacted due to factors such as air pollution, shifts in vector-borne diseases, rising temperatures, droughts, shortages in food supplies due to crop failure, storms, and flooding.
- Similarly, if climate change and environmental degradation lead to acute food and water shortages in a particular area, poorer communities will suffer more than richer ones, and this will violate the right to equality under Article 14.

## 10. (b)

**In News :** The Supreme Court of India noted that the right to a healthy environment, safe from the ill-effects of climate change, was a **'fundamental human right'**.

- The court linked the right against climate change to *Articles 21 (right to life) and 14 (right to equality)*, stating that the **rights to life and equality could not be fully realised without a clean, stable environment**.
- It highlighted the **interconnection** between climate change and various human rights, including the right to health, indigenous rights, gender equality, and the right to development.
- The Supreme Court has previously recognized **sustainable development as an integral part of fundamental rights**.
  - It has stated that sustainable development cannot be allowed to be hampered by environmental degradation.

## 11. (b)

**In News:** Recently, the Supreme Court of India has provided significant relief to the Delhi Metro Rail Corporation (DMRC) by setting aside its 2021 judgement.

**Statement 1 is not correct:**

- A curative writ jurisdiction as a layer of appeal against a Supreme Court decision is **not prescribed in the Constitution**.
- It is a judicial innovation, designed for correcting 'grave injustices' in a ruling of the country's top court.
- The concept of a curative petition was first introduced by the Supreme Court of India in the case of *Rupa Ashok Hurra vs Ashok Hurra and Anr (2002)*.

**Statement 2 is correct:**

- A curative jurisdiction **can only be filed after a review plea** has already been dismissed by the Supreme Court.
- It must be first circulated to a Bench of three senior-most judges, and the judges who passed the concerned judgement, if available.
- If the majority of the judges on this Bench agree that the matter needs hearing, then it would be sent to the same Bench (as far as possible) which passed the judgement affecting the petition.

## 12. (b)

**News:** The Maharashtra State Election Commission has sent a letter to all political parties saying that their star campaigners can only be from their party and the leaders of other parties cannot feature on that list.

**Who is a star campaigner?**

- There is **no law that defines** who is a star campaigner. It is a status that political parties contesting an election give to certain big names who the parties feel have more vote-fetching ability in the polls than others.
- A **recognised political party can have 40** star campaigners and an **unrecognised** (but registered) political party can have 20.
- The list of star campaigners has to be communicated to the Chief Electoral Officer and Election Commission within a week from the date of notification of an election.
- The expenditure incurred on campaigning by such notified star campaigners is exempt from being added to the election expenditure of a candidate.



**13. (b)**

**Statement 1 is not correct:** When a vote is cast, the VVPAT machine, which is attached to the **ballot unit (BU)** of the **Electronic Voting Machines (EVMs)**, prints out a slip of paper with the voter's choice indicated on it.

- The VVPAT was used for the first time in the **Noksen Assembly constituency of Nagaland** in 2013, after which the EC decided to introduce VVPATs in a phased manner.

**Statement 2 is correct:** From 2017, 100% of VVPATs began to be used in polls, and the **2019 Lok Sabha elections** became the first general election to have **100% of EVMs** being attached to VVPATs.

**14. (d)**

**Both the statements are incorrect: First Information Report (FIR)**

- It is a **report of information** that reaches the police first at commission of a cognizable offence.
  - The complaint is generally lodged with the police by the victim or by someone on his/her behalf.
  - Anyone can report the commission of a cognizable offence **either orally or in writing**. Even a telephonic message can be treated as an FIR.
- **Section 154 of the Code of Criminal Procedure (CrPC), 1973**, deals with the FIR. However the term is not defined in the act.
- When a police station receives a complaint regarding an alleged offense that has been **committed in the jurisdiction of another police station**, it registers an FIR and then transfers it to the relevant police station for further investigation. This is called a **Zero FIR**.
- The provision of Zero FIR came up after the recommendation in the report of the **Justice Verma Committee**, constituted after the 2012 Nirbhaya case.

**15. (a)**

**Statement 1 is correct: Preventive detention** means to detain a person so that to **prevent that person** from committing any possible crime.

- It is an action taken by the administration **on the grounds of the suspicion** that some wrong actions may be done by the person concerned which will be prejudicial to the state.

**Statement 2 and 3 are not correct:** A person can be taken to preventive custody **only for 3 months at the first instance**. If the period of detention is extended beyond 3 months, the case must be **referred to an Advisory Board**.

- The detainee is **entitled to know the grounds of his detention**. The state, however, **may refuse to divulge the grounds of detention** if it is in the **public interest to do so**.

**16. (d)**

**Preventive detention** means to detain a person so that to **prevent that person** from committing any possible crime.

- It is an action taken by the administration **on the grounds of the suspicion** that some wrong actions may be done by the person concerned which will be prejudicial to the state.
- The grounds for Preventive detention are:
  - Security of state, maintenance of public order,
  - Maintenance of supplies and essential services and defense,
  - Foreign affairs or security of India.

**17. (c)**

**Both the statements are correct:** The NEP 2020 is the first education policy of the 21st century and replaces the thirty-four-year-old **National Policy on Education (NPE), 1986**.

- The NEP 2020 is founded on the five guiding pillars of Access, Equity, Quality, Affordability and Accountability.
- This policy envisages that the extant 10+2 structure in school education will be modified with a new pedagogical and curricular restructuring of 5+3+3+4 covering ages 3-18.

## 18. (a)

**Statement I is Correct:** The Constitution of India, under Article 22(3), empowers the Parliament to enact laws providing for preventive detention.

**Statement II is Correct:** Article 22(4) mandates that if a person is detained under a preventive detention law for more than three months, the case must be placed before an Advisory Board.

## 19. (c)

**Context:** The BJP's candidate from the Surat Lok Sabha constituency in Gujarat has been **declared elected unopposed**.

- This follows the **rejection of the nomination paper** of the candidate set up by the Congress party and the withdrawal of nominations by other candidates.

**What is the law for nomination?**

- Section 33 of the Representation of the People Act, 1951 (RP Act) contains the requirements for a valid nomination.
- As per the RP Act, an **elector above 25 years of age** can **contest Lok Sabha** election from any constituency in India.
- The proposer(s) of the candidate should however be elector(s) from that respective constituency where the nomination is being filed.
- In case of a **recognised party (national or State)**, the candidate needs to have one proposer.
- Candidates set up by **unrecognised parties** and independents need to be subscribed by **ten proposers**.
- A candidate can file up to four nomination papers with different sets of proposers.
  - This is to enable the acceptance of nomination of a candidate even if one set of nomination papers is in order.

## 20. (b)

**Article 244 (a)** was inserted by **The Constitution (Twenty-second Amendment) Act, 1969**, which enabled Parliament to pass an Act to **“form within the State of Assam an autonomous State** comprising (whether wholly or in part) all or any of certain specified tribal areas”, including Karbi Anglong.

- This autonomous state would have its own Legislature or Council of Ministers or both.

## 21. (a)

**Statement 1 is correct:** In 1993, by the **73rd Constitutional Amendment Act**, the Panchayat system came to be implemented in the rural areas to allow for development to happen at grassroot level.

**Statement 2 is not correct: There are three levels:**

- **Gram Panchayat:** This is the village council, the most basic level.
- **Block Panchayat:** This council looks after a group of villages.
- **Zila Panchayat:** This is the district council, overseeing a larger area.

## 22. (b)

**Statement 1 is correct:** The 73rd Amendment mandates a three-tier Panchayati Raj system (Gram Panchayat, Panchayat Samiti, Zila Parishad) for every state in India, with exceptions for states with a population less than 20 lakh which may not have the Panchayat Samiti tier.

**Statement 2 is not correct:** The Gram Sabha is a meeting of all adult members of a village, considered the foundation of Panchayati Raj. It is not the legislative body but plays a crucial role in planning and monitoring village development activities.

**Statement 3 is correct:** The Constitution mandates reservation of seats in Panchayati Raj institutions for Scheduled Castes (SCs) and Scheduled Tribes (STs) in proportion to their population in the Panchayat area. Additionally, some states provide reservations for Other Backward Classes (OBCs) as well.

**23. (c)**

**Schedule Tribes of India**

- **About:** As per Article 342 of the Constitution, the President through a public notification can declare the tribes or tribal communities or part of or groups within these tribes and tribal communities as Schedule Tribes. **Hence statement 1 is correct.**
- **Criteria:** The Constitution is silent about the criteria for the specification of a community as a Scheduled Tribe. **Hence statement 2 is correct.**
  - Primitiveness, geographical isolation, shyness, and social, educational & economic backwardness are the traits that distinguish Scheduled Tribe communities from other communities.
- **Article 366 (25):** It defined scheduled tribes as "**such tribes or tribal communities** or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this constitution". **Hence statement 3 is not correct.**

**24. (a)**

In the landmark 2013 ruling in 'Lily Thomas v Union of India', the Supreme Court struck down **Section 8(4) of the RPA** as unconstitutional.

- Under the **RPA, Section 8(4)** stated that the disqualification takes effect only "after three months have elapsed" from the date of conviction.
- Within that period, lawmakers could file an appeal against the sentence before the High Court. It had allowed a three-month period within which to appeal. Disqualification was not to take effect during this period; when the appeal is admitted, disqualification would depend on the final outcome of the appeal.

**25. (c)**

**Both the Statements are correct.**

**What are Electronic Voting Machines (EVMs)?**

- It is a device used to electronically record and count votes cast in elections.
- EVMs were first used in 1982 in the Assembly constituency of Paravur in Kerala in 50 out of 123 booths.
- EVM has two parts, it consists of a 'control unit' and a 'balloting unit', connected by a 5-meter cable.
- The control unit is with the Election Commission-appointed polling officer and it is the brain of the EVM.
- The balloting unit is in the voting compartment into which the voter enters to cast the vote in secret by pressing the button against the name and symbol of the candidate of her choice.

**26. (b)**

**Statement 1 is not correct:** **Human rights** are fundamental rights and freedoms that are inherent to all human beings, regardless of nationality, ethnicity, gender, religion, or any other status.

- **Human rights are different from the Civil rights** that are created and defined by laws within a specific nation.

- **Civil rights** are legal rights granted and protected by a government, and they may change over time as laws are amended or updated.

**Statement 2 is correct:** These rights are considered **universal, inalienable, and indivisible**, forming the foundation for **human dignity, equality, and justice**.

**27. (c)**

**Both the statements are correct:** Corporal punishment is the **use of physical force against a child** as a 'corrective' form of enforcing discipline.

- Usually, teachers who are unable to discipline their students take recourse to physical assault.
- Section 17 (1) of the Right of Children to Free and Compulsory Education Act, 2009 expressly **bans** **subjecting a child to mental harassment or physical punishment**.
- **Cruelty to children is also prohibited under the Juvenile Justice (Care and Protection of Children) Act, 2000.**
  - These laws hold teachers and adults liable for assault or Corporal punishment of children.

# Geography

1. The decades-long dispute over the Nagorno-Karabakh region primarily involves:
  - (a) Ethnic rivalry between Armenians and Azerbaijanis for control of natural resources.
  - (b) Territorial claims by Armenia on historical Armenian lands within Azerbaijan.
  - (c) Competition between regional powers, Russia and Turkey, for influence in the Caucasus.
  - (d) All of the above.
2. Rogue waves, also known as freak waves or monster waves, are a maritime phenomenon. What is a characteristic feature of rogue waves?
  - (a) They are exceptionally tall and can occur unexpectedly even in calm weather conditions.
  - (b) They always occur in groups or series.
  - (c) They are easily predicted using conventional weather forecasting methods.
  - (d) They are primarily a threat to large cargo ships and not smaller vessels.
3. With reference to the Mount Etna, consider the following statements:
  1. It is located in Italy and is Europe's largest active volcano.
  2. It was included in the list of UNESCO World Heritage Sites in 2013.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. Consider the following statements:
  1. Soil Organic Carbon includes plant and animal waste, microbes and microbial byproducts.
  2. Soil Inorganic Carbon plays a role in nutrient cycling.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. Which of the following countries shares borders with Botswana?
  1. Zambia
  2. Angola
  3. South Africa
  4. Namibia
  5. KenyaSelect 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) 3, 4 and 5 only
6. Which among the following tectonic plates converge at Afar Triangle?
  1. Nubian plates
  2. Asian plates

3. Somali plates
4. Arabian plates

Select the correct answer using the code given below:

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

7. Consider the following statements with respect to “Kallakkadal”

1. It is a term used by the fishermen in the state of Andhra Pradesh.
2. It is an annual harvest and cultural festival related to Hinduism.

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

8. Which among the following states of India shares a border with Bhutan ?

1. Arunachal Pradesh
2. Nagaland
3. West Bengal
4. Mizoram

Select the correct answer using the code given below:

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

9. The term “Kallakkadal”, recently seen in the news, is related to:

- (a) Tamil Inscription
- (b) Flooding Event
- (c) Ancient Port City
- (d) Religious Site

10. Consider the following statements about Glacial Lake Outburst Floods (GLOFs):

1. GLOFs are sudden and catastrophic floods caused by the breaching of moraine dams holding glacial lakes.
2. Climate change-induced glacial retreat is a major factor leading to the formation of new and potentially dangerous glacial lakes.
3. GLOFs primarily affect the immediate vicinity of the glacial lake and have minimal downstream impact.
4. Early warning systems and evacuation plans for downstream communities are essential measures for mitigating GLOF risks.

Which of the statements given above are correct?

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

11. Swell waves, which can travel long distances and impact coastlines, are associated with:
- Local windstorms and choppy seas near the source of the wind.
  - Underwater earthquakes or volcanic eruptions near the coast.
  - Powerful distant storms that generate wind waves which propagate outwards.
  - Daily tidal fluctuations due to the gravitational pull of the moon and sun.
12. The 'Hualien County', a place sometimes appeared in the news, is located in:
- Turkey
  - Philippines
  - Australia
  - Taiwan
13. Consider the following:
- Australian
  - Philippine
  - Eurasian
  - Juan de Fuca
  - Nazca
- Which of the above tectonic plates are the reason for the recent earthquake in Taiwan?
- 1 and 2 only
  - 2 and 3 only
  - 2 and 4 only
  - 2 and 5 only
14. World's First 3D-Printed Mosque was built in Saudi Arabia.
- In context of the above statement, which of the following countries shares borders with Saudi Arabia?
- Cuba
  - Iran
  - Yemen
  - Oman
  - Jordan
- Select the correct answer using the code given below:
- 1, 2, 3 and 5 only
  - 1, 3 and 4 only
  - 2, 4 and 5 only
  - 3, 4 and 5 only
16. With reference to Romania, which of the following statements is/are correct?
- The Caspian Sea forms the border of Romania in the south-east.
  - The Danube River travels through the territory of Romania.
- Select the correct answer using the code given below:
- 1 only
  - 2 only
  - Both 1 and 2
  - Neither 1 nor 2

17. The Port of Baltimore was recently seen in the news due to the collapse of Francis Scott Key Bridge. In context of the above statement, Port of Baltimore is located in which of the countries?
- Canada
  - Denmark
  - United States of America
  - Mexico
18. Consider the following statements:
- The annular solar eclipse happens when the Moon is at its farthest point from Earth and does not completely cover the Sun.
  - The total solar eclipse occurs when the Moon completely blocks the Sun, allowing observers in the path of totality to see the Sun's corona.
- Which of the statements given above is/are correct?
- 1 only
  - 2 only
  - Both 1 and 2
  - Neither 1 nor 2
19. With reference to the *Polar Vortex of Earth*, consider the following statements:
- It refers to the counterclockwise flow of air that helps keep the colder air near the Poles.
  - It exists near the poles throughout the year, but it weakens in summer and strengthens in winter.
- Which of the statements given above is/are correct?
- 1 only
  - 2 only
  - Both 1 and 2
  - Neither 1 nor 2
20. Which of the following cloud types is known for its thin and wispy appearance, often curving with the wind at high altitudes in the atmosphere?
- Stratus clouds
  - Cirrus clouds
  - Altostratus clouds
  - Cumulonimbus clouds
21. With reference to the Andaman and Nicobar Islands, which of the following statements is/are correct?
- Ten Degree Channel separates the Andaman Islands from the Nicobar Islands.
  - Port Blair, the capital city, is located in the North Andaman.
- Select the correct answer using the code given below:
- 1 only
  - 2 only
  - Both 1 and 2
  - Neither 1 nor 2
22. The Andaman and Nicobar Islands, a strategically important archipelago in the Bay of Bengal. Consider the following statements about these islands:
- The Andaman and Nicobar Islands are geographically contiguous, forming a single island chain.
  - The indigenous Jarawa tribe of the Andaman Islands is the only remaining Negrito tribe in Asia.
  - Due to their proximity to mainland India, the islands experience a tropical monsoon climate throughout the year.



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) 2 only

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

- 1. It is the third-longest river in Europe after the Volga and the Danube.
- 2. It serves as a natural boundary between Europe and Asia.

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

24. Consider the following pairs:

<i>Volcanic Mountains</i>	:	<i>Countries</i>
1. Stromboli	:	Italy
2. Vesuvius	:	France
3. Whakaari	:	New Zealand
4. Momotombo	:	Nicaragua

How many of the pairs given above is / are correctly matched?

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

25. With reference to the Siachen Glacier, which of the following statements is/are correct?

- 1. The Glacier is located in the eastern Karakoram range in the Himalayas.
- 2. The glacier is the source to the Shyok River.

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

26. With reference to Lake Kariba, which of the following statements is/are correct?

- 1. It is the world's largest artificial lake and reservoir by volume.
- 2. It is located along the border between Zambia and Zimbabwe.

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

27. With reference to the Jiadhal river, which of the following statements is/are correct?

- 1. The river originates from the Khasi hills of Meghalaya.
- 2. The river is a sub-tributary of the Brahmaputra River.

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

28. With reference to The Malacca Strait, which of the following statements is/are correct?

1. The Strait connects the Andaman Sea and the South China Sea.
2. The Strait separates the Malay Peninsula and Sumatra Island.

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

29. The '*Artsakh region*' sometimes appeared in the news, is in context of:

- (a) Arab–Israeli Conflict
- (b) Russia–Ukraine War
- (c) Korean Conflict
- (d) Armenia–Azerbaijan Conflict

30. 'Mount Ruang volcano', recently seen in the news, is located in which of the following countries?

- (a) Japan
- (b) Indonesia
- (c) Philippines
- (d) Malaysia

31. The Ring of Fire is a prominent geological feature associated with:

- (a) Divergent plate boundaries and mid-ocean ridges.
- (b) Convergent plate boundaries and subduction zones.
- (c) Transform plate boundaries and earthquake faults.
- (d) Continental collisions and mountain ranges.

32. Ross Ice Shelf, recently seen in the news, belongs to which of the following Ocean?

- (a) Pacific Ocean
- (b) Atlantic Ocean
- (c) Southern Ocean
- (d) Arctic Ocean

33. With reference to Rwanda, which of the following statements is/are correct?

1. It is a landlocked country in the Great Rift Valley of Central Africa.
2. It is located a few degrees south of the Tropic of Capricorn.

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

34. With reference to Volcanoes, Consider the following pairs:

- | Volcanoes      | : | Place         |
|----------------|---|---------------|
| 1. Mount Etna  | : | Italy         |
| 2. Kīlauea     | : | Hawaii Island |
| 3. Mount Ruang | : | Indonesia     |

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

35. The '*Carnation Revolution*' sometimes appeared in the news, is related to which of the following:

- (a) Morocco
- (b) Portugal
- (c) France
- (d) Ireland

36. Which among the following are the causes for the flood?

- 1. Deforestation
- 2. Urbanization
- 3. Improper waste disposal
- 4. Climate change

Select the correct answer using the code given below:

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

37. '*Atacama Desert*' recently seen in the news, is located in which of the following countries?

- (a) Chile
- (b) Sudan
- (c) Egypt
- (d) Syria

38. Bonin Islands, recently seen in the news belongs to:

- (a) China
- (b) Philippines
- (c) Indonesia
- (d) Japan

39. With reference to heatwaves in India, consider the following statements:

- 1. The India Meteorological Department (IMD) declares a heatwave when the maximum temperature of a station reaches at least 40°C for plains and at least 30°C for hilly regions.
- 2. Heatwaves are more common in coastal areas compared to inland areas.
- 3. Prolonged heat waves can have a significant negative impact on agricultural productivity.
- 4. Heatstroke is a potential health risk associated with heatwaves.

Select the code that indicates which statements are CORRECT:

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

## Explanation (Geography)

### 1. (d)

The Nagorno-Karabakh conflict is a complex issue with multiple contributing factors. Here's why all the options are relevant:

**Ethnic rivalry:** The region is populated mainly by Armenians, but it is internationally recognized as part of Azerbaijan. This ethnic difference fuels tensions and territorial claims.

**Territorial claims:** Armenians have historical and cultural ties to Nagorno-Karabakh, and some Armenians advocate for unification with Armenia.

**Regional power dynamics:** Both Russia and Turkey have historical and geopolitical interests in the Caucasus region, and the Nagorno-Karabakh conflict becomes entangled with these broader rivalries.

### 2. (a)

Rogues, also known as 'extreme storm waves', are those waves which are greater than twice the size of surrounding waves, are very unpredictable, and often come unexpectedly from directions other than prevailing wind and waves.

- Rogue waves emerge from strong wind forces and unpredictable waveform patterns. They are often **steep-sided** with unusually **deep troughs**.

### 3. (c)

Both the statements are correct.

#### In News

- Volcanic vortex rings emerged from a new pit crater on the north side of the southeast crater of the Etna Volcano in Sicily, Italy.

#### About Mount Etna

- It is an active stratovolcano volcano on the east coast of Sicily, the largest island in the Mediterranean Sea.
- Etna's peak is the highest in Italy south of the Alps, and it is **Europe's largest** and one of the most active volcanoes of the world
- Its summit has five craters, which are responsible for most of the volcano's eruptions.
- It lies above the convergent plate margin between the African Plate and the Eurasian Plate.
- It has been a **UNESCO World Heritage Site** since 2013.



4. (a)

In News:

- Carbon in soil can be stored in the form of **Soil Inorganic Carbon** or **Soil Organic Carbon**.

Statement 1 is correct:

- Soil Organic Carbon plays a role in nutrient cycling, is the main component of soil organic matter such as plant and animal waste, microbes and microbial byproducts.

Statement 2 is not correct: **Soil Inorganic Carbon** includes mineral forms of carbon like calcium carbonate produced by weathering parent material in soil or from the reaction of soil minerals with atmospheric carbon dioxide.

5. (b)

In News: Botswana president offered 20,000 elephants to Germany.

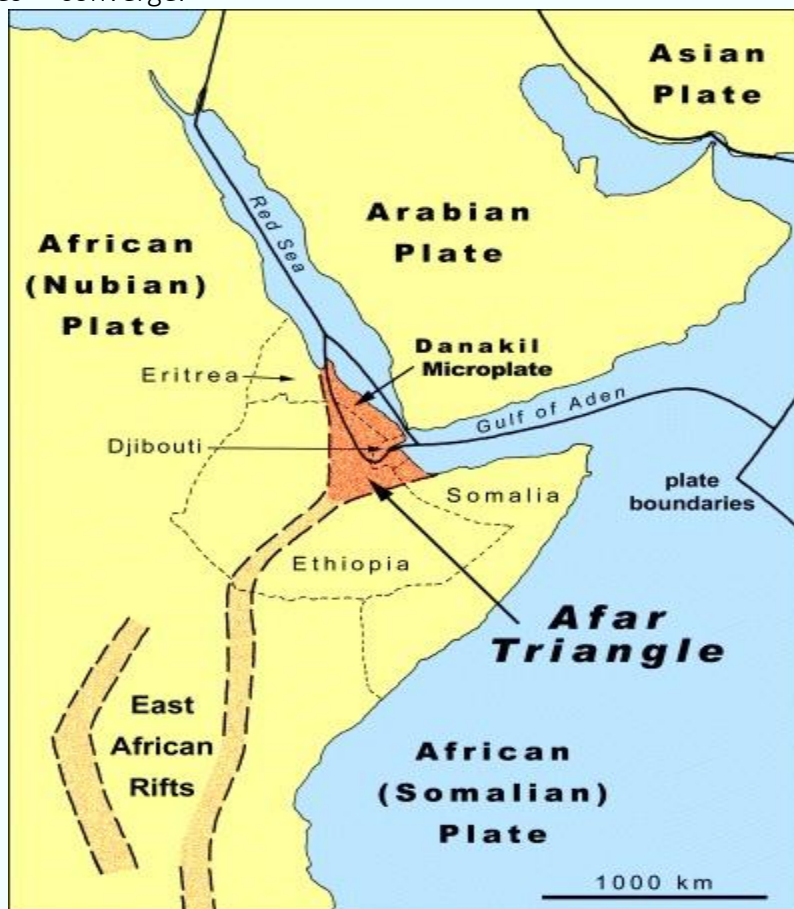
About Botswana

- It is a land-locked country dominated in geographical terms by the Kalahari Desert.
- It is situated in the Southern African region and about two-thirds of Botswana lies within the Tropics; it is bisected by the Tropic of Capricorn.
- It is bordered by **Zambia** and Zimbabwe to the northeast, **Namibia** to the north and west, and **South Africa** to the south and southeast.

6. (b)

The Afar Triangle is also known as the **Afar Depression**, located in the **Horn of Africa**.

- The Afar Triangle is a geological depression where three tectonic plates—the Nubian, Somali, and Arabian plates—converge.



7. (d)

Statements 1 and 2 are not correct: Kallakkadal is a term used by the fishermen in the state of Kerala in southwest of India to refer to the flash flooding events

- In Malayalam (the local language of Kerala, India), Kallan means thief and Kadal means Sea. In spoken language, these words were combined and pronounced as Kallakkaadal, meaning ocean that arrives as a thief.
- The terminology Kallakkadal was formally approved by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2012). It is a flash flooding event without any precursors or any kind of local wind activity to give advance warning to the coastal population.

8. (b)

Arunachal Pradesh and West Bengal

Context

- Prime Minister Modi was on a two-day state visit to Bhutan as part of India's 'Neighbourhood First' Policy.

Geographical boundaries

- Bhutan shares its border with four Indian states, Assam, Arunachal Pradesh, West Bengal and Sikkim with a length of 699 km and serves as a buffer between India and China.

9. (b)

**News:** Swell waves have flooded the coastal areas of Kerala.

- Such flooding events are called Kallakkadal in Malayalam.
- UNESCO formally accepted term "Kallakkadal" for scientific use in 2012.

What are Swell Waves?

- They are high sea waves that are formed by an ocean swell.
- Ocean swells occur due to distant storms like hurricanes and not due to the local winds.
- During such storms, huge energy transfer takes place from the air into the water, leading to the formation of very high waves.
- Such waves can travel thousands of kilometers from the storm center.

10. (b)

**Statement 1 is correct:** GLOFs occur when the natural dams formed by moraine (glacial debris) fail, releasing the water stored in glacial lakes.

**Statement 2 is correct:** Rapid glacial retreat due to climate change is leading to the formation of numerous glacial lakes, some in precarious locations with weak moraine dams, increasing the risk of GLOFs.

**Statement 3 is not correct:** GLOFs can have devastating impacts downstream. The sudden release of large volumes of water can trigger flash floods, debris flows, and erosion, causing widespread damage to infrastructure and settlements.

**Statement 4 is correct:** Due to the unpredictable nature of GLOFs, early warning systems to monitor lake levels and potential dam breaches are crucial. Additionally, evacuation plans and community preparedness measures are essential to minimize casualties and property damage.

11. (c)

Swell waves are generated by powerful distant storms, often far out at sea. The wind from these storms transfers energy to the water, creating waves that travel long distances with a smoother, rolling motion.

- The wind waves created by local windstorms, which are typically choppy and don't travel far.
- The tsunamis generated by underwater events, which are different from swell waves.

- Swell waves are generated by powerful distant storms, often far out at sea. The wind from these storms transfers energy to the water, creating waves that travel long distances with a smoother, rolling motion.
- Option (d) describes tides, which are the rise and fall of sea level due to gravitational forces, not wind-generated waves like swell waves.

## 12. (d)

**In News:** Recently, Taiwan experienced its strongest earthquake in nearly 25 years.

- The most powerful earthquake in the last 25 years occurred recently, resulting in significant damage to buildings, infrastructure and loss of lives.
  - **Magnitude: 7.4** (according to the United States Geological Survey); and **7.2** (according to Taiwan's Central Weather Administration)
  - **Epicentre:** Off the coast of **Hualien County**.

## 13. (b)

**News:** A 7.2 magnitude earthquake struck Taiwan.

- This was the strongest quake in 25 years to hit Taiwan and is likely to impact the global supply of tech components such as display panels and semiconductors.

**Why is Taiwan prone to earthquakes?**

- Taiwan lies along the Pacific “Ring of Fire” — where 90% of the world’s earthquakes take place.
- Taiwan experiences earthquakes due to the interactions of two tectonic plates — the **Philippine Plate and the Eurasian Plate**.

**What is the Ring of Fire?**

- The Ring of Fire (also known as the Circum-Pacific Belt) is a roughly 25,000-mile chain of volcanoes and seismically active sites that runs along the Pacific Ocean.
- The Ring of Fire traces the meeting points of numerous tectonic plates, including the Eurasian, North American, Juan de Fuca, Cocos, Caribbean, Nazca, Antarctic, Indian, Australian, Philippine, and other smaller plates, which all encircle the large Pacific Plate.

## 15. (d)

**Saudi Arabia** is the largest country in the Arabian Peninsula

- It is located in the southwest corner of Asia
- It is surrounded by the Red Sea on the West, by **Yemen and Oman** on the South, the Arabian Gulf and the United Arab Emirates and Qatar on the East, and **Jordan, Iraq and Kuwait** on the North.
- Riyadh is the capital city of Saudi Arabia.

## 16. (b)

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

**In News**

- Research center in Romania has developed the world's most powerful laser.
- **About Romania:** It neighbors to the North of Ukraine, to the East on the Republic of Moldova, Ukraine, and the Black Sea, to the South on Bulgaria, to the South-West on Serbia, and to the West on Hungary.





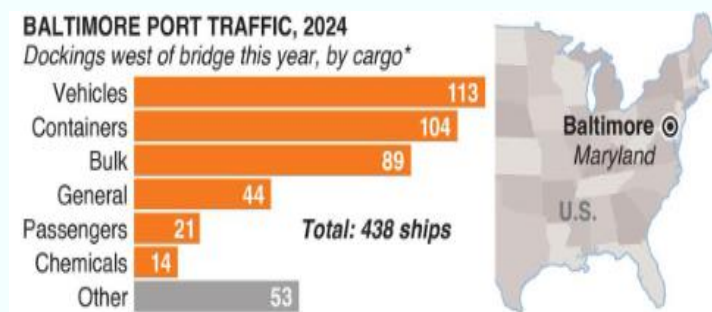
- **Bucharest**, the capital city. **The Black Sea** forms the border of Romania in the south-east along 245 km.



- **Geographical Features:**
  - In the center lies the Plateau of **Transylvania**, surrounded by the chains of the **Carpathians Mountains**.
  - The highest elevation in Romania is the **Moldoveanu Peak**.
  - The **Danube River** travels through Romanian territory.

## 17. (c)

- **Port of Baltimore** It is strategically located in the Mid-Atlantic region of the **U.S. east coast**.



- It is one of the busiest harbours in the U.S
- It is the ninth largest U.S. port by overall trade volume.

## 18. (c)

In News: Statement 1 is correct:

- **Annular Solar Eclipse:** It happens when the Moon is at its farthest point from Earth and does not completely cover the Sun, leaving a ring of sunlight visible.



Statement 2 is correct:

- **Total Solar Eclipse** occurs when the Moon passes directly between the Earth and the Sun, completely blocking the Sun's light and casting a shadow on certain parts of the Earth.
- It occurs when the Moon completely blocks the Sun, allowing observers in the path of totality to see the Sun's corona.

19. (c)

**In News:** Recently, the atmospheric scientists have noticed the development of the polar vortex and characterised it as one of the biggest events in the last four decades.

- **Earth's Polar Vortex:** It is a large **area of low pressure and cold air** that surrounds both of the Earth's poles.

Statement 1 is correct:

- The **Stratospheric Polar Vortex** forms in the winter hemisphere when the Earth's pole is pointed away from the sun.
- The term 'vortex' refers to the **counterclockwise flow of air** that helps keep the colder air near the Poles.

Statement 2 is correct:

- It exists near the poles throughout the year, but it weakens in summer and strengthens in winter.
  - It is located in the polar stratosphere, above the layer of the atmosphere (the troposphere) where most weather, including the jet stream, occurs.

20. (b)

Cirrus clouds are high-altitude clouds characterized by their delicate, thin, and wispy appearance. They often take on unique shapes as they drift with the upper-level winds, providing an awe-inspiring spectacle in the sky.

21. (a)

Statement 1 is correct and Statement 2 is not correct.

**Andaman and Nicobar Islands**

- **Location:** The islands are located 1,300 km southeast of the Indian mainland in the Bay of Bengal.
  - It extends from 6° 45' N to 13° 41' N and from 92° 12' E to 93° 57' E.
- This archipelago is composed of more than 500 big and small islands, which are divided into two distinct groups of islands – **The Andaman Islands and the Nicobar Islands**.
  - '**Ten Degree Channel**' separates the Andaman Islands in the north from the Nicobar Islands in the south.

**The Andaman Islands**

- These islands are divided into three major sub-groups – **North Andaman, Middle Andaman, and South Andaman**.
- The capital city of the Andaman & Nicobar Islands **Port Blair** is located in **South Andaman**.

22. (d)

**Statement 1 not correct:** The Andaman and Nicobar Islands are actually two distinct island groups (Andaman Islands and the Nicobar Islands) separated by the Ten Degree Channel. The capital of this territory is the Andamanese town of Port Blair. There are 836 Islands/Islets/Rocky Outcrops in the territory, of which only some 38 are permanently inhabited.

- **Statement 2 is correct:** The Jarawa tribe is one of the indigenous Andamanese tribes and is indeed considered the only remaining Negrito tribe in Asia. Negritos are an indigenous people group characterized by dark skin and short stature.
- **Statement 3 is not correct:** While the islands have a tropical climate, they experience a seasonal variation with a dry season (December to April) and a wet season (May to November) due to the influence of the monsoons.

**23. (c)**

**Statement 1 is correct:**

- **The Ural River** originates in the southern Ural Mountains.
- It embarks on a journey of 2,428 kilometres, making it the **third-longest river in Europe** after the Volga and the Danube.

**Statement 2 is correct:**

- **Ural River** is historically known as the Yaik, is a significant geographical feature that courses through Russia and Kazakhstan.
- It serves as a **natural boundary between Europe and Asia**, marking it as a geographical landmark of immense importance.

**24. (c)**

**In News :** Recently, **Mount Etna**, one of the most active volcanoes in the world, has been sending up almost perfect rings of smoke into the air, termed as ‘volcanic vortex rings’.

- The phenomenon of volcanic vortex rings was first observed at Etna and Vesuvius in Italy in 1724.
- In more recent times, volcanic vortex rings have been observed at volcanoes such as *Redoubt in Alaska, Tungurahua in Ecuador, Pacaya in Guatemala, Eyjafjallajökull and Hekla in Iceland, Stromboli in Italy, Aso and Sakurajima in Japan, Yasur in Vanuatu, Whakaari in New Zealand, and Momotombo in Nicaragua.*

**25. (a)**

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

**Siachen Glacier**

- The 78 km long Glacier is located in the **eastern Karakoram range** in the Himalayas.
- It is just northeast of the point NJ9842 where the Line of Control between India and Pakistan ends.
- It is the **longest glacier in Karakoram** and second-longest in the world’s non-polar areas after **Fedchenko Glacier** in Tajikistan.
- Siachen glacier is a source to the Nubra River
- The Shyok River originates at the Rimo Glacier.

**26. (c)**

**Both the Statements are correct.**

**Context**

- Water levels at Lake Kariba have dropped to just 13.52% of its capacity because of the latest El Niño drought.

**About**

- Lake Kariba is the world's largest artificial lake and reservoir by volume.
- Location: It was formed by damming the Zambezi River in the Kariba Gorge in central Africa.
  - It lies 1,300 kilometers upstream from the Indian Ocean, along the border between **Zambia and Zimbabwe.**

27. (b)

Statement 1 is not correct and Statement 2 is correct.

**Jiadhal River**

- The **Jiadhal River** is a northern **sub-tributary** of the Brahmaputra River in the Indian state of Assam.
- The river originates from the hills of **Arunachal Pradesh**.
- The Jiadhal river flows through the Dhemaji district of Assam and takes the name of **Kumotiya River** from Gogamukh.
- The river finally joins **Subansiri river**, a major tributary of Brahmaputra River.

28. (c)

Both the Statements are correct.

**Malacca Strait**

- The **Malacca Strait** is very close to the islands of Andaman and Nicobar.
- The Strait connects the Andaman Sea and the South China Sea.
- The Strait separates the Malay Peninsula and Sumatra Island.

29. (d)

**In News:** Recently, it was found that the Russian peacekeepers started withdrawal from Nagorno - Karabakh region amid Russia - Ukraine conflict.

- **Nagorno - Karabakh Region**, also known as **Artsakh in Armenian**, is rugged highland, often referred to as the 'garden in the mountains', located within the **internationally recognized territory of Azerbaijan**.
- It is predominantly populated by ethnic Armenians and has been the centre of a protracted **conflict between Armenia and Azerbaijan**.

30. (b)

**News:** A tsunami alert was issued in Indonesia after multiple eruptions of the Mount Ruang volcano.

**About Mount Ruang volcano**

- It is the southernmost stratovolcano in the Sangihe Islands arc, North Sulawesi, Indonesia. It has a history of eruptions since 1808.
- Stratovolcanoes are typically conical and relatively steep-sided due to the formation of viscous, sticky lava that does not flow easily. It often produces explosive eruptions due to gas build-up in the magma.

31. (b)

The Ring of Fire is a horseshoe-shaped belt around the Pacific Ocean characterized by frequent volcanic eruptions and earthquakes. These phenomena occur due to convergent plate boundaries, where oceanic plates subduct (sink) beneath continental plates. Divergent plate boundaries (mid-ocean ridges) are associated with seafloor spreading, not subduction and volcanic activity. Transform plate boundaries primarily cause horizontal movements and earthquakes, not subduction or volcanoes.

Continental collisions form mountain ranges but are not directly linked to the Ring of Fire's volcanic activity. Therefore, the correct option is (b).

32. (c)

**Southern Ocean**

**Context**

- Recently researchers discovered that the Ross Ice Shelf makes sudden jumps twice a day.

## About

- The Ross Ice Shelf is the largest ice shelf in Antarctica, about the same size as the country of France.
- It is located in the Ross Sea and extends into the Southern Ocean.
- The ice shelf is named after British explorer Sir James Clark Ross, who discovered it in the 19th century.

### 33. (a)

Statement 1 is correct and Statement 2 is not correct.

#### Context

- The Safety of Rwanda (Asylum and Immigration) Bill 2023, is passed by the government of the United Kingdom.

#### Rwanda

- Rwanda is a landlocked country in the Great Rift Valley of Central Africa, where the African Great Lakes region and Southeast Africa converge.
- It is located a few degrees south of the **Equator**.
- **Rwanda is bordered** by Uganda, Tanzania, Burundi, and the Democratic Republic of the Congo.

### 34. (c)

All three pairs are correctly matched.

#### Mount Etna

- Mount Etna, or simply Etna, is an active stratovolcano on the east coast of Sicily, Italy.
- It is Europe's most active volcano and one of the largest in the world.

#### Kīlauea

- Kīlauea is an active shield volcano in the Hawaiian Islands.
- The volcano is between 210,000 and 280,000 years old and emerged above sea level about 100,000 years ago.
- Historically, it is the most active of the five volcanoes that together form the island of Hawaii.

#### Mount Ruang

- It is the southernmost stratovolcano in the Sangihe Islands arc, North Sulawesi, Indonesia. It has a history of eruptions since 1808.

### 35. (b)

In News : Recently, Portugal commemorated its 50 Years of Carnation Revolution.

- **Carnation Revolution: Portugal** witnessed the Carnation Revolution on **April 25, 1974** that was conducted by a **group of junior army officers (April's Captains)** who desired democracy and an end to the long-running wars against independence movements in the **African colonies of Angola, Mozambique, and Guinea-Bissau**.
  - The **April's Captains** touched off rapid decolonization, ending more than five centuries of Portuguese empire in Africa.
- They regarded those wars, which were killing thousands of young Portuguese conscripts, as unjust and unwinnable, and **toppled the longest fascist dictatorship in Europe** and ushered in democracy, and ended a stifling **four-decade dictatorship established by Antonio Salazar**.
- It paved the way for **Portugal's 1986 entry into the European Union**, then called the European Economic Community.

### 36. (d)

Floods are the most frequent type of natural disaster and occur when **an overflow of water submerges land that is usually dry.**

- Anthropogenic Causes
  - **Deforestation:** The lack of vegetation encourages water to flow over the surface rather than infiltrate into the soil thus increasing surface runoff.
  - **Poor land use practices:** Slash and burn agriculture, over-cultivation and overgrazing eventually cause the soil to become infertile and unable to sustain vegetative growth.
- Consequently, the lack of green cover encourages water to flow over the surface rather than infiltrate into the soil thus increasing surface runoff.
  - **Urbanization** leads to the replacement of permeable soil with that of an impervious layer of pitch and concrete, through which water cannot infiltrate.
  - **Improper waste disposal:** Oftentimes, garbage that is not properly disposed enters into drainage systems and clogs drains.
  - **Quarrying** is the clearing of land for the removal of aggregates (mainly sand and gravel) which is to be utilized in the construction industry. The action of quarrying leaves land bare and devoid of any trees and shrubs hence increasing surface runoff produced.
  - **Collapsed Dams:** If the dams begin to collapse, they will discharge more water downstream, resulting in flooding.
  - **Climate change:** Uncontrolled human activities can contribute to climatic changes, which are responsible for flooding in most regions.

### 37. (a)

#### Atacama Desert

- The Atacama Desert is the driest hot desert in the world **located in Chile**, receiving as much sunshine as Venus.
  - Only a handful of animals survive the harsh conditions — including Darwin's leaf-eared mouse and the South American gray fox — some bacteria thrive in the desert's salty, mineral-rich soils.



**38. (d)**

**In News:** An earthquake of around 6.5 magnitude struck Japan's Bonin Islands.

**About: Bonin Islands**

- Ogasawara Islands (also known as the Bonin Islands) are located 1000 km south of the main Japanese mainland.
- In 2011, the islands were listed as a UNESCO World Heritage site, in recognition of their serving as an outstanding example of the ongoing evolutionary processes in oceanic island ecosystems.

**39. (c)**

**Statement 1 is correct:** According to IMD heat waves need not be considered till the maximum temperature of a station reaches atleast 40°C for Plains and atleast 30°C for Hilly regions.

**Statement 2 is not correct:** Heatwaves are more common in inland areas with less influence from sea breezes that moderate temperatures. Coastal areas generally experience milder heatwaves.

**Statement 3 is correct:** High temperatures and scorching heat can cause stress on crops, leading to wilting, lower yields, and even crop failure.

**Statement 4 is correct:** Heatstroke is a serious health risk associated with heatwaves. It occurs when the body overheats and can't cool down, leading to organ damage and even death.

# Government Schemes/Initiatives

1. Which one of the following Indian institutions has recently launched the 'Longevity India Initiative'?
  - (a) India Meteorological Department (IMD)
  - (b) Indian Institute of Science (IISc)
  - (c) Indian Space Research Organisation (ISRO)
  - (d) Council of Scientific & Industrial Research (CSIR)
2. The Pradhan Mantri Fasal Bima Yojana (PMFBY) is a crop insurance scheme that aims to:
  - (a) Provide financial assistance to farmers who suffer crop losses due to natural disasters.
  - (b) Encourage farmers to adopt modern agricultural practices and improve crop yields.
  - (c) Promote private sector participation in the agricultural insurance market.
  - (d) All of the above.
3. Consider the following:
  1. In-situ slum redevelopment
  2. Credit Linked Subsidy Scheme
  3. Beneficiary-led Construction

How many of the above is / are the components of 'Pradhan Mantri Awas Yojana (PMAY) Scheme'?

  - (a) Only one
  - (b) Only two
  - (c) All three
  - (d) None
4. With reference to the Pradhan Mantri Fasal Bima Yojana, consider the following statements:
  1. It was launched in 2016 by the Ministry of Agriculture & Farmers welfare.
  2. It provides financial support to farmers in case of crop failure or damage due to natural calamities, pests, or diseases.
  3. Only Annual commercial/Horticulture crops are covered under the scheme.

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 Swachh Bharat Mission, consider the following statements:
  1. It 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.
  2. The second phase of the mission focuses on solid or liquid waste management systems.

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



## Explanation (Government Schemes/Initiatives)

### 1. (b)

**In News :** Recently, the **Indian Institute of Science (IISc)** has launched the '**Longevity India Initiative**' aiming at extending human healthspan and tackling ageing-related challenges.

**About the Longevity India Initiative:**

- It brings together a multidisciplinary team of experts from academia, industry, and healthcare to address complex challenges related to aging.
- It primarily focuses on identifying early disease indicators, investigating ageing biomarkers, and developing new therapeutics and technologies to aid healthy ageing.
- It seeks to enhance the understanding of aging through both fundamental and applied research, and to develop solutions that can improve quality of life.

### 2. (a)

The primary objective of the PMFBY is to provide financial protection to farmers against crop losses arising from various natural calamities, including droughts, floods, hailstorms, and pests. By compensating farmers for their losses, the scheme aims to safeguard their livelihoods and encourage continued agricultural production. While PMFBY does provide financial support, it's not directly intended to promote modern agricultural practices or increase crop yields.

### 3. (c)

**In News:** Recent estimates of the government show that there is a shortage of three million houses in urban centres.

- **The Pradhan Mantri Awas Yojana (PMAY) Scheme:** It is a flagship and Centrally Sponsored Scheme by the Union **Ministry of Housing and Urban Affairs (MoHUA)**, launched in 2015, to provide affordable housing to the urban poor.

**Components**

- **In-situ Slum Redevelopment (ISSR):** It involves the rehabilitation of slum dwellers with the participation of private developers.
- **Affordable Housing in Partnership (AHP):** This involves the promotion of affordable housing for the weaker sections through partnerships with the public and private sectors.
- **Credit Linked Subsidy Scheme (CLSS):** This scheme provides interest subsidy on housing loans to eligible beneficiaries.
- **Beneficiary-led Construction (BLC):** This involves providing central assistance to eligible families for the construction or enhancement of houses.

### 4. (b)

**Statement 1 and 2 are correct:** It was launched in **2016** by the **Ministry of Agriculture & Farmers welfare**.

- **Objectives:** It is a crop insurance scheme that provides financial support to farmers in case of crop failure or damage due to natural calamities, pests, or diseases.

**Statement 3 is not correct: Coverage of Crops:** Food crops (Cereals, Millets & Pulses), Oilseeds and Annual Commercial / Horticultural crops.

### 5. (c)

**Both the 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**.



- SBM Phase II: The second phase, started in 2020-2021, expands efforts with a focus on safe management of solid and liquid waste and sustainability of ODF.
  - An ODF Plus village is one which has sustained its Open Defecation Free (ODF) status along with implementing either solid or liquid waste management systems.
  - It would transform villages from ODF to ODF Plus by 2024-25.

# Defense/Internal Security

1. With reference to the National Security Guard (NSG), consider the following statements:
1. The NSG was established in the wake of Operation Blue Star of 1984.
  2. It comes under the control of the Ministry of Defence.

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
2. 'DUSTLIK', is a joint military Exercise between India and which of the following countries?
- (a) Kyrgyzstan
  - (b) Turkmenistan
  - (c) Uzbekistan
  - (d) Kazakhstan
3. Consider the following pairs:

<i>Operation</i>	<i>Launched by</i>
1. True Promise	Israel
2. Prosperity Guardian	United States
3. Sankalp	India

How many of the pairs given above is / are correctly matched?

- (a) Only one
  - (b) Only two
  - (c) Only three
  - (d) None
4. Which of the following operations is associated with securing strategic heights on Siachen with the deployment of troops in 1984?
- (a) Operation Vijay
  - (b) Operation Polo
  - (c) Operation sankalp
  - (d) Operation Meghdoot
5. Consider the following statements:
1. Naxal affected areas in India are known as the 'Red Corridor'.
  2. The Naxal movement started with the tribal-peasant uprising against landlords in Naxalbari village of Andhra Pradesh.

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 Army Tactical Missile System (ATACMS), consider the following statements:
1. It is a conventional surface-to-surface artillery weapon system.
  2. It is jointly developed by the Indian Army and DRDO.

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. Crystal Maze 2 missile, has been test-launched by which of the following countries?

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

8. With reference to the *INS Vikrant*, consider the following statements:

1. It is India's first indigenous aircraft carrier commissioned into the Indian Navy.
2. It originally belonged to India's first aircraft carrier which was acquired from Russia.

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

## Explanation (Defense/Internal Security)

1. (a)

**Statement 1 is correct:** The NSG was formed in **1986** to save the country from terror activities.

- It was established in the wake of **Operation Blue Star of 1984**.
  - During this operation the Union Government felt the need to have a special force to tackle terror activities.

**Statement 2 is not correct:** It comes under the control of the Ministry of **Home Affairs**, Government of India.

2. (c)

**News:** The Indian Army contingent departed for the 5th edition of India- **Uzbekistan** joint military Exercise DUSTLIK.

**About**

- Exercise DUSTLIK is a yearly event conducted alternatively in India and Uzbekistan. Last edition was conducted at Pithoragarh (India) in February 2023.
- Aim of Exercise is to foster military cooperation and enhance combined capabilities to execute joint operations in mountainous as well as semi urban terrain.

3. (b)

**In News :** Iran launched over 200 drones and cruise missiles against Israel under Operation True Promise (also called "Operation Honest Promise").

**Operation True Promise**

- It marks the **first-ever direct attack** by Iran on Israeli territory from Iranian soil.
- This was in response to Israel's airstrike on an Iranian diplomatic building in Syria, which killed a senior member of Iran's Islamic Revolutionary Guards.

### Operation Prosperity Guardian

- In 2023, the United States launched a multinational task force, named **Operation Prosperity Guardian** to counter the Houthi **threat** in the Red **Sea**.
- The Task Force includes the Navies of Bahrain, Canada, France, Italy, Netherlands, Norway, Seychelles, Spain, and the United Kingdom.

### Operation Sankalp

- It was launched by the Indian Navy in December 2023 and it aims to safeguard India's maritime interests and thwart the resurgence of piracy.
- Under this, the Indian Navy is conducting maritime security operations in the **Gulf of Aden and adjoining areas, Arabian Sea and off the East Coast of Somalia**.

## 4. (d)

### Operation Meghdoot

#### Context

- Indian Army celebrated 40 years of 'Operation Meghdoot' on Siachen Glacier

#### Operation Meghdoot

- By 1984, Pakistan's cartographic aggression in the uncharted territory of Ladakh, allowing foreign mountaineering expeditions in Siachen, was becoming a cause of concern.
- To legitimize its claim on Siachen, on 13 April 1984, the Indian Army launched Operation Meghdoot, to secure strategic heights on Siachen with the deployment of troops.
- The operation involved the airlifting of Indian Army soldiers by the IAF and dropping them on the glacial peaks.

## 5. (a)

**Statement 1 is correct:** Naxalism or Left Wing Extremism (LWE) is one of the major challenges to India's internal security.

- Naxal affected areas in India are known as the '**Red Corridor**'.

**Statement 2 is not correct:** The Naxal movement started with the **tribal-peasant uprising against landlords in Naxalbari village** of Darjiling district, **West Bengal in 1967**.

- The uprising was led by leaders such as Charu Majumdar, Kanu Sanyal and Jangal Santhal.

## 6. (a)

**Context:** As per the reports, the United States had quietly shipped off long-range **Army Tactical Missile System (ATACMS)** to Ukraine.

#### About Army Tactical Missile System (ATACMS)

- The ATACMS is a conventional **surface-to-surface** artillery weapon system built by US-based arms manufacturer **Lockheed Martin**.
- Its biggest strengths are the long-range of attack, ability to fire cluster munitions, and the weapon system's mobility.
- **Range:** There is a mid-range version of the ATACMS, called **Block 1**, and there is a long-range version, **Block 1A**.
  - ATACMS Block 1 has a range of 165 kilometres and ATACMS Block 1A, on the other hand, has a maximum range of 300 km.

## 7. (b)

India

Context

- The Indian Air Force (IAF) has conducted successful test firing of **Crystal Maze 2 missile**.

About

- It is an air launched ballistic missile capable of hitting targets over **250 kilometers** away.
- It is an extended stand-off range **air-to-surface missile** designed to strike high-value stationary and relocatable targets, including long-range radars and air defense systems.
- It is specifically effective in GPS denied environments, and can also penetrate areas protected by air defense systems.

## 8. (a)

**In News :** Recently, **INS Vikrant** alongwith the INS Vikramaditya showcased '**twin carrier operations**' and demonstrated an ability that only a handful of nations can boast of.

**Statement 1 is correct:**

- **INS Vikrant** is **India's first indigenous aircraft carrier**, commissioned into the Indian Navy in September 2022.
- It has been fully operationalised and integrated into the operational cycle in record time.

**Statement 2 is not correct:**

- The name '**INS Vikrant**' originally belonged to India's first aircraft carrier which was acquired from the **United Kingdom (UK)**, and played a vital role in the 1971 War with Pakistan before it was decommissioned in 1997.
  - The ship was laid down as HMS Hercules for the British Royal Navy during World War II, but construction was put on hold when the war ended.
  - India purchased the incomplete carrier in 1957, and construction was completed in 1961.

# International Relations

1. Which of the following statements about the United Nations Population Fund (UNFPA) is **not** true?
  - (a) It was established in 1969.
  - (b) It is the largest international source of funding for population programs implementing the Programme of Action from the 1994 International Conference on Population and Development.
  - (c) It receives funding from the regular UN budget.
  - (d) Its work aligns with achieving Sustainable Development Goals related to health, education, and gender equality.
2. Consider the following statements:

**Statement 1:** The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) was established in 1997.

**Statement 2:** All seven member countries of BIMSTEC share a land border with the Bay of Bengal.

**Statement 3:** The BIMSTEC Charter outlines the organization's goals and principles for regional cooperation.

Choose the correct answer using the codes given below:

  - (a) Only statement 1 is correct
  - (b) Only statement 2 is correct
  - (c) Only statements 1 and 3 are correct
  - (d) All Statements are correct
3. Recently, the 'Agreement on the boundary in Historic Waters between the two countries and Related Matters' was in news, is related to:
  - (a) Sri Lanka
  - (b) Maldives
  - (c) Bangladesh
  - (d) Pakistan
4. Recently, the Indian Embassy has rescued over 200 victims of illegal cyber work scam in Cambodia. In context of the above statement, which of the following countries shares borders with Cambodia?
  1. Thailand
  2. Laos
  3. Vietnam
  4. Malaysia

Select the correct answer using the codes given below.

  - (a) 1 and 2 only
  - (b) 1, 2 and 3 only
  - (c) 2 and 3 only
  - (d) 1, 2, 3 and 4
5. Consider the following countries:
  1. Bhutan
  2. Sri Lanka
  3. Malaysia
  4. Nepal
  5. Vietnam
  6. Thailand

How many from the above countries are part of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)?

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

6. With reference to the Shanghai Cooperation Organisation (SCO), which of the following statements is/are correct?

- 1. The SCO is an intergovernmental organization founded in 2008.
- 2. The Secretariat of SCO is located in Beijing, China.

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. Consider the following:

- 1. Armenia
- 2. Belarus
- 3. Kazakhstan
- 4. Kyrgyzstan
- 5. Russia

How many of the above countries are part of the Eurasian Economic Union (EAEU)?

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

8. With reference to the North Atlantic Treaty Organization (NATO), consider the following statements:

- 1. Belgium and Canada are among the founding members of the Organization.
- 2. It has 32 member countries and Finland became the 32nd Member recently.

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. With reference to the AUKUS, consider the following statements:

- 1. It is a trilateral defence and security partnership between Australia, the United Kingdom and the United States.
- 2. Pillar I revolves around the acquisition and development of conventionally armed nuclear-powered submarines for the Royal Australian Navy.

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. Which among the following countries are part of the Gulf Cooperation Council (GCC)?

1. Iran
2. Kuwait
3. Oman
4. Yemen

Select the correct answer using the code given below:

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

11. Which among the following countries are part of the Indo-Pacific Economic Framework for Prosperity (IPEF)?

1. India
2. United States
3. Canada
4. Australia

Select the correct answer using the code given below:

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

12. With reference to the United Nations Security Council (UNSC), consider the following statements:

1. It was established in 1945 as part of the UN Charter and is composed of 15 member states.
2. It has five permanent members with veto power—China, France, Russia, the United Kingdom, and the United States.

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. Consider the following statements with reference to International Atomic Energy Agency (IAEA):

1. It reports to the UN General Assembly only.
2. It is entrusted with the task of upholding the principles of the Nuclear Non-Proliferation Treaty.
3. It only deals with the civil nuclear programmes of the sovereign states.

Which of the statements given above are **not** correct?

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

14. Consider the following statements:

1. The Schengen area encompasses most EU countries, except for Germany and Estonia.
2. Iceland, Liechtenstein, Norway and Switzerland are in the Schengen area but are not EU member states.

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

15. Which of the following countries were founding members of the Association of Southeast Asian Nations (ASEAN)?

- 1. Indonesia
- 2. VietNam
- 3. Philippines
- 4. Singapore
- 5. Cambodia

Select the correct answer using the code given below.

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

16. With reference to the Chemical Weapons Convention (CWC), consider the following statements:

- 1. It entered into the force in 1997, and currently has 193 states-parties including India.
- 2. Israel and North Korea are the only states that have neither signed nor ratified the convention.

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

17. Which of the following were the founding members of Shanghai Cooperation Organisation (SCO)?

- 1. Kazakhstan
- 2. India
- 3. China
- 4. Pakistan
- 5. Tajikistan
- 6. Uzbekistan

Select the correct answer using the code given below:

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

18. With reference to the UN-recognised Global Alliance of National Human Rights Institutions (GANHRI), consider the following statements:

- 1. It is one of the largest human rights networks worldwide.
- 2. It is responsible for reviewing and accrediting National Human Rights Institutions in compliance with the Paris Principles.

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
19. Which of the following statements about the Shanghai Cooperation Organisation (SCO) is **not correct**?
- (a) The SCO focuses on political, economic, and security cooperation among member states.  
(b) The SCO headquarters are located in Beijing, China.  
(c) India became a full member of the SCO in 2017.  
(d) The SCO's primary objective is to promote military alliance and collective defense.
20. With reference to the Group of Seven (G7), which of the following statements is/are correct?
1. It is an intergovernmental organization of seven countries that are the world's most industrialized and developed economies.  
2. It was Originated in the wake of the 1973 oil crisis.
- 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

## Explanation (International Relations)

1. (c)

About **United Nations Population Fund (UNFPA)**

- It is (formerly known as the United Nations Fund for Population Activities) a UN agency, **established in 1969**, aimed at improving reproductive and maternal health worldwide.
- It is the largest international source of assistance for population programs for the implementation of the Programme of Action of the **International Conference on Population and Development (1994)**.
- UNFPA works directly to tackle **Sustainable Development Goals** on health (SDG3), education (SDG4) and gender equality (SDG5).
- UNFPA is entirely supported by voluntary contributions of donor governments, intergovernmental organizations, the private sector and foundations and individuals, **not by the United Nations regular budget**.

2. (c)

**Statement 1 is correct:** It was founded as BIST-EC, in June 1997, with the adoption of the Bangkok Declaration, with Bangladesh, India, Sri Lanka and Thailand as members.

**Statement 2 is not correct:** While most members are located on the Bay of Bengal, not all share a land border. For example, Bhutan is a landlocked country bordering India and China.

**Statement 3 is correct:** The BIMSTEC Charter serves as the foundational document outlining the organization's goals and principles for regional cooperation.

3. (a)

**In News :** Recently, the Prime Minister raked up the Katchatheevu Island issue, ahead of the Lok Sabha elections 2024.

- Katchatheevu Island:** It is an uninhabited island in the **Palk Strait**, and is believed to have been formed following a **volcanic eruption** in the 14th Century.
- The Controversy** began in earnest in 1974 when the **island was ceded to Sri Lanka** by the Indian government under the leadership of then Prime Minister Indira Gandhi.

- The island lies on the Sri Lankan side of the *International Maritime Boundary Line (IMBL)* and was 'recognised' by India as Colombo's territory under the *Agreement on the boundary in Historic Waters between the two countries and Related Matters*.

#### 4. (b)

**News:** Recently, the Indian Embassy has rescued over 200 victims of illegal cyber work scam in Cambodia.

**About: Cambodia**

- It is a country of Southeast Asia and lies entirely within the tropics, between latitudes 10° N and 15°N.
- Capital: Phnom Penh
- Geographical Boundaries: It is bordered by **Thailand, Laos, Vietnam** and the Gulf of Thailand.
- The major river of Cambodia is the Mekong river.



#### 5. (b)

**In News :** Recently, a majority in the Lower House of Nepal supported the proposal seeking endorsement of the BIMSTEC Charter.

**BIMSTEC:**

The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a regional organisation **comprising seven Member States** (five from South Asia, including Bangladesh, Bhutan, India, Nepal, and Sri Lanka, and two from Southeast Asia, including Myanmar and Thailand) lying in the littoral and adjacent areas of the Bay of Bengal.

#### 6. (b)

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

**Shanghai Cooperation Organisation (SCO)**

- The SCO is an intergovernmental organization **founded in 2001** with six members.
- **Objective:** To enhance regional cooperation for efforts to curb terrorism, separatism, and extremism in the Central Asian region.
- **Members:** China, Russia, India, Pakistan, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, and Iran.
- **Secretariat:** Beijing
- **Official languages:** Russian and Chinese.
- **Observer status:** Afghanistan, Belarus and Mongolia.
- The SCO has been an observer in the UN General Assembly since **2005**.

#### 7. (d)

**In News:** India, Eurasian Economic Union (EAEU) bloc officials held talks to formally start negotiation for the Free Trade Agreement (FTA).

**EAEU:**

- It is an **Economic Union**, established in 2015, that integrates several post-Soviet states.
- It includes **Armenia, Belarus, Kazakhstan, Kyrgyzstan, and the Russian Federation (Russia)**.

#### Objectives:

- It aims to ease cross-border trade and labour migration, and eliminate non-tariff trade barriers among member states.
- It has a **Common External Tariff (CET)** and a **common customs code**.

#### 8. (a)

**Statement 1 is correct: NATO, or the North Atlantic Treaty Organization, is a military alliance of countries.**

- **Establishment:** It was founded in **1949** with the signing of the North Atlantic Treaty, more popularly known as the **Washington Treaty**.
- **Founding Members:** The original members of NATO were **Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom, and the United States**.

**Statement 2 is not correct: Members:** It has **32 member countries**, **Finland and Sweden** became the 31st and 32nd members respectively.

On signing the Treaty, countries voluntarily commit themselves to participating in the political consultations and military activities of the Organization.

#### 9. (c)

**Both the statements are correct: AUKUS is a trilateral defence and security partnership between Australia, the United Kingdom and the United States.**

- It was established in **2021** to bolster their allied deterrence and defense capabilities in the **Indo-Pacific**.
- The trilateral partnership has two pillars.
  - **Pillar 1** revolves around the acquisition and development of conventionally armed nuclear-powered submarines for the Royal Australian Navy; and **Pillar 2** focuses on cooperation in eight advanced military capability areas: artificial intelligence (AI), quantum technologies, innovation, information sharing, and cyber, undersea, hypersonic and counter-hypersonic and electronic warfare domains.

#### 10. (b)

Gulf Cooperation Council (GCC) is a **political and economic alliance** of six Middle Eastern countries—**Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain, and Oman**.

- It was established in **1981**.
- It aims to achieve unity among its members based on their common objectives and their similar political and cultural identities, which are rooted in Arab and Islamic cultures.
- The presidency of the council rotates **annually**.



#### 11. (b)

It was launched in **2022** and currently includes **14 partners** – **Australia, Brunei Darussalam, Fiji, India, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, United States and Vietnam**.

#### 12. (c)

**Both the statements are correct:**

- The United Nations Security Council (UNSC) is one of the principal organs of the United Nations, responsible for maintaining international peace and security.

It was established in 1945 as part of the UN Charter and is composed of 15 member states, including five permanent members with veto power—China, France, Russia, the United Kingdom, and the United States—and ten non-permanent members elected for two-year terms by the General Assembly.

**13. (c)**

**Statement 1 is not correct:** IAEA was established in **1957 as an autonomous organisation**, at the height of the Cold War (1945-1991) between the US and the Soviet Union.

- Though established independently by the UN through its own international treaty, the agency reports to both the UN General Assembly and the Security Council.

**Statement 2 is correct:** As the preeminent nuclear watchdog, the IAEA is entrusted with the task of upholding the principles of the **Nuclear Non-Proliferation Treaty, 1970**.

**Statement 3 is not correct:** It deals with the sovereign states and their pursuit of **civil and military nuclear programmes**.

**14. (b)**

**Context:** Recently, the European Union (EU) has announced the **new Schengen visa rules** for Indian nationals.

**Schengen Area**

The Schengen area consists of 29 European countries (of which 25 are EU states): Belgium, Bulgaria, Croatia, Czech Republic, Denmark, **Germany, Estonia**, Greece, Spain, France, Italy, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland and Sweden, **along with Iceland, Liechtenstein, Norway and Switzerland**.

**15. (a)**

The Association of Southeast Asian Nations, or ASEAN, was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration) by the Founding Fathers of ASEAN: **Indonesia, Malaysia, Philippines, Singapore** and Thailand.

**16. (a)**

**Chemical Weapons Convention (CWC):** It is a multilateral treaty that bans chemical weapons and requires their destruction within a specified period of time.

**Statement 1 is correct.**

- CWC is implemented by the Organization for the Prohibition of Chemical Weapons (OPCW).
- It entered into force in 1997, and currently has 193 states-parties including India.

**Statement 2 is not correct.**

Israel has signed but not ratified. Three states have neither signed nor ratified (Egypt, North Korea, and South Sudan).

**17. (b)**

**In News :** Recently ,India participated in the Shanghai Cooperation Organisation (SCO) Defence Ministers' meeting which was held in Astana, Kazakhstan,

**Shanghai Cooperation Organization (SCO)** is a permanent intergovernmental international organization established on June 15, 2001 in Shanghai (PRC) by the **Republic of Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Russian Federation, the Republic of Tajikistan** and the Republic of Uzbekistan.

- Its predecessor was the mechanism of the Shanghai Five.
- **Composition :** Currently, the SCO countries includes: 9 Member States — the Republic of **India**, the Islamic Republic of Iran, the Republic of Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Islamic Republic of Pakistan, the Russian Federation, the Republic of Tajikistan, the Republic of Uzbekistan.
- The official languages of the SCO are **Russian and Chinese**.
- The Organization has 2 standing bodies — **the Secretariat in Beijing** and the Executive Committee of the **Regional Anti-Terrorist Structure (RATS) in Tashkent**.
- **The goals of the SCO are:**
  - To strengthen mutual trust, friendship and good-neighbourliness between the Member States;
  - To encourage the effective cooperation between the Member States in such spheres as politics, trade, economy, science and technology, culture, education, energy, transport, tourism, environmental protection, etc.

## 18. (c)

**Both the statements are correct:** GANHRI is one of the largest human rights networks worldwide.

- At an international workshop held in **Tunis, Tunisia in 1993**, a group of NHRIs set the foundation for the global network of national human rights institutions.
- GANHRI, through the Sub-Committee on Accreditation (SCA), is responsible for reviewing and accrediting NHRIs in compliance with the Paris Principles.

## 19. (d)

(a), (b), and (c) are all correct statements about the SCO.

The SCO's focus areas include political, economic, and security cooperation, with a specific emphasis on combating terrorism, separatism, and extremism. India became a full member of the SCO in 2017.

(d) is not correct: While the SCO conducts joint military exercises, its primary objective is not to form a military alliance like NATO.

## 20. (c)

**Both the Statements are correct.**

### Group of Seven (G7)

- **It is an intergovernmental organization** of seven countries that are the world's most industrialized and developed economies.
- **Member:** France, Germany, United Kingdom, Italy, United States of America, Canada and Japan.
- **History:** It traces its origin to an informal meeting of the Finance Ministers of France, West Germany, the US, Great Britain and Japan (Group of Five) in the wake of the 1973 oil crisis.
  - **Canada** joined the group in **1976** and the **European Union (EU)** began attending the meetings from **1977**.

It was called the G8 after the original seven were joined by Russia in 1997 and it returned to being called G7 when Russia was expelled as a member in 2014 following the latter's annexation of the Crimea region of Ukraine.

# Science & Technology

1. With reference to the Avian influenza (bird flu), consider the following statements:
  1. It is a disease that primarily affects birds and is caused by a virus of the Orthomyxoviridae family.
  2. In India, it was first detected in the state of Kerala in 2006.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
2. The National Aeronautics and Space Administration (NASA's) Perseverance Rover is designed to explore which of the following celestial bodies?
  - (a) Venus
  - (b) Mars
  - (c) Moon
  - (d) Saturn
3. 'NS-25 mission', recently seen in the news, is related to which of the following?
  - (a) Space Tourism
  - (b) Bringing Mars Rocks to Earth
  - (c) Studying Sun's Corona
  - (d) Discovering Water Molecules on Lunar Soil
4. With reference to the Parkinson disease, consider the following statements:
  1. There is no cure for Parkinson disease and it usually occurs in older people.
  2. Common symptoms include tremors, painful muscle contractions and difficulty in speaking.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. With reference to the Punnett Square, consider the following statements:
  1. It is named after British geneticist Reginald Punnett.
  2. It is a useful tool that helps predict the variations and probabilities resulting from cross-breeding.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 Osmosis, consider the following statements:
  1. It is the movement of molecules of solvent from a region of its higher concentration to a region of its lower concentration.
  2. It is observed in living cells and tissues of all organisms.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. Free Antiretroviral Therapy (ART) initiative recently seen in the news, it is related to:  
(a) HIV/AIDS  
(b) Coronavirus Disease (COVID-19)  
(c) Japanese Encephalitis  
(d) Lumpy Skin Disease
8. The *Kodaikanal Solar Observatory*, sometime appeared in the news, is located at:  
(a) Meghamalai Hills  
(b) Velliangiri Hills  
(c) Javadi Hills  
(d) Palani Range of Hills
9. The term “Pushpak”, recently seen in the news, is related to:  
(a) New Rice Variety  
(b) Invasive species  
(c) Supercomputer  
(d) Reusable Launch Vehicle
10. Which one of the following countries has its own atomic clocks?  
(a) South Korea  
(b) Russia  
(c) Canada  
(d) France
11. Consider the following statements with respect to Carbon fibre:  
1. It is made by heating a carbon-containing material such as polyacrylonitrile (PAN).  
2. It generally has excellent tensile properties and good electrical conductivity.  
3. Currently, India does not produce any carbon fibre, relying entirely on imports from countries including France .  
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
12. With reference to the Artificial Sun, consider the following statements:  
1. It is a nuclear fission reactor facility.  
2. Scientists generally use a donut-shaped reactor called a tokamak to create a plasma.  
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. Consider the following treaties:

1. Treaty on the Prohibition of Nuclear Weapons (TPNW)
2. Non-Proliferation of Nuclear Weapons (NPT)
3. Comprehensive Nuclear-Test-Ban Treaty (CTBT)
4. Outer Space Treaty

Choose the correct chronological order of appearance from the code given below:

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

14. With reference to the *Agni-Prime Ballistic Missile*, consider the following statements:

1. It is a three-stage, surface-to-surface and solid-fueled ballistic missile system.
2. It is lighter than all the earlier Agni series of missiles.

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

15. Consider the following statements:

1. Dark Matter works like an attractive force that holds the universe together.
2. Dark energy is a repulsive force that drives the expansion of the universe.

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

16. With reference to the T cells, which of the following statements is/are correct?

1. T-cells are a specific type of white blood cell called lymphocytes.
2. T cells are part of the immune system and develop from stem cells in the bone marrow.

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

17. With reference to the *Indian Antarctic Programme*, consider the following statements:

1. It is under the administrative control of the Ministry of External Affairs, India.
2. Currently, India has three operational research stations namely Dakshin Gangotri, Maitri and Bharati in Antarctica.

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

18. Pink hydrogen refers to hydrogen produced through:
- Electrolysis powered by nuclear energy
  - Electrolysis powered by wind and solar energy
  - Steam forming through natural gas
  - Biological processes through using microbes
19. With reference to the Green Hydrogen, consider the following statements:
- It is produced through a process called electrolysis.
  - It can be used as a fuel in vehicles based on fuel cell/internal combustion engine-based propulsion technology.
- Which of the statements given above is/are correct?
- 1 only
  - 2 only
  - Both 1 and 2
  - Neither 1 nor 2
20. With reference to the Skin Pigmentation, consider the following statements:
- The pigment melanin determines the colour of skin.
  - Migration of people doesn't play any role in the diversity of skin colour across human populations.
- Which of the statements given above is/are correct?
- 1 only
  - 2 only
  - Both 1 and 2
  - Neither 1 nor 2
21. With reference to the Osmosis, consider the following statements:
- It is the movement of molecules of solvent from a region of its higher concentration to a region of its lower concentration.
  - It is observed in living cells and tissues of all organisms.
- Which of the statements given above is/are correct?
- 1 Only
  - 2 Only
  - Both 1 and 2
  - Neither 1 nor 2
22. Which of the following are mosquito-borne diseases?
- Dengue
  - West Nile Virus
  - Yellow Fever
  - Zika
- Select the correct answer using the code given below:
- 1 only
  - 1, 2, and 3 only
  - 2, 3 and 4 only
  - 1, 2, 3 and 4
23. With reference to the Glycaemic Index (GI), consider the following statements:
- It shows how quickly each food affects blood sugar (glucose) level when that food is eaten on its own.

2. High GI foods are broken down more slowly and cause a gradual rise in blood sugar levels over time.

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

24. Higgs boson theory recently seen in the news, it is related to

- (a) Albert Einstein
- (b) Isaac Newton
- (c) Galileo Galilei
- (d) None of the above

25. With reference to the Hepatitis, consider the following statements:

- 1. Hepatitis B can spread through contact with infected body fluids.
- 2. Hepatitis C can be prevented with a safe and effective vaccine.

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

26. Consider the following statements about the piezoelectric effect:

- 1. Piezoelectric materials generate an electric voltage when subjected to mechanical stress.
- 2. The piezoelectric effect is reversible, meaning applying an electric field can cause a mechanical deformation in the material.
- 3. Piezoelectric materials are typically good conductors of electricity.
- 4. Piezoelectric materials are limited to natural minerals and cannot be synthetically produced.

Which of the statements given above are correct?

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

27. Considering the following statements about space debris and treaties:

- 1. The Outer Space Treaty of 1967 prohibits member states from placing nuclear weapons or other weapons of mass destruction (WMDs) in outer space.
- 2. There is currently no international treaty specifically focused on mitigating space debris.
- 3. The Liability Convention establishes international liability for damages caused by space objects, incentivizing responsible space operations.

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

28. With reference to the Whooping cough, consider the following statements:

- 1. Whooping cough is a highly contagious respiratory illness also known as pertussis caused by the virus Bordetella pertussis.

2. There is no vaccination available for the whooping cough.

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

29. With reference to the Cervical Cancer, consider the following statements:

- 1. It ranks as the 2nd most frequent cancer among women in India.
- 2. It is linked to infection with high-risk human papillomaviruses (HPV).

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

30. Angara rocket, has been test-launched by which of the following countries?

- (a) Russia
- (b) India
- (c) Iran
- (d) Pakistan

31. The term '*Stellar Fratricide*' sometimes appeared in the news, is related to:

- (a) Asteroids
- (b) Black Hole
- (c) Nebula
- (d) Dwarf Planet

32. The term '*Hubble Tension*' sometimes appeared in the news, is related to:

- (a) Capturing Auroras like Australis and Borealis
- (b) Measuring Universe Expansion
- (c) Analysing Sun's Corona
- (d) Revealing Formation of Oort Cloud

33. With reference to the Mpox (formerly known as monkeypox), consider the following statements:

- 1. It is a zoonotic disease and was first reported in Denmark in 1958.
- 2. Common symptoms of mpox are: rash, fever, sore throat, headache, muscle aches and swollen lymph nodes.

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

34. The term '*Euvichol-S*' recently seen in the news is:

- (a) Fungal Disease
- (b) Invasive Species
- (c) A Fossil
- (d) A Vaccine

35. The word Llama 3 is sometimes mentioned in news in reference to:
- Large Language Model
  - Quantum Computer
  - Newly Discovered Asteroid Fragments
  - Ransomware
36. With reference to the Artemis Accords, which of the following statements is/are correct?
- It is a set of legally binding instruments for international cooperation in space exploration.
  - The Accords mirror principles set out in 1967, as part of the Outer Space Treaty
- Select the correct answer using the code given below:
- 1 only
  - 2 only
  - Both 1 and 2
  - Neither 1 nor 2
37. Consider the following statements about the Food Safety and Standards Authority of India (FSSAI):
- The FSSAI is an independent statutory body established under the Food Safety and Standards Act, 2006.
  - The FSSAI is responsible for regulating and licensing food businesses across all states in India.
  - The FSSAI grants the "Jaivik" (Organic) certification for organic food products in India.
- Which of the following statements are correct?
- 1 and 2 only
  - 1 and 3 only
  - 2 and 3 only
  - 1, 2, and 3
38. With reference to the Food Safety and Standards Authority of India (FSSAI), consider the following statements:
- It is the apex food regulator of India under the Ministry of Food Processing Industries.
  - FSSAI accredits laboratories for testing food products to ensure compliance with safety standards.
- Which of the statements given above is/are correct?
- 1 only
  - 2 only
  - Both 1 and 2
  - Neither 1 nor 2
39. With reference to 5G, consider the following statements:
- 5G has high latency when compared to 4G which will support new applications such as AI, and IoT.
  - Mobile phone users can ensure a faster connection with more bandwidth after choosing a 5G network.
- Which of the statements given above is/are correct?
- 1 only
  - 2 only
  - Both 1 and 2
  - Neither 1 nor 2

40. With reference to the Aditya mission, which of the following statements is/are correct?
1. It is the first space-based Indian observatory to study the Sun.
  2. It is placed at Lagrangian point L1 for Observing and understanding the chromospheric and coronal dynamics of the Sun.
- 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
41. Ethylene oxide is a crucial component in the sterilization of medical devices due to its:
- (a) High flammability, allowing for quick elimination of microbes.
  - (b) Corrosive properties, which denature proteins in microorganisms.
  - (c) Alkylating ability, disrupting the DNA and RNA of microbes.
  - (d) Ability to form strong ionic bonds with microbial cell walls.
42. Consider the following statements with reference to Membranous Nephropathy (MN).
1. It is an autoimmune disease resulting in nephrotic syndrome.
  2. A kidney biopsy is used to confirm the diagnosis of membranous nephropathy.
  3. Immunosuppressive therapy plays a major role in the treatment.
- Which of the above given statements is/are correct?
- (a) 1 and 2 only
  - (b) 2 and 3 only
  - (c) 1, 2, and 3
  - (d) 1 only
43. Liquid nitrogen is characterized by all of the following **except**:
- (a) It is a colorless and odorless liquid.
  - (b) It has a boiling point of -195.79 °C.
  - (c) It is used as a cryogenic refrigerant for scientific research.
  - (d) It readily burns in the presence of oxygen.
44. It is the smallest AI model developed by Microsoft and is believed to be the first in a series of three smaller models planned by Microsoft.
- Which of the following AI has been described above?
- (a) Gemini
  - (b) Phi-3-Mini
  - (c) ChatGPT-3.5
  - (d) Llama 3
45. Fentanyl is sometimes mentioned in news in reference to:
- (a) Food preservatives
  - (b) Fruit ripening substances
  - (c) Herbicides
  - (d) Opioid drug
46. Consider the following statements with reference to Bisphenol A (BPA):
1. It is used to manufacture polycarbonate plastics.
  2. It is found only in shatterproof windows and water bottles.
- 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

47. With reference to Salmonella Infection, consider the following statements:

1. It is a virus that can cause gastrointestinal illness and fever called salmonellosis.
2. Salmonella naturally lives in animals' intestines and can be found in their feces (poop).

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

## Explanation (Science & Technology)

1. (a)

**Context:** The ongoing global spread of “bird flu” infections to mammals including humans is a significant public health concern.

**About**

- Bird flu, also known as Avian influenza, is a disease primarily affecting birds and is caused by a virus of the **Orthomyxoviridae** family.

**Bird flu in India**

- It was first detected in India in the state of **Maharashtra** in 2006.
- Since then, the country has experienced annual outbreaks of bird flu in different regions, leading to substantial economic losses.
- The disease has been reported in 24 states and union territories, resulting in the culling of over 9 million birds to control its spread.

2. (b)

NASA’s Perseverance Rover, **nicknamed Percy**, in 2023 created the first sample depot on another world. The rover is designed to **explore the Martian surface** looking for signs of past and present life on the planet to contribute to **NASA’s Mars Exploration Programme’s science goals**.

3. (a)

**Context:** Gopi Thotakura, an Indian entrepreneur and aviator, is set to make history as the **first Indian space tourist** and will join five other crew members on the **NS-25 mission** of Blue Origin (Jeff Bezos-led space startup).

**About NS-25 mission**

- This mission will be the seventh human flight for the New Shepard programme and the 25th in its history.
- To date, the programme has flown 31 humans above the Karman line, the proposed conventional boundary between Earth's atmosphere and outer space.

**What is Space Tourism?**

Space tourism is essentially a section of the aviation sector which seeks to provide tourists with the opportunity to become astronauts and experience space travel for recreational, leisure, or business purposes.

4. (c)

Both the statements are correct.

- Parkinson disease (PD) is a brain condition that causes problems with movement, mental health, sleep, pain and other health issues.
- There is **no cure**, but therapies and medicines can reduce symptoms.
- Common symptoms include **tremors, painful muscle contractions and difficulty in speaking**.
- The disease usually occurs in **older people**, but younger people can also be affected. Men are affected more often than women.

5. (c)

Both the statements are correct: Punnett squares are a way to predict the possible genetic outcomes of the offspring when two individuals with known genotypes are crossed.

- The Punnett Square is named after British geneticist Reginald Punnett.
- A Punnett Square is a useful tool that helps predict the variations and probabilities resulting from cross-breeding.

6. (c)

Statements 1 and 2 are correct: Osmosis is the term used to refer specifically to the diffusion of water across a differentially- or semi-permeable membrane.

- It is a common physical process observed in living cells and tissues of all organisms.
- It occurs spontaneously in response to a driving force and the net direction and rate of osmosis depends on both the pressure gradient and concentration gradient.
- It is defined as the movement of molecules of solvent from a region of its higher concentration to a region of its lower concentration across a selectively permeable membrane, such as the plasma membrane.
- Water will move from its region of **higher chemical potential (or concentration)** to its region of **lower chemical potential until equilibrium is reached**.

7. (a)

Twenty years of Free Antiretroviral Therapy (ART) initiative have been completed recently .

- The Indian government had launched Free Antiretroviral Therapy (ART) on April 1, 2004 for Persons living with HIV (PLHIV).
- It is the treatment of people infected with human immunodeficiency virus (HIV) using anti-HIV drugs.
- The standard treatment consists of a combination of drugs (often called "highly active antiretroviral therapy" or HAART) that suppress HIV replication.

8. (d)

In News : Recently, it was observed that the Kodaikanal Solar Observatory completed its 125 years of establishment.

- **Kodaikanal Solar Observatory** : It is located in the **Palani range of hills** in the Indian state of **Tamil Nadu**, is a significant scientific establishment that has been observing the Sun for over a century.
- It was established in **1899 as a Solar Physics Observatory**, and has been recording images of the Sun every day for more than a hundred years, providing one of the longest series of solar data.
- **The Madras Observatory** was merged with it following the reorganisation of all Indian observatories on April 1, 1899.

9. (d)

In News: ISRO achieved a major milestone in the area of **Reusable Launch Vehicle (RLV) Technology** after the successful launch of "**Pushpak**".



- Pushpak was named after the mythological spaceship from the ancient Indian epic, Ramayana.

#### About

- The Pushpak was lifted by an Indian Air Force Chinook helicopter and was released from 4.5 km altitude.
- After the release, it autonomously approached the runway along with cross-range corrections.
- The Pushpak is shielded with heat-resistant materials to protect the spacecraft during atmospheric re-entry.

#### Reusable Launch Vehicle – Technology Demonstrator (RLV-TD)

- RLV-TD is one of the most technologically challenging endeavours of ISRO towards developing essential technologies for a fully reusable launch vehicle to enable low-cost access to space.

#### Significance

- Nearly 80 percent of the cost in a space launch vehicle goes into the structure of the vehicle and by using reusable launch vehicles this cost can come significantly down.
- This can also reduce the manufacturing time for building a new vehicle for every launch, thus enabling more frequent launches.

### 10. (a)

**In News :** Recently, India is willing to join an exclusive group of four other countries — the US, the UK, Japan, and South Korea — to have their own atomic clocks.

- **Atomic Clock** is a type of clock that uses the **vibrations of atoms** to measure time with **extraordinary precision**.
- They are the **most accurate** timekeeping devices in the world, with the ability to measure **billionths of a second**.

### 11. (d)

**In News:** India is planning to manufacture carbon fibre for use in aerospace, civil engineering and defence as an alternative to metal

**Statements 1, 2 and 3 are correct:** Carbon fiber is made by heating a carbon-containing material, such as **polyacrylonitrile (PAN)**, rayon, or pitch, to a very high temperature in an inert atmosphere.

- The main features include the **high modulus and specific tensile strength** calculated by the excellence of the graphite crystallites.
- Carbon fiber composites are very strong and lightweight, and they are also corrosion-resistant and have a **good electrical conductivity**. This makes them ideal for use in a variety of applications, including:
  - Aircraft manufacturing
  - Automotive manufacturing
  - Sports equipment
  - Medical devices

**Status in India:** Currently, India does not produce any carbon fibre, relying entirely on imports from countries such as the US, France, Japan and Germany.

### 12. (b)

**Statement 1 is not correct:** Artificial Sun is a **nuclear fusion reactor facility**, and it is called an “artificial sun” because it **mimics the nuclear fusion reaction that powers the real sun** – which uses hydrogen and deuterium gases as fuel.

**Statement 2 is correct:** Scientists generally use a **donut-shaped reactor called a tokamak** in which hydrogen variants are heated to extraordinarily high temperatures **to create a plasma**.

13. (b)

: Treaties Related to Nuclear Disarmament:

- **Outer Space Treaty:** This multilateral agreement **entered into force in 1967** and bans the siting of weapons of mass destruction in space.
  - All nine states believed to have nuclear weapons are parties to this treaty.
- **Treaty on the Non-Proliferation of Nuclear Weapons (NPT):** Signed in 1968 and entered into force in 1970, the NPT aims to prevent the spread of nuclear weapons and promote disarmament.
- **Comprehensive Nuclear-Test-Ban Treaty (CTBT):** Opened for signature in 1996, the CTBT aims to ban all nuclear explosions for both civilian and military purposes.
- **Treaty on the Prohibition of Nuclear Weapons (TPNW):** Adopted by the United Nations in **2017** and opened for signature in **2018**, the TPNW aims to prohibit the development, testing, production, stockpiling, stationing, transfer, use, and threat of use of nuclear weapons.

14. (b)

**In News :** Agni-Prime Ballistic Missile was successfully flight-tested by the **Strategic Forces Command (SFC)** along with the DRDO from the Dr APJ Abdul Kalam Island off the coast of Odisha.

**Statement 1 is not correct:**

- The Agni-Prime is a **two-stage**, surface-to-surface, canister-launched, road-mobile, and solid-fueled medium-range **ballistic missile**.
- It is equipped with a dual redundant navigation and guidance system.
- It has a **range between 1000 to 2000 km**.

**Statement 2 is correct:**

- The missile is lighter than all the earlier Agni series of missiles.
- It features significant upgrades to the composite motor casing, a **manoeuvrable reentry vehicle (MaRV)**, along with improved propellants, navigation, and guidance systems.

15. (c)

**Both the statements are correct: Dark Matter:** Unlike normal matter, dark matter **does not interact with the electromagnetic force**. This means it does not absorb, reflect or emit light, making it extremely hard to spot.

- Dark matter works like an **attractive force** — a kind of cosmic cement that **holds the universe together**. This is because dark matter **does interact with gravity**.
- **Dark Energy:** Dark energy is a **repulsive force** — a sort of anti-gravity — that **drives the universe's ever-accelerating expansion**. Dark energy is the far more dominant force than Dark matter.

16. (c)

**Both the Statements are correct.**

**What are T-Cells?**

- T-cells are a specific type of white blood cell called **lymphocytes**.
- It helps the immune system to fight germs and protect from disease.
- T cells develop from stem cells in the **bone marrow**. Then it matures in the thymus and eventually relocates to lymph tissue or bloodstream.
- Types of T cells:
  - **Cytotoxic T-cells:** They kill cells infected with viruses and bacteria, and they also destroy tumor cells.
  - **Helper T-cells:** They send signals that direct other immune cells to fight infection.

**Regulatory T-cells (Tregs):** These cells suppress excessive immune responses to prevent autoimmune reactions and maintain immune tolerance. They play a crucial role in preventing the immune system from attacking the body's own cells and tissues.

17. (d)

Statement 1 is not correct:

- **India and Antarctica:** India's engagement with Antarctica marked the initiation of the **Indian Antarctic Programme**, a multi-disciplinary, multi-institutional programme under the control of the NCPOR, Ministry of Earth Sciences.

Statement 2 is not correct:

- The **Programme** gained global acceptance with **India's signing of the Antarctic Treaty** and subsequent construction of the **Dakshin Gangotri** (in 1983), **Maitri** (in 1989), **Bharati** (in 2012) were commissioned.
  - **Currently**, India has **two operational research stations** in Antarctica: Maitri and Bharati.
  - Dakshin Gangotri was **decommissioned** during the late 1980s.

18. (a)

**In News:** Recent studies claim that pink hydrogen facilities can achieve a high capacity factor due to the steady base load profile of nuclear power.

**Pink hydrogen** is **generated through the electrolysis of water**, similar to green hydrogen. However, the **key difference** lies in the source of electricity used for the process. Pink hydrogen **uses electricity generated by nuclear power**.

19. (c)

**Green hydrogen** refers to hydrogen that is produced **using renewable energy sources**, such as wind, solar, or hydropower, through a process called **electrolysis**.

- Electrolysis involves splitting water ( $H_2O$ ) into hydrogen ( $H_2$ ) and oxygen ( $O_2$ ) using an electric current.
- The use of Green Hydrogen as a fuel in Buses, Trucks and 4-wheelers is based on **fuel cell/internal combustion engine**-based propulsion technology.

20. (a)

Statement 1 is correct: The skin is the largest organ in the human body.

- The **pigment melanin** determines the colour of skin and it is produced by cells called **melanocytes**.

Statement 2 is not correct: Scientists widely believe **exposure to ultraviolet light from the Sun** has been the dominant driver of skin colour throughout history.

The **diversity of skin colour** across human populations is a product of human genetics, **the migration of peoples**, and the complex interplay between genes and the environment.

21. (c)

**Statements 1 and 2 are correct:** Osmosis is the term used to refer specifically to the diffusion of water across a differentially- or semi-permeable membrane.

- It is a common physical process observed in living cells and tissues of all organisms.
- It occurs spontaneously in response to a driving force and the net direction and rate of osmosis depends on both the pressure gradient and concentration gradient.
- It is defined as the movement of molecules of solvent from a region of its higher concentration to a region of its lower concentration across a selectively permeable membrane, such as the plasma membrane.

Water will move from its region of **higher chemical potential (or concentration)** to its region of **lower chemical potential** until equilibrium is reached.

22. (d)

**Context:** As the winter months fall behind us and summer heat starts to rise, this will provide the thriving ground to mosquitos.

**What are mosquito-borne diseases?**

- When a mosquito feeds on blood, it also swallows any viruses or parasites living in the blood. These viruses and parasites can be transferred to the next person the mosquito bites through its saliva.
- Any disease that is spread in this way from mosquito to human (or animal) is known as a 'mosquito-borne disease'.
- Common types of mosquito-borne diseases include malaria, dengue, West Nile virus, chikungunya, yellow fever and Zika.

23. (a)

**Statement 1 is correct: The glycaemic index (GI) is a rating system for foods containing carbohydrates.**

- It shows how quickly each food affects blood sugar (glucose) level when that food is eaten on its own.

**Statement 2 is not correct: High GI foods:** Carbohydrate foods that are broken down quickly by body and cause a rapid increase in blood glucose have a high GI rating.

**Low and medium GI foods:** Low or medium GI foods are **broken down more slowly** and cause a gradual rise in blood sugar levels over time.

24. (d)

Nobel prize-winning physicist **Peter Higgs** has died at the age of 94.

**Peter Higgs** was Born in England on May 29, 1929.

- He proposed the Higgs boson in 1964 which is also known as "the God particle" along with **François Englert**, and four other theorists to explain why certain particles have mass.

He theorised that there must be a **subatomic particle** of a certain dimension that would explain how other particles — and therefore all the stars and planets in the universe — acquired mass.

25. (a)

**Statement 1 is correct: Hepatitis B:** It is an infection of the liver caused by the hepatitis B virus. The infection can be acute (short and severe) or chronic (long term).

- **Symptoms:** Hepatitis B is known to cause acute infection with nausea, vomiting and yellowing of the eye and skin for several weeks. Liver failure happens in severe cases.
- **Spread:** It can spread through contact with infected body fluids like blood, saliva, vaginal fluids and semen. It can also be passed from a mother to her baby.
- **Treatment:** Hepatitis B can be prevented with a safe and effective vaccine. The vaccine is usually given soon after birth with boosters a few weeks later. It offers nearly **100% protection against the virus**.

**Statement 2 is not correct: Hepatitis C:** It is an inflammation of the liver caused by the hepatitis C virus. The severity from a mild illness to a serious, lifelong illness including liver cirrhosis and cancer.

- **Spread:** The hepatitis C virus is a **bloodborne virus** and most infection occur through exposure to blood from unsafe injection practices, unsafe health care, unscreened blood transfusions, injection drug use and sexual practices that lead to exposure to blood.

**Treatment:** Direct-acting antiviral medicines (DAAs) can cure more than 95% of persons with hepatitis C infection, but access to diagnosis and treatment is low. There is currently **no effective vaccine** against hepatitis C.

26. (a)

**Statement 1 is correct:** This is the core principle of the piezoelectric effect. When a piezoelectric material experiences mechanical stress (compression or stretching), an electric voltage is generated across its faces.

**Statement 2 is correct:** The piezoelectric effect is reversible. Applying an electric field to a piezoelectric material can cause it to deform physically, making it useful for actuators.

**Statement 3 is not correct:** Piezoelectric materials are typically insulators or semiconductors, not good conductors of electricity. High conductivity would diminish the voltage generated by the piezoelectric effect.

**Statement 4 is not correct:** While some naturally occurring minerals exhibit the piezoelectric effect, many synthetic materials like ceramics and polymers have also been developed with this property.

27. (d)

**Statement 1 is correct:** The Outer Space Treaty (OST) of 1967 is a cornerstone treaty for peaceful uses of outer space. It prohibits placing WMDs in space and militarizing celestial bodies like the Moon.

**Statement 2 is correct:** While there's no single treaty solely on space debris mitigation, existing treaties like the OST lay a foundation for cooperation.

**Statement 3 is correct:** The Liability Convention establishes international liability for damages caused by space objects. This incentivizes states and private companies to operate responsibly in space and minimize debris generation.

28. (d)

**Both the statements are incorrect:** Whooping cough is a **highly contagious respiratory illness** also known as **pertussis** caused by the bacterium *Bordetella pertussis*.

- It gets its name from the **"whooping" sound** which the patient experiences while coughing.
- **Symptoms:** It begins with cold-like symptoms accompanied with low-grade fever.
  - As it progresses, coughs get accompanied with a "whooping" sound and these spells may last for a while leading to vomiting.
- **Vaccination:** There are 2 vaccines which protect children against whooping cough: DTaP and Tdap.

29. (c)

**Both the statements are 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.
- Cervical cancer is the **fourth most common cancer in women**.
- Cervical cancer ranks as the **2nd most frequent cancer among women in India** and the 2nd most frequent cancer among women between 15 and 44 years of age.

30. (a)

Russia

Context

- Russia successfully test-launched its Angara-A5 space rocket from the Vostochny Cosmodrome.

About

- The Angara-A5 is a **42.7-metre**, three-stage rocket weighing about **773 tonnes** and capable of carrying **24.5 tonnes** into space.

- It is set to replace the **Proton M** as Russia's heavy-lift rocket.
- It is Russia's first post-Soviet space rocket.

### 31. (c)

**In News:** Recently, Astronomers unravelled the mystery of the 'Dragon's Egg' Nebula.

**Stellar Fratricide:**

- Researchers have unravelled the mystery, attributing the magnetic field to a phenomenon they refer to as **Stellar Fratricide**.
- In this phenomenon, the scientists predicted that the larger star appears to have consumed a smaller sibling star.
- The **blending of stellar material** during such a merger or hostile takeover could create a **magnetic field** in the combined star born in this process.

### 32. (b)

**In News :** The rate at which the universe is expanding is a topic of ongoing research and it has been a subject of study for scientists across the globe.

**Measuring the Expansion Rate:**

- The rate of expansion of the universe is measured in **kilometres per second per megaparsec (km/s/Mpc)**.
  - One parsec is equivalent to 3.26 light-years.
- Based on various studies, cosmologists have estimated space to be expanding at around 68 km/s/Mpc.
  - However, there is a **discrepancy** in the measurements of the universe's expansion rate, known as the **Hubble Tension**.

**The Hubble Tension:**

- It is a big open problem in cosmology.
- There are two equally valid ways to measure how fast the universe is expanding, but they have yielded two very different estimates.
  - No amount of rechecking and refining calculations has made this tension go away.

### 33. (c)

**Context:** Both the statements are correct.

**About Mpox**

- Mpox (formerly known as monkeypox) is a viral illness caused by the monkeypox virus, a species of the genus Orthopoxvirus.
- It is a **zoonotic disease**, meaning it can be spread between animals and people.
- The first case of mpox was reported in **Denmark (1958)** in monkeys and in humans in 1970 in western Africa.
- **Common symptoms** of mpox are: rash, fever, sore throat, headache, muscle aches, back pain, low energy and swollen lymph nodes.
- The disease is usually self-limiting, with most of those infected recovering within a few weeks without the need for treatment.
- However, the disease can be more severe, especially in young children, pregnant women, and individuals who are immunocompromised.

### 34. (d)

**Context:** Recently, the World Health Organisation (WHO) prequalified a new oral simplified vaccine for cholera.



### About the Euvichol-S

- Euvichol-S is a **simplified formulation** of the WHO prequalified inactivated **oral cholera vaccine**, Euvichol-Plus.
- **Cholera**, a **deadly diarrheal disease**, caused by the **bacterium Vibrio cholerae**, has been surging globally since 2021, with **high case fatality rates** despite the availability of simple, effective, and affordable treatment.

### 35. (a)

What is Llama 3?

- **Llama** or **Large Language Model Meta AI** is a family of LLMs introduced by Meta AI in 2023.
- **Llama 3**, the latest iteration of its LLM and has been released in two sizes, **8B and 70B parameters**.
- **Parameters** are a measure of the **size and complexity of an AI model** and generally, a larger number of parameters means an AI model is more complex and powerful.

### 36. (b)

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

Context

- Sweden and Slovenia became the **38th** and **39th** country respectively to sign the **Artemis Accords**.

About

- The **Artemis Accords** are a **set of principles and guidelines** for international cooperation in space exploration.
  - They are not a legally binding instrument.
- They were announced by NASA in **2020** and named after NASA's Artemis program which is aimed at returning humans to the Moon by the mid-2020s.
- The Accords mirror principles set out in **1967**, as part of the **Outer Space Treaty** to help govern international cooperation space.
- **Members:** Artemis Accords has 39 members including Australia, France, Germany, India, Japan, United Kingdom, United States of America etc.
  - India joined the Artemis Accords in 2023.
- **Russia and China** are not part of the Artemis Accords.

### 37. (a)

**Statement 1 is correct:** The FSSAI is an autonomous body established under the Ministry of Health & Family Welfare, not entirely independent.

**Statement 2 is correct:** The FSSAI is responsible for framing and enforcing food safety regulations, including licensing and registration of food businesses depending on their size and turnover.

**Statement 3 is not correct:** The FSSAI recognizes two certification schemes for organic food products in India:

National Programme for Organic Production (NPOP) by the Department of Agriculture and Cooperation. Participatory Guarantee System (PGS) for India. The FSSAI itself does not directly grant the "Jaivik" (Organic) certification.

### 38. (b)

**Context:** The Union Consumer Affairs Ministry asked the **Food Safety and Standards Authority of India (FSSAI)** to initiate **"appropriate action"** against the **Nestle group** for allegedly **selling baby products with high sugar content in India**.

## Food Safety Laws in India

- The primary legislation concerning food safety in India is the **Food Safety and Standards Act, 2006 (FSS Act)**, which was enacted to consolidate various food laws in the country.
- **Food Safety and Standards Authority of India (FSSAI):** FSSAI is the apex food regulator of India under the Ministry of Health & Family Welfare.
  - It regulates and monitors the manufacture, processing, distribution, sale, and import of food products to ensure they meet safety standards.
- **Food Testing and Certification:** FSSAI accredits laboratories for testing food products to ensure compliance with safety standards.
- Food products require certification from authorized laboratories before they can be marketed or sold.

### 39. (b)

**Statement 1 is not correct:** 5G has **low** latency when compared to 4G which will support new applications such as AI, IoT, and virtual reality efficiently. It enables mobile phone users to open a web page and browse things without any hassles.

**Statement 2 is correct:** Low latency of 5G increases the bandwidth that will help transfer the data as soon as possible. Mobile phone users can **ensure a faster connection with more bandwidth** after choosing a 5G network.

### 40. (c)

Both the Statements are correct.

What is the Aditya-L1 mission?

- **Aditya-L1** is the first space-based Indian observatory to study the Sun. It was launched on September 2, 2023 by the **PSLV-C57**.
- Solar observatory is placed at Lagrangian point **L1** for "Observing and understanding the chromospheric and coronal dynamics of the Sun" in a continuous manner.
- Placing the Aditya-L1 in a halo orbit around L1 point has advantages as compared to placing in a Low Earth Orbit (LEO):
  - It provides a smooth Sun-spacecraft velocity change throughout the orbit, appropriate for helioseismology.
  - It is outside of the magnetosphere of Earth, thus suitable for the "in situ" sampling of the solar wind and particles.
  - It allows unobstructed, continuous observation of the Sun, and view of earth for enabling continuous communication to ground stations.
- **It is equipped with seven payloads** (instruments) on board with four of them carrying out remote sensing of the Sun and three of them carrying in-situ observation.

### 41. (c)

Ethylene oxide (EtO) is a widely used sterilant in healthcare settings because of its alkylating ability. It effectively sterilizes medical devices by reacting with essential cellular components of microorganisms, such as DNA and RNA. This disrupts their growth and reproductive processes, rendering them inactive.

### 42. (c)

Researchers from Kerala have reported a series of cases wherein the use of fairness creams has been linked to **nephrotic syndrome**.

- Doctors describe a series of 15 cases of **Membranous Nephropathy**.



Statements 1,2 and 3 are correct : **Membranous Nephropathy(MN)** is an **autoimmune disease** resulting in **nephrotic syndrome**, a condition when too much **protein is released into the urine** (proteinuria), ultimately resulting in renal failure.

- A kidney biopsy is used to confirm the diagnosis of membranous nephropathy.
- In approximately 70% to 80% of cases of MN, the target antigen has been **phospholipase A-2 (PLA2R)**.
- Recently, another antigen, Neural epidermal growth factor-like **protein 1 (NELL-1)**, has been linked to a rare form of MN.
- **Treatment:** The key to limiting further kidney damage was recognising the actual cause of nephrotic syndrome by diligently focussing on the patient's clinical history.

**Immunosuppressive** therapy plays a major role in the treatment of this disease.

43. (d)

Liquid nitrogen is colorless and odorless. It has an extremely low boiling point of -195. 79 °C, making it ideal for cryogenic applications. It is a commonly used refrigerant in scientific research due to its ability to maintain very low temperatures.

Liquid nitrogen itself is not flammable. However, materials in contact with it can become extremely cold and potentially shatter or become susceptible to combustion if exposed to an ignition source.

44. (b)

In News

- Microsoft unveiled the latest version of its 'lightweight' AI model – **the Phi-3-Mini**.

About Phi-3-mini

- It is the smallest **AI model developed by Microsoft**. It is believed to be the first in a series of three smaller models planned by Microsoft.
- It reportedly **outperformed models of the same size** and the next size up across a variety of benchmarks, in areas like language, reasoning, coding, and maths.

45. (d)

Opioid drug

Context

- The US Secretary of State spoke about the production and export of “synthetic opioid precursors”, specifically the drug fentanyl during his recent visit to China.

About

- Fentanyl is a potent **synthetic opioid drug** approved by the Food and Drug Administration for use as an analgesic (for pain relief) and anesthetic.
- It is approximately 100 times more potent than morphine and 50 times more potent than heroin as an analgesic.

46. (a)

**In News:** Plastic packaging has become ubiquitous in modern society, offering convenience and durability for a wide range of products.

- However, concerns have been raised regarding the potential health risks associated, due to the chemicals that leach out from plastics during use including bisphenol A (BPA).

**Statement 1 is correct :** Bisphenol A (BPA) is a chemical produced in large quantities for use primarily in the production of polycarbonate plastics.

**Statement 2 is not correct:** Bisphenol A (BPA) is found in various products including shatterproof windows, eyewear, water bottles, and epoxy resins that coat some metal food cans, bottle tops, and water supply pipes.

- The primary source of exposure to BPA for most people is through the diet.
- While air, dust, and water are other possible sources of exposure, BPA in food and beverages accounts for the majority of daily human exposure.

**47. (b)**

**Statement 1 is not correct:** Salmonella is a group of bacteria that can cause gastrointestinal illness and fever called salmonellosis.

**Statement 2 is correct:** Salmonella naturally lives in animals' intestines and can be found in their feces (poop).

The bacteria then spread to humans if they come in contact with salmonella-infected animals or items in their environment.

# Environment & Ecology

1. 'Nitroplast' recently seen in the news, is related to which of the following?
  - (a) Supercomputer
  - (b) Dwarf Planet
  - (c) Type of Virus
  - (d) A Organelle within a Eukaryotic Cell
2. With reference to the Galathea National Park, which of the following statements is/are correct?
  1. It is located on the island of Great Nicobar in the Nicobar Islands.
  2. It is a nesting site for the largest turtle in the world, Leatherback sea turtles.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. With reference to the Corals, consider the following statements:
  1. Coral reefs are created by millions of tiny polyps forming large carbonate structures.
  2. Fringing reefs are formed around sunken volcanoes.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 the *India Meteorological Department (IMD)*, consider the following statements:
  1. It functions under the administrative control of the Ministry of Environment, Forest and Climate Change (MoEF&CC).
  2. It is one of the six regional specialised meteorological centres of the World Meteorological Organisation (WMO).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. The International Network for Terrestrial Research and Monitoring in the Arctic (INTERACT) is a significant initiative for studying the Arctic environment because:
  - (a) It focuses solely on glaciology and ice loss.
  - (b) It provides access to research stations in remote and challenging locations across the Arctic.
  - (c) It is funded and managed solely by Russia.
  - (d) It is exclusively focused on the ecological impact of Arctic communities.
6. Bloom of *Pelagia Noctiluca* was recently reported across the Visakhapatnam coast, India. It is related to
  - (a) Neelakurinji flower
  - (b) Venomous jellyfish
  - (c) Silverline butterfly
  - (d) Large softshell turtle

7. With reference to the Cicadas, which of the following statements is/are correct?
1. Cicadas are mammals and members of the superfamily Cicadoidea.
  2. They produce loud songs, by the rapid buckling and unbuckling of drum-like tymbals.
- 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 Criollo, which of the following statements is/are correct?
1. It is a group of cattle breeds descended from Iberia.
  2. Criollo has a short, slick-hair coat that provides it thermotolerance.
- 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 invasive wildlife in India?
1. African Catfish
  2. Nile Tilapia
  3. Red-Bellied Piranha
  4. Alligator Gar
- Select the correct answer using the code given below:
- (a) 1 and 2 only
  - (b) 1, 2, and 3 only
  - (c) 2, 3 and 4 only
  - (d) 1, 2, 3 and 4
10. With reference to Chital (spotted deer), which of the following statements is/are correct?
1. It is native to the Indian subcontinent.
  2. It has been declared a Least Concern species by the International Union for Conservation of Nature (IUCN).
- 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
11. Which of the following statements are correct regarding Gangetic River Dolphins ?
1. It can only live in freshwater and is found in India, Bangladesh and Nepal.
  2. It is a Schedule I animal under the Wild Life (Protection) Act, 1972.
  3. It is India's national aquatic animal.
  4. It has been declared a Vulnerable species by the International Union for Conservation of Nature(IUCN).
- Select the correct answer using the code given below:
- (a) 1 and 2 only
  - (b) 1, 2, and 3 only

- (c) 2, 3 and 4 only  
(d) 1, 2, 3 and 4
12. With reference to the *greenhouse gases*, consider the following statements:
1. Methane is emitted during the production and transport of coal, natural gas, and oil.
  2. Carbon dioxide (CO<sub>2</sub>) is more potent than Methane at trapping heat in the atmosphere.
  3. Nitrous oxide is emitted during treatment of wastewater.
- How many of the statements given above are correct?
- (a) Only one  
(b) Only two  
(c) All three  
(d) None
13. Consider the following statements about the Green Credit Programme (GCP) in India:
1. It is a voluntary market-based mechanism to incentivize environmental actions.
  2. It operates under the existing Carbon Credit Trading Scheme of 2023.
  3. Credits earned can be traded between entities to offset environmental damage.
- Which of the statements given above is/are correct?
- (a) 1 only  
(b) 1 and 3 only  
(c) 2 and 3 only  
(d) 1, 2 and 3
14. With reference to the *Green Credit Programme*, consider the following statements:
1. It was announced under the government's 'Lifestyle for Environment' or 'LiFE' movement.
  2. It primarily focuses on afforestation and water conservation measures.
- 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
15. The rapid shrinkage of the Aral Sea is primarily attributed to:
- (a) Increased water usage for desalination plants in the region.  
(b) Construction of large dams on its feeder rivers for irrigation purposes.  
(c) Rising global sea levels causing saltwater intrusion.  
(d) Extensive commercial fishing leading to overexploitation of fish stocks.
16. Coral polyps, the building blocks of coral reefs, are:
- (a) Sessile marine invertebrates with a symbiotic relationship with algae.  
(b) Free-swimming marine animals.  
(c) Colonial freshwater organisms that form hard exoskeletons.  
(d) Deep-sea creatures that thrive in cold, dark environments.
17. The word Vasuki Indicus is sometimes mentioned in news in reference to:
- (a) Fossils of a kind of dinosaur  
(b) an early human species  
(c) Species of a Frog  
(d) Fossils of a kind of early species of snake

18. With reference to the Greenhouse Gases, consider the following statements:
1. Gases that trap heat in the atmosphere are called greenhouse gases.
  2. Among the Greenhouse gases, Sulphur hexafluoride has the highest global warming potential (GWP).
- 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
19. With reference to the World Earth Day, consider the following statements:
1. It is celebrated annually on April 22, and is also known as International Mother Earth Day.
  2. The theme for 2024 World Earth Day is 'Planet vs. Plastics'.
- 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. Consider the following statements with respect to Golden trevally:
1. It is only found in fishing grounds of Eastern Coastal areas.
  2. The IUCN Red list of threatened species classifies it as Near Threatened.
- 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
21. With reference to the UN Framework Convention on Climate Change (UNFCCC), consider the following statements:
1. It is an international treaty established to address the global challenge that came into force in 1994.
  2. Conference of the Parties (COP) is the supreme decision-making body of the UNFCCC and COP meetings are held annually.
- 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
22. Consider the following statements:
1. India is a signatory to the Global Methane Pledge, aiming for a 30% reduction in methane emissions by 2030.
  2. The New National Biogas and Organic Manure Programme (NNBOMP) incentivizes biogas plants that capture methane from waste.
- 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

23. The following options represent sources of global methane emissions. Order them in decreasing order in terms of global methane emissions:

1. Agriculture and livestock
2. Fossil fuel production and use
3. Waste management and Decomposition of organic matter in landfills
4. Natural sources

Choose the correct answer using the codes given below:

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

24. Consider the following pairs

***Species In News***

***IUCN Red List status***

- |                           |                       |
|---------------------------|-----------------------|
| 1. Slender billed Vulture | Critically Endangered |
| 2. Griffon Vulture        | Least Concern         |
| 3. Cinereous Vulture      | Near Threatened       |

How many of the above pairs are correctly matched?

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

25. Consider the following statements about permafrost:

1. Permafrost is found only in the Arctic region.
2. Thawing permafrost can release methane, a potent greenhouse gas, into the atmosphere.
3. Human activities like burning fossil fuels contribute to permafrost thawing.

Which of the above given statements is/are correct?

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

26. With reference to the Corals, which of the following statements is/are correct?

1. The invertebrates belong to a group of animals called Cnidaria.
2. Corals are formed by multiple small organisms known as polyps.

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

27. Which of the following are the contributing factors behind the frequent forest fires in India?

1. Temperatures
2. Precipitation
3. Vegetation
4. Moisture

Select the correct answer using the code given below:

- (a) 1, 2 and 3 only
  - (b) 2, 3 and 4 only
  - (c) 1 2 and 4 only
  - (d) 1, 2, 3 and 4
28. The word Chakisaurus Nekul is sometimes mentioned in news in reference to:
- (a) Fossils of a kind of dinosaur
  - (b) An early human species
  - (c) Species of a Frog
  - (d) Fossils of a kind of early species of Elephant

## Explanation (Environment & Ecology)

1. (d)  
An international team of researchers has discovered the “nitroplast” — first known nitrogen-fixing organelle within a eukaryotic cell.
- This finding challenges the long-held belief that only bacteria can fix nitrogen.
    - Nitrogen fixation is the process by which nitrogen is taken from its molecular form (N<sub>2</sub>) in the atmosphere and converted into nitrogen compounds useful for other biochemical processes.
  - The nitroplast organelle discovery marks the fourth instance of primary endosymbiosis in history, a process where a prokaryotic cell is engulfed by a eukaryotic cell and evolves into an organelle.
    - A symbiotic relationship where one organism lives inside the other is known as endosymbiosis.
2. (c)  
Both the Statements are correct.  
Galathea National Park
- Galathea National Park is a national park located in the Union Territory of Andaman and Nicobar Islands, India.
  - It is located on the island of Great Nicobar in the Nicobar Islands, which lie in the eastern Indian Ocean (Bay of Bengal).
  - The vegetation consists largely of tropical and subtropical moist broadleaf forests.
  - From February to December, the largest turtle in the world, the Leatherback turtle (*Dermochelys coriacea*), nests here.
3. (a)  
Statement 1 is correct: Corals are formed by multiple small, soft organisms known as polyps.
- They secrete a rocky chalk-like (calcium carbonate) exoskeleton around themselves for protection.
  - Coral reefs are therefore created by millions of tiny polyps forming large carbonate structures.
- Statement 2 is not correct: There are three types of coral reefs – fringing reefs, barrier reefs and atolls. Fringing reefs form along shorelines, barrier reefs form in open water and atolls are circular reefs that have formed around sunken volcanoes.
4. (b)  
In News:  
Statement 1 is not correct:
- India Meteorological Department (IMD) is an agency of the Ministry of Earth Sciences (MoES).
  - It is the principal agency responsible for meteorological observations, weather forecasting and seismology.
    - It releases the long range forecast in two stages in April and June.



Statement 2 is correct:

- It is also one of the six Regional Specialised Meteorological Centres of the World Meteorological Organisation (WMO).

5. (b)

INTERACT is an infrastructure project for studying the environmental changes happening in the Arctic and surrounding regions. Established under the auspices of SCANNET, an **existing Arctic network**.

- The network spans across northern Europe, the US, Canada, Greenland, Iceland, the Faroe Islands, and Scotland, as well as stations in northern alpine areas.
- It is a significant initiative aimed at building capacity for research and monitoring across the Arctic.

Importance

- **Capacity Building:** A major goal is to make research easier by providing access to stations, resources, and expertise for scientists worldwide.
- **Multidisciplinary Approach:** Research goes beyond just climate change. It encompasses various fields like:
  - Glaciology (ice studies)
  - Permafrost (frozen ground)
  - Climate
  - Ecology
  - Biodiversity

Biogeochemical cycling (movement of elements between living and non-living parts of the environment)

6. (b)

**Pelagia Noctiluca** is also known as the mauve stinger or purple-striped jellyfish.

- The Pelagia noctiluca is found worldwide in tropical and warm-temperature seas.
  - In January 2024, the Pelagia noctiluca bloom was spotted in Thailand
    - In the past, a bloom of Pelagia noctiluca had damaged penned salmon in Ireland.
  - It is rarely seen in the **East coast of India** but scores of the venomous jellyfish species were spotted across **RK Beach and other parts of the coast**.
  - It is **venomous** and causes **varying degrees of illness** such as diarrhoea, extreme pain, vomiting and anaphylactic shock (a severe allergic reaction that can develop quickly and be life-threatening).

7. (b)

Statements 1 is not correct and Statements 2 is correct.

Cicadas

- Cicadas are **insects** and members of the superfamily **Cicadoidea**.
- Cicadas have prominent eyes set wide apart, short antennae, and membranous front wings.
- Cicadas are found in tropical and temperate areas worldwide and occur in deserts, grasslands, and forests.
- They have an **exceptionally loud song**, produced in most species by the rapid buckling and unbuckling of drum-like tymbals.



8. (c)

Both the statements are correct.

Context

- Irish scientists have found that Criollo cattle are best suited to surviving and thriving in a warming world.

About

- Criollo is a group of cattle breeds descended from Iberian stock imported to the Americas.
- Criollo has a short, slick-hair coat that provides improved thermotolerance. This allows the animal to better withstand hot and humid weather.

9. (d)

**News:** The Andaman and Nicobar Islands administration has requested the assistance from Wildlife Institute of India to manage the population of invasive chital in Ross Island.

About

- Chital, originally native to mainland India, was introduced to Ross Island by the British in the early 20th century.
- They are posing threats to the endemic ecosystem of the island by eating away Andaman's forest cover and damaging its flora & fauna.

Invasive Alien Species

- Convention on Biological Diversity (CBD) defines invasive alien species as "species whose introduction and/or spread outside their natural past or present distribution threatens biological diversity".
- The Wildlife Protection Act, 1972 (amended in 2022), defines them as a "species of animal or plant which is not native to India, and whose introduction or spread may threaten or adversely impact wildlife or its habitat."
- These include animals, plants, fungi, and even microorganisms, and can influence all kinds of ecosystems.
- Some examples of invasive wildlife in India are African catfish, Nile tilapia, red-bellied piranha, and alligator gar.

10. (d)

**In News:** The Andaman and Nicobar Islands administration recently sought assistance from the Wildlife Institute of India to manage the increasing population of chital

**Statements 1 and 2 are correct : Chital (Axis axis)** is the most common deer species in Indian forests.

**Distribution :** It occurs in India , Nepal, Bhutan, Bangladesh and Sri Lanka

- Spotted Deer is native to the Indian subcontinent.

- Threats :** Chital are hunted for food, sport, and a variety of other purposes

**IUCN Red List Status : Least Concern**

11. (b)

**In News :** India's first centre for research on conserving the Gangetic river dolphin inaugurated in Patna, Bihar

**Statements 1, 2 and 3 are correct :** Gangetic river dolphin is blind and find its way and prey in river waters through echolocation. The Ganges river dolphin can only live in freshwater. It is a mammal primarily found in the Ganges and Brahmaputra Rivers and their tributaries in India, Bangladesh and Nepal.

- The Gangetic river dolphin is one of four freshwater dolphin species in the world.

- The other three are found in the Yangtze river in China (now extinct), the Indus river in Pakistan and the Amazon river in South America.
- The government of India declared it the National Aquatic Animal in 2009.
- It is a Schedule I animal under the Wild Life (Protection) Act, 1972.

**Statement 4 is not correct :** It has been declared an **endangered** species by the International Union for Conservation of Nature.

Ganges River Dolphin is listed on the Appendix I of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora).

## 12. (b)

**In News:** Recently, the National Oceanic and Atmospheric Administration (NOAA) revealed that global carbon dioxide levels reached a record high in 2023.

**Statement 1 is correct:**

- **Methane** is emitted during the production and transport of coal, natural gas, and oil.
  - Methane emissions also result from livestock and other agricultural practices, land use, and by the decay of organic waste in municipal solid waste landfills.

**Statement 2 is not correct:**

- Despite being **less abundant than CO<sub>2</sub>**, **Methane is more potent** at trapping heat in the atmosphere.
- Methane levels in the atmosphere are now more than **160% higher than their pre-industrial level**.

**Statement 3 is correct:**

- Nitrous oxide is emitted during *agricultural, land use, and industrial activities*; combustion of fossil fuels and solid waste; as well as **during treatment of wastewater**.
- The recent increase is being traced back to the use of nitrogen fertiliser and manure from the expansion and intensification of agriculture.

## 13. (a)

**Statement 1 is correct:** GCP is a voluntary scheme that encourages individuals and organizations to undertake activities like tree plantation, water conservation, and sustainable agriculture. Earning green credits provides them with economic benefits.

**Statement 2 is not correct:** GCP operates independently of the carbon credit scheme. While some GCP activities might have climate co-benefits, they are distinct programs.

**Statement 3 is not correct:** Currently, there's no trading mechanism for green credits. However, the possibility of future trading is being explored.

## 14. c

Recently, the Union Environment Ministry has made significant changes to the Norms of the Green Credit Programme.

**Statement 1 is correct: Green Credit Programme (GCP):** It is an innovative initiative launched by the Ministry of Environment, Forest and Climate Change (MoEF&CC) that was announced under the government's 'Lifestyle for Environment' or 'LiFE' movement.

- It aims to create a market-based mechanism for incentivising '*voluntary environmental actions*' by individuals, urban local bodies, communities and the private sector.

**Statement 2 is correct:** In its initial phase, the GCP focuses on **two key activities: water conservation and afforestation**.

It is designed to **incentivise voluntary environmental actions** across diverse sectors, by various stakeholders like individuals, communities, private sector industries, and companies.

15. (b)

The Aral Sea's shrinkage is a well-documented environmental catastrophe primarily caused by excessive diversion of water from its feeder rivers, the **Amu Darya and Syr Darya**, for irrigation projects during the Soviet era. This intensive water usage for agriculture left insufficient water to reach the Aral Sea, leading to its dramatic decline in water level and overall surface area.

**Option a is not correct:** Desalination plants are typically used in coastal regions with access to seawater. The Aral Sea is a landlocked lake, and desalination wouldn't be a significant factor in its decline.

**Option c is not correct:** Rising sea levels primarily affect coastal areas. The Aral Sea is an inland lake, and global sea level changes wouldn't directly impact its water levels.

**Option d is not correct:** While overfishing can be an environmental concern, it's not the primary reason for the Aral Sea's shrinkage. Water diversion for irrigation has been the dominant factor.

16. (a)

Corals are essentially animals, which are sessile, meaning they permanently attach themselves to the ocean floor. Each individual coral animal is known as a polyp and it lives in groups of hundreds to thousands of genetically identical polyps that form a 'colony'. Most corals contain algae called zooxanthellae — they are plant-like organisms — in their tissues. Corals and zooxanthellae have a symbiotic relationship.

While corals provide zooxanthellae a safe place to live, zooxanthellae provide oxygen and organic products of photosynthesis that help corals to grow and thrive. Zooxanthellae also give bright and unique colours to corals.

17. (d)

Fossils of a kind of early species of snake

Context

- Researchers at the IIT Roorkee have reported the discovery of fossils of one of the largest snakes that ever existed on Earth.

About

- The fossils were found in **Kutch, Gujarat**, and the reptile, named Vasuki Indicus, could have been anywhere between 10 meters and 15 meters long.
  - Vasuki refers to the mythical snake often depicted around the neck of the Hindu god Shiva.
- The reptile existed **47 million years ago** during a period called the **Middle Eocene**, when Africa, India and South America were one, conjoined landmass.
- It likely had a broad and **cylindrical body**, hinting at a robust and powerful build and was as big as **Titanoboa**, a massive snake that once roamed the earth and is reportedly the longest ever known.

18. (c)

**Both the statements are correct:** Gases that **trap heat in the atmosphere** are called **greenhouse gases**. The gases act like the glass walls of a greenhouse – hence the name, greenhouse gases.

Global warming potential (GWP) is a metric used to compare the ability of different greenhouse gases to trap heat in the atmosphere. Among the various GHGs like CO<sub>2</sub>, Methane, Nitrogen Oxide, the Sulphur hexafluoride has the highest global warming potential (GWP).

19. (c)

**Both the statements are correct:** World Earth Day, also known as International Mother Earth Day, is Celebrated annually on April 22.

- The theme for 2024 is 'Planet vs. Plastics.'

- It highlights the threat plastics pose to the planet and human health, thereby calling an end to all plastic waste by demanding a **60% reduction in the production of plastics by the year 2040.**

**20. (d)**

The ICAR-Central Marine Fisheries Research Institute, Kochi has developed seed production technology for golden trevally

**Statements 1 and 2 are not correct :** Golden trevally(Gnathanodon speciosus) is also known as the golden kingfish and It is a high-value marine fish.

- It is a reef-associated fish and It lives in the company of larger fishes like skates, sharks, groupers etc.
- It is distributed throughout the Indo-West Pacific.
- It is primarily found in reef area **fishing grounds in Tamil Nadu, Puducherry, Kerala, Karnataka, and Gujarat,**

IUCN Red List status : listed as Least Concern.

**21. (c)**

**Both the statements are correct: UN Framework Convention on Climate Change (UNFCCC)**

- It is an international treaty established to address the global challenge that came into force in 1994.
- Aim: To stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system.

**Key features of the UNFCCC:**

- **Parties and Membership: The Convention has 198 members.**

**Conference of the Parties (COP):** It is the **supreme decision-making body** of the UNFCCC and COP meetings are **held annually.**

**22. (b)**

**Statement 1 is not correct:** India is not currently part of the Global Methane Pledge, an international agreement to reduce methane emissions by 30% by 2030.

**Statement 2 is correct:** The New National Biogas and Organic Manure Programme (NNBOMP) and the Gobar-Dhan scheme encourage the use of biogas produced from cattle dung and organic waste. Hence, these initiatives incentivize the capture of methane from waste.

**23. (d)**

Agriculture and livestock sector is the largest source of human-caused methane emissions.








Methane leaks from various stages of natural gas production, processing, and transportation contribute significantly after Agriculture and livestock.

Landfills generate methane as organic waste decomposes anaerobically and produce significantly less methane than above two.

While natural sources emit methane, human activities are the dominant contributors.

24. (c)

Vultures, including those residing in protected areas, continue to remain at immense risk from diclofenac, a painkiller that is used for treating cattle.

<i>Species</i>	<i>IUCN Red List Status</i>
Oriental White-backed Vulture ( <i>Gyps bengalensis</i> )	
Slender billed Vulture ( <i>Gyps tenuirostris</i> )	
Long billed Vulture ( <i>Gyps indicus</i> )	
Egyptian Vulture ( <i>Neophron percnopterus</i> )	
Red Headed Vulture ( <i>Sarcogyps calvus</i> )	
Griffon Vulture ( <i>Gyps fulvus</i> )	
Himalayan Griffon ( <i>Gyps himalayensis</i> )	
Cinereous Vulture ( <i>Aegypius monachus</i> )	
Bearded Vulture or Lammergeier ( <i>Gypaetus barbatus</i> )	

25. (b)

**Statement 1 is not correct:** Permafrost, or permanently frozen ground, covers a quarter of the northern hemisphere. While permafrost is most prevalent in the Arctic, it can also be found in high mountain regions.

**Statement 2 is correct:** Permafrost contains large stores of organic matter. As permafrost thaws, this organic matter decomposes and releases methane, a greenhouse gas more potent than carbon dioxide at trapping heat in the atmosphere.

**Statement 3 is correct:** The burning of fossil fuels releases greenhouse gases that contribute to global warming, which in turn leads to permafrost thaw.

26. (c)

Both the Statements are correct.

What are Corals?

- Corals are **invertebrates** that belong to a large group of animals called **Cnidaria**.
  - Corals are formed by multiple small, soft organisms known as polyps.
  - They secrete a rocky chalk-like (calcium carbonate) exoskeleton around themselves for protection.
  - Coral reefs are therefore created by millions of tiny polyps forming large carbonate structures.
- **Appearance:** Corals range in color from **red to purple and even blue**, but are most commonly shades of **brown and green**.
  - They get most of their colors from the millions of microscopic algae that grow inside each polyp's tissues.
- There are three types of coral reefs – fringing reefs, barrier reefs and atolls.
- Fringing reefs **form along shorelines**, **barrier reefs form in open water** and **atolls are circular reefs** that have formed around **sunken volcanoes**.

27. (d)

**News:** Recently, the Indian Air Force conducted a 'Bambi Bucket Operation' to control the forest fire that broke out in Uttarakhand's Nainital district.

How frequent are forest fires in India?

- Forest fires in India are mostly experienced during the summer months from April to June.
- Factors like **temperatures, precipitation, vegetation, and moisture** contribute to the scale and frequency of these fires.
- According to the Forest Survey of India (FSI) nearly 36 percent of India's forests are prone to frequent fires.

Impact

- In India around 3 million hectares of forest areas are annually affected by forest fires, causing a loss of around Rs. 440 crores.

Mitigation measures

- The Ministry of Environment, Forest and Climate Change has suggested methods such as:
- construction of watch towers for early detection; deployment of fire watchers; involvement of local communities, and the creation and maintenance of fire lines to prevent forest fires.

28. (a)

Fossils of a kind of dinosaur

Context

- Paleontologists from Argentina announced the discovery of a dinosaur, named Chakisaurus nekul.

## About

- Chakisaurus nekul was a new **medium-sized herbivorous dinosaur** and lived about 90 million years ago in the **Late Cretaceous period** in present day Patagonia.
- It was found in the **Pueblo Blanco Natural Reserve**, in the southern province of Río Negro, an area rich in fossils.
- It is estimated that the largest Chakisaurus reached **2.5 or 3 meters long** and was **70 centimeters high**.
- The dinosaur was a **fast runner** and had its **tail curved** unusually downward.



## Miscellaneous

1. Consider the following statements with reference to Global Hepatitis Report 2024.
  1. It is the first consolidated report of the United Nations Development Programme (UNDP) on viral hepatitis.
  2. According to a recent report, India accounted for the highest number of cases of hepatitis B and C in 2022.

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
2. Report titled as 'Financing for Sustainable Development Report 2024' was released by:
  - (a) Greenpeace
  - (b) United Nations
  - (c) Conservation International
  - (d) World Resources Institute
3. The term 'Geroscience' is often used to describe:
  - (a) Ageing
  - (b) Science of sound
  - (c) Oceanic Pollution
  - (d) Tree rings
4. The act of digitally publicising a person's private details is known as:
  - (a) Doxxing
  - (b) Juice Jacking
  - (c) Nagging
  - (d) Basket Sneaking
5. The term '*Triple Agenda of G20*' sometimes appeared in the news, is related to:
  - (a) Regulating Artificial Intelligence
  - (b) Reforming Multilateral Bank
  - (c) Regulating Human Trafficking
  - (d) Reforming Labour Law
6. Which of the following reports are released by the International Labour Organisation (ILO)?
  1. Global Wage Report
  2. World Employment and Social Outlook
  3. World of Work Report

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

## Explanation (Miscellaneous)

### 1. (d)

**Statements 1 and 2 are not correct :** Recently , the 2024 Global Hepatitis Report was released by the World Health Organization (WHO).

- Hepatitis is an inflammation of the liver that is caused by a variety of infectious viruses and noninfectious agents leading to a range of health problems, some of which can be fatal. There are five main strains of the hepatitis virus, referred to as types A, B, C, D and E.
- It is the **first consolidated WHO report** on viral hepatitis epidemiology, service coverage and product access, with improved data for action.
- It presents the latest estimates on the disease burden and the coverage of essential viral hepatitis services from **187 countries across the world**.
- According to the Report, **254 million people lived with hepatitis B and 50 million with hepatitis C in 2022** globally.
- The data shows that the estimated number of deaths from **viral hepatitis** increased from 1.1 million in 2019 to 1.3 million in 2022.
- **India accounted for the second-highest number** of cases of hepatitis B and C in 2022 after China, with 3.5 crore infections.

### 2. (b)

**In News :** Recently, the United Nations (UN) has recently released the '**Financing for Sustainable Development Report 2024**' highlighting the urgent need for increased investment in sustainable development to achieve the SDGs.

It finds that financing challenges are at the heart of the crisis and imperil the SDGs and climate action. The window to rescue the SDGs and prevent a climate catastrophe is still open but closing rapidly.

### 3. (a)

**In News:** Recently, it has been observed that Geroscience helps in addressing age-Related Diseases.

- Dr. Daniel Belsky (an epidemiologist at Columbia University) has coined the term 'geroscience', meaning geriatric, or related to age.
- He has devised a novel blood test which determines the pace at which a person is ageing.
- His group has devised a method which studies the formation of methyl groups through an enzyme in the DNA of senior citizens and finds that this methylation is sensitive to ageing.
- This is often referred to as 'gerozyme'.

### 4. (a)

**Context**

- In today's digital era, concerns of doxxing are increasing manifolds.

**About**

- The act of **digitally publicising a person's private details** is called **doxxing**.
  - Such as home addresses, phone numbers, private email IDs, medical conditions, government documents, live locations, etc.
- It allows abusers and criminals who are thousands of miles away **to target victims** by putting their private details online for others to exploit.
  - Such information is usually obtained through **illegal methods such as hacking or theft**.

5. (b)

**In News :** Recently, the International Monetary Fund (IMF) and World Bank focus on reforming Multilateral Development Banks (MDBs) to address 21st-century challenges.

- The G20 has set up an Independent Expert Group (IEG) to construct a roadmap for 'Multilateralism 2.0'.
  - It proposed a 'Triple Agenda' for MDBs.

**The Triple Agenda:**

- The **Independent Expert Group (IEG)** has proposed a triple agenda for MDBs.
- It includes:
  - Efforts to tackle global challenges, alongside their core mission of poverty reduction and shared prosperity;
  - To triple their sustainable lending level by 2030; and

To enhance their financial strength through capital adequacy improvements and general capital increases.

6. (d)

**Context:** The ILO released the report titled “Ensuring safety and health at work in a changing climate”.

**International Labour Organisation (ILO)**

- It is a specialised agency of the United Nations.
- It was established in 1919 by the **Treaty of Versailles** as an affiliated agency of the **League of Nations**, and became the first affiliated specialised agency of the **United Nations in 1946**.
- **Headquarter:** Geneva, Switzerland.
- India is a founder member of the ILO.
- **Flagship Reports of ILO:**
  - Global Wage Report;
  - World Employment and Social Outlook;
  - World Social Protection Report;
  - World of Work Report.