

# General Studies

## Current Affair Test (December-2024)

**1. Ans.: b)**

Statement 1 is correct: The Act provided for a federal government structure, which aimed to distribute power between the Centre and provinces. However, the federal provisions were never fully implemented due to opposition from princely states.

Statement 2 is correct: It introduced provincial autonomy, allowing provinces to govern in certain areas without interference from the central government. Governors retained discretionary powers, but elected provincial legislatures were granted control over subjects listed in the Provincial List.

Statement 3 is incorrect: The Act did not establish an independent judiciary. While it created a Federal Court (precursor to the Supreme Court), the judiciary remained subject to British oversight, limiting its independence.

**2. Ans.: (d)**

Statement 1 is incorrect: The OPCW was established in 1997 as an independent international organization, not as part of the United Nations framework. It serves as the implementing body of the Chemical Weapons Convention (CWC).

Statement 2 is incorrect: The OPCW's mission is not limited to verifying the destruction of declared chemical weapons stockpiles. Its mandate includes preventing the re-emergence of chemical weapons, providing assistance and protection to member states, promoting international cooperation for peaceful uses of chemistry, and ensuring compliance with the CWC.

Statement 3 is incorrect: The Hague Award, established in 2014, recognizes individuals and organizations advancing the goals of the CWC, not member states.

**3. Ans.: (c)**

The primary aim of IPSN is to improve public health decision-making through pathogen genomic surveillance. It tracks the evolution, spread, and impact of pathogens, providing critical data to address outbreaks and pandemics effectively.

Genomic surveillance enables early detection of mutations in pathogens, helping governments and organizations develop targeted responses to potential health crises.

The IPSN focuses on capacity-building in low- and middle-income countries (LMICs), ensuring equitable access to genomic tools and fostering international collaboration.

While the IPSN contributes to diagnostic enhancements and vaccine research indirectly, its core objective is improving decision-making by analyzing pathogens' genetic data.

**4. Ans.: (a)**

The primary source of antibiotic contamination in milk is antibiotic residues from veterinary treatments, especially those used for controlling mastitis in dairy animals. Mastitis is a common infection in lactating animals, often treated with antibiotics. If the withdrawal period (time required for antibiotics to clear from the animal's system) is not observed, residues can remain in the milk.

Other contributing factors include improper veterinary drug use and the mixing of milk from treated and untreated animals during collection, increasing the likelihood of contamination.

**5. Ans.: (a)**

Statement 1 is correct: The Periyar River originates in the Sivagiri Hills of the Western Ghats. It flows through various regions of Kerala, including Periyar National Park, and finally empties into the Arabian Sea.

Statement 2 is correct: The Periyar powers the Idukki Dam, which is among the largest hydroelectric projects in Kerala. This dam, along with the Cheruthoni and Kulamavu dams, forms a reservoir system that provides significant hydroelectricity to the state.

Statement 3 is incorrect: The Periyar River does not flow into the Bay of Bengal. Instead, it empties into the Arabian Sea, making this statement factually inaccurate.

**6. Ans.: (c)**

Option c is incorrect because the ICC represents a wide range of industries, including organic and inorganic chemicals, petrochemicals, fertilizers, pesticides, plastics, specialty chemicals, and more. It is not limited to the organic chemical sector. The ICC also promotes sustainability, safety, and innovation through initiatives like the Responsible Care (RC) program and Nicer Globe for safe chemical transportation.

**7. Ans.: (d)**

All three statements are incorrect:

Statement 1 is incorrect: The NRI evaluates economies on four pillars: Technology, People, Governance, and Impact, not "AI" or "Infrastructure."

Statement 2 is incorrect: India ranked 2nd, not 1st, among lower-middle-income countries, with Vietnam taking the top position.

Statement 3 is incorrect: The NRI is published by the Portulans Institute, a Washington-based non-profit research organization, not by the International Telecommunication Union (ITU).

About Network Readiness Index 2024:

Published by:Portulans Institute, a non-profit research institute based in Washington, DC.

Scope:Evaluates 133 economies on four pillars: Technology, People, Governance, and Impact, across 54 variables.

India's Rank:Improved from 60th (2023) to 49th (2024), with a score increase from 49.93 to 53.63.

India's Leadership:

1st rank in AI scientific publications, AI talent concentration, and ICT services exports.

2nd rank in FTTH/Building Internet subscriptions and Mobile broadband internet traffic.

4th rank in investment in telecommunication services.

Global Grouping:Ranked 2nd among lower-middle-income countries, after Vietnam

#### 8. Ans.: (b)

The Sabal-20 Drone's tandem rotor configuration and durability make it ideal for high-altitude, rugged terrains, and extreme conditions. It supports critical supply delivery in inaccessible areas, not urban, maritime, or recreational environments.

About Sabal-20 Drone:

Design: Electric unmanned aerial vehicle (UAV) with variable pitch technology and large rotors, inspired by Chinook helicopters.

Payload: Capable of carrying up to 20 kg, about half its own weight.

Technology: Features tandem rotor configuration for improved lift and stability in high-altitude and rugged terrains.

Features of Sabal-20 Drone:

VTOL (Vertical take-off and landing) Technology: Enables vertical take-off and landing, suitable for confined and challenging environments.

Stealth Operations: Low RPM design minimizes noise, ideal for sensitive missions.

Long-Range and High-Altitude Capability: Supports delivery of critical supplies like ammunition, food, and medical equipment in inaccessible areas.

Durability: Designed for tough terrains and extreme operational demands.

#### 9. Ans.: (d)

Statement 1 is incorrect: The New Moiré Superconductor is formed by twisting two layers of tungsten diselenide ( $\text{tWSe}_2$ ) at a small angle, creating flat energy bands essential for its superconducting properties. It does not involve molybdenum disulfide ( $\text{MoS}_2$ ).

Statement 2 is incorrect: Its superconducting state is achieved at  $-272.93^\circ \text{C}$ , which is close to absolute zero, not at room temperature. Room-temperature superconductivity remains a distant goal in physics.

Statement 3 is incorrect: The superconducting state in the New Moiré Superconductor is driven by strong electron-electron interactions, which play a key role in enabling its unique electronic properties. Weak interactions would not suffice to achieve this state.

#### 10. Ans.: (b)

Statement 1 is incorrect: While the IPSN was established by the World Health Organization (WHO) through its Hub for Pandemic and Epidemic Intelligence, its funding is sourced from multiple organizations, including the Gates Foundation, The Rockefeller Foundation, Wellcome, and the UN Foundation, ensuring a collaborative approach.

Statement 2 is correct: The IPSN focuses on tracking pathogen evolution, spread, and impact to enhance public health decision-making. It ensures equitable access to genomic tools, particularly in low- and middle-income countries (LMICs), to strengthen global health systems.

Statement 3 is incorrect: The IPSN is not limited to addressing avian flu. Its scope includes genomic surveillance for multiple pathogen priorities, such as avian flu, wastewater surveillance, and regional pathogen-specific issues, supporting broad public health initiatives.

#### 11. Ans.: (b)

Uttar Pradesh contributed 16.21% to India's total milk production in 2023-24, making it the top milk-producing state. It was followed by Rajasthan (14.51%), Madhya Pradesh (8.91%), and Gujarat (7.65%).

#### 12. Ans.: (b)

Peatlands play a crucial role in climate regulation due to their extraordinary ability to sequester carbon. Although they cover only about 3% of the Earth's land surface, they store more carbon than all the world's forests combined, making them one of the planet's most efficient carbon sinks.

However, when peatlands are degraded due to activities like drainage, agriculture, or fires, they release vast amounts of stored carbon dioxide ( $\text{CO}_2$ ) and other greenhouse gases into the atmosphere, exacerbating global warming.

While peatlands also emit methane under natural conditions, their overall role as carbon sinks far outweighs these emissions.

Additionally, peatlands contribute to water regulation and purification.

**13. Ans.: (a)**

Statement 1 is incorrect: The Demoiselle Crane breeds in Central Asia to Mongolia and Northeast China, not South Asia.

Statement 2 is correct: Known as koonj or kurjaa in Indian culture, the crane is symbolically significant in Gujarat and Rajasthan.

Statement 3 is incorrect: The species is listed as Least Concern by the IUCN, not Endangered.

About Siberian Demoiselle Crane:

Scientific Name: *Anthropoides virgo* (also referred to as *Grus virgo*).

Breeding Range: Central Asia to Mongolia, east to Northeast China.

Wintering Range: Primarily western India, with large congregations in Gujarat and Rajasthan.

Migration Path: Traditionally via Himalayan valleys, with notable reverse routes like Sukpak's journey through Russia, Kazakhstan, Turkmenistan, Afghanistan, and Pakistan.

Cultural Significance: Known as koonj or kurjaa in Indian culture, symbolically important in Gujarat and Rajasthan.

IUCN Status: Listed as Least Concern.

Conservation Efforts: Khichan in Rajasthan is India's first Demoiselle crane conservation reserve, hosting 20,000 cranes annually during their winter migration.

**14. Ans.: (d)**

The Siddi tribe is descended from Bantu peoples of East Africa. They arrived in India through the slave trade and other historical interactions, including as soldiers and merchants.

About the Siddi Tribe:

Descendants: Primarily of Bantu peoples from East Africa, brought to the Indian subcontinent through the slave trade, as well as soldiers, sailors, and merchants.

History:

- First arrived at Bharuch port in 628 AD with Arab merchants.
- Later brought as slaves by Arab conquerors, Portuguese traders, and Deccan Sultanates.
- Prominent historical figures include Malik Ambar and Jamal-ud-Din Yaqut.

Distribution in India: Concentrated in Karnataka, Goa, Gujarat, Maharashtra, Andhra Pradesh, and Tamil

Nadu, often in rural or forested areas.

Features:

- Diverse religions—Muslims, Hindus, and Christians.
- Unique cultural practices like the use of dammam, duf, and gumte instruments, and shared rituals like ancestor worship.
- Languages include Konkani, Urdu, Marathi, and regional dialects.

**15. Ans.: (c)**

The Song River is a seasonal river that originates in the Lesser Himalayas near Mussoorie, Uttarakhand, making Statement 1 incorrect.

Unlike perennial rivers that flow throughout the year, the Song River relies heavily on monsoonal rainfall, which classifies it as a seasonal river rather than a perennial one, making Statement 2 incorrect.

The river flows through Uttarakhand and acts as a seasonal feeder to the Ganga River system, contributing water primarily during the monsoon season. This makes Statement 3 correct.

**16. Ans.: (a)**

Statement 1 is correct: PAN 2.0 introduces a centralized data vault to strengthen data security, ensuring robust protection of sensitive information related to Permanent Account Numbers (PAN). This feature enhances cybersecurity measures compared to the current system.

Statement 2 is incorrect: PAN 2.0 aims to streamline grievance redressal through a unified portal, providing a centralized and efficient mechanism for addressing issues related to PAN services. This marks a significant improvement over the current decentralized approach.

Statement 3 is incorrect: Existing PAN cards will remain valid, and individuals will have the option to upgrade to PAN 2.0 for free. The new system is designed to enhance services and security while maintaining continuity for current PAN holders.

**17. Ans.: (b)**

Statement 1 is correct: India accounts for approximately 24% of global milk production, making it the largest producer of milk globally. This reflects the country's strong emphasis on the dairy sector, supported by a vast livestock population.

Statement 2 is incorrect: While India ranks first in milk production, it ranks second in egg production globally, with countries like China leading in egg production.

Statement 3 is correct: India's per capita milk availability in 2022-23 was 459 grams/day, significantly higher than the global average of 323 grams/day, highlighting its robust dairy production and availability.



**18. Ans.: (d)**

Peatlands emit approximately 1,941 Mt CO<sub>2</sub>e annually due to degradation, but this constitutes less than 10% of global CO<sub>2</sub> emissions.

However, Statement-II is correct as the Global Peatland Hotspot Atlas attributes peatland degradation and resulting emissions primarily to human activities such as agriculture, drainage, and fires.

**19. Ans.: (a)**

Statement 1 is incorrect: Primary microplastics are intentionally manufactured for specific applications, such as in cosmetics (microbeads), industrial processes, or synthetic textiles. They are not formed by the degradation of larger plastics. Secondary microplastics, on the other hand, result from the breakdown of larger plastics due to environmental factors like sunlight, mechanical forces, and ocean waves.

Statement 2 is incorrect: Secondary microplastics are not intentionally manufactured but are formed as a byproduct of plastic degradation in the environment.

Statement 3 is correct: Microplastics are used in drug delivery systems due to their ability to absorb and release chemicals in a controlled manner, making them valuable in medical and pharmaceutical applications. This property is leveraged for targeted drug delivery, enhancing therapeutic outcomes.

**20. Ans.: (b)**

Statement 1 is correct: The museum offers a 360-degree visual experience depicting India's history and the drafting of the Constitution.

Statement 2 is incorrect: The museum is maintained by OP Jindal Global University, not the Ministry of Culture.

Statement 3 is correct: It houses one of the original 1,000 photolithographic reproductions of the Constitution.

About Indian Constitution Museum:

- Location: OP Jindal Global University, Sonapat, Haryana.
- Maintained by: OP Jindal Global University in collaboration with the Centre for Museums.

Features:

- Photolithographic constitution copy: A centerpiece featuring one of 1,000 original reproductions.
- 360-degree visual display: Chronicles pre-Independence India and significant events in drafting the Constitution.
- Busts of Constituent Assembly Members: Nearly 300 sculptures honoring their contributions.
- Dr. BR Ambedkar section: Hologram and interactive displays featuring his philosophies, speeches, and writings.
- Multimedia presentations: Interactive insights into the drafting and evolution of the Constitution.

**21. Ans.: (d)**

Statement 1 is incorrect: The temple was built by Raja Raja Chola I, not Rajendra Chola I.

Statement 2 is incorrect: While the temple features Chola murals, stucco figures and additional elements were added later during the Maratha period.

**22. Ans.: (a)**

The wetlands are part of the Central Asian Flyway and serve as an important stopover for migratory bird species.

About Thrissur-Ponnani Kole Wetlands:

- Location: Spreads across Thrissur and Malappuram districts in Kerala, India.
- Significance:
  - Provides 40% of Kerala's rice requirement.
  - Acts as a natural drainage system for Thrissur city, Ponnani city, and surrounding districts.
  - Part of the Central Asian Flyway, supporting migratory bird species.
- Boundaries: Lies between Chalakudy River (South) and Bharathappuzha River (North), extending to Ponnani Taluk.
- Hydrological Network: Connects to Enamavu River, Canoli Canal, Chettuva River, and flows into the Arabian Sea.

Soil Fertility: Enriched by alluvium soil deposited by Kechery and Karuvannoor rivers during monsoons.

**23. Ans.: (d)**

Space junk releases metals and pollutants like aluminum, copper, and soot, altering atmospheric chemistry and promoting cloud formation.

**24. Ans.: (d)**

Statement 1 is incorrect: The stupika (dome) is octagonal, not square-shaped.

Statement 2 is incorrect: The temple has two large gopuras adorned with intricate sculptures.

Statement 3 is incorrect: The inscriptions detail historical events, rituals, gifts, and construction overseen by Raja Raja Chola I.

About Brihadeeswarar Temple (Rajarajeswaram)

- Location: Thanjavur, Tamil Nadu, part of the UNESCO "Great Living Chola Temples."
- Era: Built in 1009 CE by Raja Raja Chola I, it is the largest and tallest Indian temple.

Design:

- Features a massive 70-meter pyramidal vimana with an octagonal dome-shaped stupika.
- Two large gopuras adorned with intricate sculptures.
- Sanctum houses a two-storey lingam of Lord Shiva.
- Cultural Significance: Repository of Tamil inscriptions detailing rituals, gifts, and the temple's

construction overseen by Raja Raja Chola himself.

- Artistry: Painted murals, sculptural narratives, and stucco figures (added later during the Maratha period).

Other Chola Temples:

- Gangaikonda Cholapuram (by Rajendra I).
- Airavatesvara Temple (by Rajaraja Chola II).

## 25. Ans.: (a)

About International Cooperative Alliance:

- Origin: Established in 1895 during the 1st Cooperative Congress in London, England.
- History: One of the oldest NGOs, representing over 1 billion cooperative members globally across 105 countries.
- Aim: To unite cooperatives worldwide, promote sustainable development, and support member organizations.
- Headquarters: Brussels, Belgium.
- Summits: Regular global and regional summits foster collaboration and address cooperative challenges.

## 26. Ans.: (b)

Munshi actively participated in the Civil Disobedience Movement (1930, 1932) and was jailed for his involvement.

Kanhaiyalal Maneklal Munshi (Ghanshyam Vyas)

- Birth: Born on 30th December 1887, in Gujarat.
- Freedom Fighter:
  - Active in the Indian Home Rule Movement as Secretary in 1915.
  - Participated in Civil Disobedience Movement (1930, 1932) and Individual Satyagraha (1940); jailed twice.
- Political Roles:
  - Elected to Bombay Legislative Assembly (1927, 1937); resigned during Bardoli Satyagraha.
  - Served as Home Minister of Bombay Presidency, managing communal riots.
- Educational Contributions:
  - Founded Bharatiya Vidya Bhavan in 1938, a renowned educational trust.
- Literary Achievements:
  - Authored over 50 books in Gujarati and English, including Krishnavatara and Saga of Indian Sculpture.
- Philosophical Influences:
  - Influenced by Shri Aurobindo, aligning with revolutionary ideas initially.

## 27. Ans.: (b)

The Kurram District is named after the Kurram River, which flows through the region.

About Kurram District:

- Location:

- Situated in Khyber Pakhtunkhwa, northwestern Pakistan.
- Borders Afghanistan with multiple crossings along the 192-km Durand Line.

- Key River:

- The district is named after the Kurram River (Pashto: Kwarma), derived from the Sanskrit word Krumu.

- Geographical Features:

- Lies in the Kurram Valley, a strategically significant and mountainous region.
- Shares borders with Afghan provinces like Logar, Paktia, and Nangarhar.

## 28. Ans.: (d)

India received a “medium” rating for climate policy due to some challenges in policy implementation but not due to delays in renewable energy targets. Its progress in large-scale solar projects and efficiency measures significantly contributed to its high overall performance.

India's Performance in CCPI 2025:

- Overall Rank: 10th, among the highest performers.
- Overall, only 22 of the 64 surveyed CCPI countries (including the EU) are on track, while 42 are lagging. India and the United Kingdom are two that are on track.

Category Ratings:

- GHG Emissions: High
- Energy Use: High
- Climate Policy: Medium
- Renewable Energy: Low

Strengths:

- Rapid renewable energy expansion, particularly in large-scale solar power projects.
- Introduction of energy efficiency standards and electric vehicle deployment.
- Low per capita emissions and energy use despite being the most populous country

## 29. Ans.: (c)

The Bhu-Neer Portal, developed by the Ministry of Jal Shakti, focuses on regulating and managing groundwater resources transparently and sustainably.

About the “Bhu-Neer” Portal:

- Ministry: Ministry of Jal Shakti, developed by Central Ground Water Authority (CGWA) in collaboration with NIC.
- Aim: To regulate, manage, and monitor groundwater resources transparently and efficiently, promoting sustainability.

Key Features:

- PAN-Based Single ID System: Simplifies user registration for all stakeholders.
- NOC with QR Code: Ensures verifiable and trackable compliance documentation.

- Streamlined Processes: Simplifies permit application for groundwater withdrawal.
- Centralized Database: Offers access to legal frameworks, groundwater policies, and sustainable practices at state and national levels.
- Ease of Doing Business: Aligns with the Prime Minister's vision by making groundwater regulation seamless and faceless.

### 30. Ans.: (b)

- The primary objective of the Central Value Added Tax (CENVAT) is to prevent double taxation and reduce cascading taxes in the production and service supply chain.
- Cascading taxes occur when a tax is levied on top of another tax, increasing the overall cost of goods and services.
- CENVAT achieves this by allowing manufacturers and service providers to claim tax credits for the excise duty or service tax paid on inputs, input services, or capital goods used in the production process.

Implemented under the CENVAT Credit Rules, 2004, the system simplifies the taxation process, ensuring that tax is levied only on the value addition at each stage. This not only lowers the tax burden on businesses but also promotes competitiveness by enabling them to reinvest savings in innovation and production. By eliminating tax redundancies, CENVAT also benefits consumers through lower prices, making it a critical component of India's pre-GST taxation framework.

### 31. Ans.: (d)

The State of the World's Children 2024 report by UNICEF highlights critical challenges and opportunities shaping the future of childhood globally. By 2050, Africa is projected to have the highest proportion of the global child population due to demographic shifts.

### 32. Ans.: (d)

About India's First Artificial Intelligence (AI) Data Bank:

- Launched By: Minister of Science and Technology.
- Event: Unveiled during the ASSOCHAM AI Leadership Meet 2024.

Purpose:

- To provide high-quality, diverse datasets for researchers, startups, and developers.
- To enable scalable and inclusive AI solutions.
- To enhance national security through real-time analytics of satellite, drone, and IoT data.

Applications:

- National Security: Strengthens real-time surveillance and cyber defense.
- Disaster Management: Facilitates predictive analytics for risk mitigation.
- Public Service Delivery: Optimizes governance and citizen services.

- Sectoral Impact: Governance, healthcare, business, education, and space exploration.
- Ethical Use: Frameworks to address algorithmic bias, data privacy, and equitable access.
- Vision: To ensure AI bridges societal divides, empowers citizens, and drives economic growth.

### 33. Ans.: (c)

On November 6, 2024, the Union Cabinet approved PM Vidyalaxmi, a Central Sector Scheme aimed at providing financial support to meritorious students pursuing higher education.

The scheme offers collateral-free and guarantor-free loans to cover tuition fees and related expenses for students admitted to select quality institutions ranked by the National Institutional Ranking Framework (NIRF).

About PM Vidyalaxmi Scheme:

- Objective: To provide financial assistance to meritorious students, eliminating financial constraints in accessing quality higher education.
- Eligibility: Available to students admitted to top 860 HEIs in India, as per NIRF rankings, covering over 22 lakh students annually.
- Loan features: Offers collateral-free, guarantor-free education loans with a user-friendly, digital application process.
- Credit guarantee: Government provides a 75% credit guarantee on loans up to ₹7.5 lakhs, supporting banks in loan expansion.
- Interest subvention: For families with an annual income up to ₹8 lakhs, a 3% interest subvention is provided on loans up to ₹10 lakhs. Full interest subvention is available to students with family incomes up to ₹4.5 lakhs under the PM-USP scheme.

Complementary schemes: Supplements existing schemes like CSIS and CGFSEL under PM-USP, offering comprehensive support for technical and professional courses in approved HEIs.

### 34. Ans.: (b)

Statement 1 is incorrect because CENVAT applies to both excise duty and service tax.

Statement 2 is correct as capital goods integral to manufacturing are eligible for CENVAT credit.

Statement 3 is correct since CENVAT replaced MODVAT under the CENVAT Credit Rules, 2004.

About Central Value Added Tax (CENVAT):

- What is CENVAT:

A tax credit system allowing manufacturers or service providers to claim a set-off on excise duty or service tax paid on inputs or input services used for manufacturing or providing output services.

- Rules Governing CENVAT:

Implemented under the CENVAT Credit Rules, 2004,



it replaced the Modified Value Added Tax (MODVAT). These rules define eligible goods, input services, and conditions for availing credit.

Criteria for CENVAT credit:

- Inputs: Goods used directly or indirectly in the production of final products.
- Capital goods: Machinery or equipment integral to the manufacturing process.
- Output services: Taxable services for which input credits can offset the service tax liability.
- Partial processing: Credits are allowed for partially processed goods.

**35. Ans.: (b)**

Statement 1 is incorrect because the GEEA's primary goal is to double global energy efficiency rates, not renewable energy capacity. Statements 2 and 3 are correct as the UAE leads the alliance by promoting best practices, public-private partnerships, and standardization across member countries.

About Global Energy Efficiency Alliance:

- Objective: Double annual global energy efficiency rates by 2030 and reduce carbon emissions.
- Vision: Aligns with the UAE Consensus from COP28 to minimize natural resource consumption.
- Leadership: UAE leads by sharing best practices, promoting knowledge transfer, and fostering public-private partnerships.
- Key Actions:
  - Encouraging investments in energy efficiency projects.
  - Developing technologies and policies to meet sustainability goals.
  - Promoting standardization across member countries.
- Focus on Africa: Highlights financing and technological solutions for African nations to boost energy efficiency.
- Collaboration: Invites global governments, organizations, and private sector leaders to unite under the alliance.

**36. Ans.: (c)**

About Panchachuli Mountain Range:

- Group of Peaks: Comprises five snow-capped peaks, forming a part of the Kumaon Himalayas in Uttarakhand, India.
- Altitude Range: Peaks rise from 6,334 m (20,781 ft) to 6,904 m (22,651 ft), with Panchchuli II being the tallest.
- Geographical Significance: Lies at the watershed between the Gori and Darmaganga valleys, near Munsiyari, and on the Gori Ganga-Lassar Yankti divide.
- Cultural Legend: Named after the Pandavas' "Five Chulis" (cooking hearths) from Indian mythology.
- First Ascent: Panchchuli II was first scaled by an

Indo-Tibetan Border Police (ITBP) team led by Mahendra Singh on May 26, 1973.

- Tourism Impact: Located 138 km from Pithoragarh, the peaks attract trekkers and pilgrims but face environmental degradation due to human activities.

**37. Ans.: (a)**

Research found that pathogen spillover from managed honey bees to wild pollinators poses a serious threat, with shared habitats facilitating disease transmission and endangering pollinator ecosystems.

Pathogen Spillover: Occurs when pathogens jump from one species (e.g., managed honeybees) to another (e.g., wild pollinators) due to shared habitats.

Pathogen Spillover: Happens when pathogens from wild species return to infect the original host species (e.g., managed honeybees), often in more virulent forms.

**38. Ans.: (a)**

About Exercise Poorvi Prahar:

- Objective: To enhance combat effectiveness and synergy across the Indian Army, Navy, and Air Force for integrated joint operations.
- Location: Forward areas of Arunachal Pradesh, emphasizing operational readiness in mountainous terrain.
- Participation: Cutting-edge military platforms including advanced fighter jets, reconnaissance aircraft, Chinook helicopters, Advanced Light Helicopters (Rudra), and M777 Ultra-Light Howitzers.
- Technological Integration: Utilisation of swarm drones, loitering munitions, and advanced situational awareness systems for precision strikes and enhanced flexibility.
- Strategic Relevance: Reinforces India's defence posture along the Eastern frontier, reflecting its capability to execute multi-domain operations across land, air, and sea.

**39. Ans.: (b)**

Statement 1 is correct: Fruit-bearing trees such as banana and papaya have been planted to provide food for the hornbills.

Statement 2 is correct: Hornbills are revered as symbols of peace and prosperity, fostering cultural and ecological harmony.

Statement 3 is incorrect: While the initiative emphasizes community-driven conservation, hunting bans are not explicitly mentioned as part of the efforts.

In Mayong village, Morigaon district, Assam, a unique community-driven conservation initiative has established an ideal habitat for the oriental pied hornbill, showcasing exemplary efforts in biodiversity conservation.

About Mayong Village Initiative:

- Community conservation: Villagers collectively support the nesting and breeding of oriental pied hornbills, ensuring their safety and well-being.
- Plantation drive: Fruit-bearing trees like banana and papaya have been planted extensively to provide natural food sources for the hornbills.
- Sacred connection: Hornbills are revered as harbingers of peace and prosperity, fostering a harmonious relationship with the community.

**40. Ans.: (d)**

Statement 1 is incorrect: The missile has a long range of over 1,500 km, making it suitable for deep-strike missions.

Statement 2 is incorrect: The missile has a multi-payload capacity, enabling it to carry both conventional and nuclear warheads.

Statement 3 is incorrect: While it has a naval version, the missile is designed for multi-domain use, including land, air, and naval platforms.

About India's First Hypersonic Missile:

- Features
- Mach 6 Speed: Travels six times the speed of sound, reducing enemy reaction time.
- Long Range: Covers over 1,500 km for deep-strike missions.
- Mid-Flight Manoeuvrability: Combines ballistic missile speed with cruise missile agility to evade defences.
- Multi-Payload Capacity: Can carry conventional or nuclear warheads.
- Advanced Tracking: Precision targeting ensured by cutting-edge multi-domain monitoring systems.
- Indigenous Design: Fully developed by DRDO, showcasing India's self-reliance in advanced defence technology.
- Capabilities:
  - Strategic Deterrence: Enhances defence readiness and border security.
  - Multi-Domain Use: Adaptable for land, air, and naval platforms, including ship-targeting.
  - Defence Evasion: Overcomes modern missile defence systems with speed and agility.
  - Precision Strikes: Pinpoint targeting of critical enemy assets with minimal collateral damage.
- Applications: Multiple uses across Army, Navy, and Air Force; naval version aimed at destroying enemy warships with precision at long ranges.
- Developmental Background: Builds upon the Hypersonic Technology Demonstrator Vehicle (HSTDV) project initiated in 2019.
- Global Context: Positions India alongside major military powers like China, Russia, and the US in hypersonic weapon technology.

**41. Ans.: (d)**

Statement 1 is incorrect: Pathogen spillover refers to the transfer of pathogens from managed honey bees to wild pollinators, not the other way around.

Statement 2 is incorrect: Pathogen spillback involves pathogens from wild species infecting the original host (e.g., managed honey bees), often in more virulent forms, rather than resistance development.

Statement 3 is incorrect: Shared habitats increase the chances of pathogen spillover as they facilitate close interaction between managed and wild pollinators, promoting disease transmission.

**42. Ans.: (c)**

The missile builds upon the Hypersonic Technology Demonstrator Vehicle (HSTDV) project, initiated by DRDO in 2019, marking a significant leap in India's defence capabilities.

**43. Ans.: (b)**

Explanation:

Statement 2 is incorrect.

- The GHI uses four primary indicators: undernourishment, child wasting, child stunting, and child mortality to measure hunger levels.
- India does not have the highest rate of child stunting in the world but does have the highest rate of child wasting at 18.7%.

The Ministry of Women and Child Development has criticized the GHI for not using data from India's Poshan Tracker, which shows a significantly lower child wasting rate (7.2%).

**44. Ans.: (a)**

Explanation:

Statement 2 is incorrect.

- In 2024, North Korea declared South Korea as its primary foe, signaling an end to reunification efforts.
- The Korean War ended in 1953 with an armistice, not a peace treaty. The DMZ was established, but the war has technically never ended.

North Korea withdrew from the NPT in 2003 and has since developed and tested nuclear weapons, defying international sanctions.

**45. Ans.: (b)**

Explanation:

- Statement 1 is correct. Exception 2 to Section 375 of the IPC states that sexual intercourse by a man with his wife, if she is not under 18 years of age, is not considered rape, decriminalizing marital rape.
- Statement 2 is incorrect. The Protection of Women from Domestic Violence Act, 2005, provides civil remedies like protection orders and monetary compensation but does not offer criminal



provisions for prosecuting marital rape.

- Statement 3 is correct. In *Joseph Shine v. Union of India* (2018), the Supreme Court dismantled aspects of the doctrine of coverture, upholding that marriage does not diminish a woman's right to bodily autonomy.

**46. Ans.: (b)**

Explanation:

- Statement 1 is incorrect. While the CJI does have administrative authority, the appointment of ad hoc judges is not at the discretion of the CJI alone. It requires consultation and specific procedures outlined under Article 127 of the Constitution.
- Statement 2 is correct. The CJI plays a crucial role in the functioning of the Supreme Court, including the allocation of cases and the constitution of benches, which impacts the court's efficiency and the delivery of justice.
- Statement 3 is incorrect. There is no constitutional restriction on appointing a retired CJI to a government position, although such appointments are scrutinized for potential conflicts of interest.

**47. Ans.: (d)**

Explanation:

All of the above statements are correct.

- The Citizenship Act, 1955, enshrines the principle of single citizenship, meaning Indian citizens cannot hold dual nationality. This policy is intended to ensure allegiance to India.
- The Act allows citizenship to be acquired through birth, descent, registration, or naturalization. There is a provision for registration for those married to Indian citizens, provided they meet certain residency and legal requirements.

The Act does provide for the revocation of Indian citizenship if a person voluntarily acquires the citizenship of another country, maintaining the exclusivity of Indian nationality.

**48. Ans.: (a)**

Explanation:

Statement 2 is incorrect.

- The IndiaAI Innovation Centre is a key component of the mission, focusing on developing Large Multimodal Models (LMMs) and sector-specific AI models to address challenges in areas like healthcare, agriculture, and governance.
- The IndiaAI Datasets Platform provides access to high-quality non-personal datasets, not anonymized personal data. This platform is crucial for ensuring data privacy while enabling AI research and innovation.

The Safe & Trusted AI pillar emphasizes ethical AI practices, aiming to create indigenous tools and frameworks that ensure the responsible use of AI. This component addresses concerns related to data security, algorithmic bias, and transparency.

**49. Ans.: (a) 1 and 3 only**

Explanation:

Statement 2 is incorrect.

- Statement 1 is correct. The National Green Hydrogen Mission indeed aims to position India as a global hub for green hydrogen production, targeting at least 5 MMT per year by 2030.
- The SIGHT program incentivizes the domestic manufacturing of electrolyzers and promotes the use of green hydrogen in various sectors. It does not focus on importing technology.

Statement 3 is correct. The mission aims to avert almost 50 MMT of greenhouse gas emissions annually by 2030, contributing significantly to India's climate goals.

Q50. Answer: B

Explanation:

Statement 1 and 2 is correct

- The 30×30 target is an international goal to protect 30% of the world's oceans by 2030. Currently, only 2.8% of oceans are effectively protected, as most Marine Protected Areas (MPAs) lack enforcement.
- "Blue-washing" describes the phenomenon where countries declare MPAs but fail to implement management plans, rendering these protections ineffective. The term critiques symbolic conservation efforts.

Statement 3 is incorrect. The report highlights that Latin America and the Caribbean have significant gaps between declared MPAs and their actual management. They are not global leaders in MPA enforcement. So, option (b) would be correct answer here as question is asking incorrect statements.

**51. Ans.: (a)**

Explanation:

Only statement 1 and 2 is correct here.

- A declining young population leads to a higher dependency ratio, as there are fewer working-age people to support the aging population, increasing the burden on healthcare and social security systems.
- Slower population growth in Southern states could indeed result in reduced political representation in Parliament, as future delimitation may allocate more seats to populous Northern states.

Statement 3 is incorrect. Declining fertility rates have not resulted in a surplus of young workers. Instead, Southern states face a labour shortage and increasingly rely on internal migration from the North to balance their workforce.

**52. Ans.: (b)**

Explanation:

Statement 1 and 2 only is correct.

- The Moonlight programme involves launching a constellation of approximately five satellites to facilitate communication and navigation services for future lunar missions.
- The programme will begin initial services by 2028, with the full system expected to be operational by 2030, providing critical support for lunar exploration.
- The Moonlight programme focuses on the Moon's South Pole, an area of interest due to unique lighting conditions and the potential presence of water ice, rather than avoiding it. So, statement 3 is incorrect here.

**53. Ans.: (c)**

An intermediary, as defined by the IT Act, is an entity that facilitates the transmission, storage, or processing of information provided by third parties without exercising editorial control over that content. This distinguishes intermediaries from content creators or publishers, as intermediaries are not liable for third-party content if they comply with due diligence standards.

**54. Ans.: (d)**

Statement 1 is incorrect because Proba-3 focuses on the Sun's corona, not deep space exploration.

Statement 2 is incorrect because Proba-3 is a two-satellite mission designed to conduct precise solar observations, using formation flying to create a coronagraph effect.

Statement 3 is incorrect, as ISRO and the European Union have collaborated on previous Proba missions.

Statement 4 is incorrect because Proba-3 is scheduled to launch from Sriharikota, India, not a European spaceport.

**55. Ans.: (a)**

Kowsar was developed for Earth observation with a focus on environmental monitoring and agriculture, falling under civilian applications rather than military. It was launched from the Vostochny Cosmodrome on a Russian Soyuz rocket, contributing to Iran's peaceful space expansion initiatives.

**56. Ans.: (a)**

Only statement 3 is correct.

The Chambal and Banas rivers are two prominent rivers that flow through parts of the Ranthambore Tiger Reserve, supporting its biodiversity.

Statement 1 is incorrect as RTR is located at the meeting point of the Aravalli and Vindhya ranges, not the Western Ghats.

Statement 2 is incorrect because RTR has tropical dry deciduous and thorn forests, dominated by Dhok trees, not tropical moist evergreen forests.

Statement 4 is incorrect since RTR was a hunting ground for the rulers of Jaipur, not Udaipur.

**57. Ans.: (b)**

Statement 2 is correct. The Maha Kumbh Mela involves performing sacred rituals with the goal of attaining spiritual liberation.

Statement 1 is incorrect because the Maha Kumbh Mela is held every 12 years, not every 6 years.

Statement 3 is incorrect as the Maha Kumbh Mela rotates among four locations — Prayagraj, Haridwar, Ujjain, and Nashik.

Statement 4 is incorrect because the Maha Kumbh Mela is rooted in Hindu mythology with references dating back to the Maurya and Gupta periods, not specifically the Vedic period.

**58. Ans.: (d)**

About PM E-DRIVE Scheme:

- Launch date: October 1, 2024.
- Ministry: Ministry of Heavy Industries.
- Budget: Financial outlay of Rs. 10,900 crores.
- Duration: Active until March 31, 2026.
- Objective: Encourage EV adoption, reduce environmental impact from transport, and support domestic EV manufacturing.

Key components:

- Subsidies: Incentives for e-2Ws, e-3Ws, e-ambulances, e-trucks, and other EVs.
- Grants for Capital Assets: Fund e-buses, charging stations, and upgrade MHI testing facilities.
- Administration: Includes IEC activities and project management agency fees.

Eligibility criteria:

- Electric two-wheelers: Incentives are available for 24.79 lakh e-2Ws with advanced batteries, covering both private and commercial ownership.
- Electric three-wheelers: Around 3.2 lakh e-3Ws, including registered e-rickshaws and L5 vehicles, qualify if used commercially and equipped with advanced batteries.
- Electric ambulances: 500 crore supports e-ambulances, with standards set by the Ministry of Health and other stakeholders.
- Electric trucks: 500 crore is allocated for e-trucks, requiring a scrapping certificate from a MoRTH-approved center.
- Electric buses: 4,391 crore funds 14,028 e-buses for large cities, prioritizing STUs that retire older buses under MoRTH guidelines.

**59. Ans.: (b)**

Statement 2 is correct. Publishers exercise editorial control over the content on their platforms, deciding what content appears and making them directly responsible for any content violations.

Statement 1 is incorrect because publishers are liable for all content they produce or host, regardless of due diligence; due diligence does not shield them from liability as it does for intermediaries.

Statement 3 is also incorrect, as publishers are open to penalties for defamatory, inaccurate, or unlawful content due to their editorial authority.

**60. Ans.: (c)**

In its recent decision, the Supreme Court clarified that not all private properties fall under the classification of “material resources of the community” as per Article 39(b). This judgment restricts the scope of state control over privately owned assets, implying that only certain resources can be regarded as benefiting the common good.

**61. Ans.: (b)**

The Chola dynasty in South India, along with other dynasties, supported the Kumbh Mela, thereby contributing to its growth. British colonial records, such as those by James Prinsep, documented the socio-religious significance of the event in the 19th century.

Statement 1 is incorrect as the Kumbh Mela’s origins trace back further, though the Gupta period did elevate its prominence.

Statement 4 is incorrect because, rather than banning Hindu groups, Emperor Akbar allowed Hindu religious groups like the Naga Sadhus to lead the royal procession.

**62. Ans.: (a)**

Only Statement 3 is correct.

What are Dedicated Freight Corridors (DFCs)?

DFCs are specialized railway tracks designed solely for freight transport. These corridors, utilizing double-stack containers and heavy-haul trains, increase capacity and ensure faster freight transit.

Eastern dedicated freight corridor (EDFC):

- Route: Covers approximately 1,856 km from Ludhiana (Punjab) to Dankuni (West Bengal).
- Key sections: Kanpur-Mughalsarai and Khurja-Bhaupur.
- Operations: Fully commissioned, handling nearly 200 trains daily, primarily transporting coal, steel, and agricultural products.
- Impact: Relieves congestion on existing tracks, improves passenger train punctuality, and boosts regional economic activities.

**63. Ans.: (c)**

Python with PIM is effective in reducing data transfer bottlenecks, particularly in computational tasks, and offers energy savings in high-performance applications. Statement 1 is incorrect as it is not limited to graphical applications but can benefit various computational fields.

About Python Programming Language with Digital Processing-In-Memory (PIM) Technology:

What it is: Combines Python with processing-in-memory (PIM) technology, enabling computations to

take place directly in memory, bypassing the CPU.

Need: Tackles the “memory wall” problem, where data transfer rates fall behind advancements in processor speeds and memory capacity.

How it works:

- PyPIM platform introduces new instructions for in-memory operations.
- Allows developers to use Python to create software for PIM systems.
- Includes a simulation tool to estimate performance gains from in-memory processing.

Significance:

- Reduces data transfer bottlenecks.
- Accelerates processing for mathematical and algorithmic tasks.
- Saves energy, making it efficient for high-performance computing needs.

**64. Ans.: (d)**

Statement 1 is incorrect because personnel discharged voluntarily are not eligible for OROP benefits. Statements 2 and 3 are correct, as arrears are paid in installments, with family pensioners and Gallantry awardees receiving them in a single installment.

About One Rank One Pension (OROP) Scheme:

- Definition: OROP ensures that uniform pensions are paid to personnel retiring in the same rank with identical service lengths, regardless of when they retired.
- Implementation year: The government approved OROP in 2015, with benefits retroactively effective from July 1, 2014.
- Pension Re-fixation: Pensions are re-fixed based on the average of the minimum and maximum pensions of 2013 retirees of the same rank and service length.
- Arrears: Arrears are paid in four half-yearly instalments, except for family pensioners and Gallantry awardees, who receive it in one instalment.
- Future revisions: Pensions will be re-fixed every five years.
- Nodal agency: Department of Ex-Servicemen Welfare, Ministry of Defence.
- Payment: Integrated within the standard pension, not a separate component.
- Exclusions: Personnel discharged voluntarily under specific military rules post-OROP implementation are not eligible.

**65. Ans.: (b)**

Statement 1 is incorrect as Urad is grown in both Kharif and Rabi seasons in India. Statements 2 and 3 are correct because India imports Urad from countries like Brazil due to their complementary cropping seasons, and Urad cultivation has indeed expanded to tropical regions beyond South Asia.



About Urad:

- Scientific name: Vigna mungo, commonly known as black gram.
- Origins: Native to South Asia; widely cultivated and highly valued in India.
- Culinary use: Essential in Indian cuisine, often used as a dal and paired with rice or curry.
- Season: Grown in both Kharif and Rabi seasons in India.
  - Global cultivation: Also grown in tropical regions like the Caribbean, Fiji, Myanmar, and Africa, introduced by Indian immigrants.

**66. Ans.: (c)**

The CAQM was established to replace the EPCA in 2021, with an expanded mandate to coordinate air quality management in NCR and surrounding states.

About Commission for Air Quality Management:

- Origin: Established under the CAQM Act, 2021 for NCR and adjoining areas, replacing the Environment Pollution (Prevention and Control) Authority (EPCA).
- Aim: Coordinate and oversee efforts to improve air quality, prevent and control air pollution in Delhi-NCR and surrounding states (Punjab, Haryana, Rajasthan, Uttar Pradesh).
- Jurisdiction: Delhi-NCR, Punjab, Haryana, Rajasthan, and Uttar Pradesh.

Powers:

- Restrict activities impacting air quality.
- Conduct research on pollution.
- Issue binding directions to authorities and individuals.
- Enforce compliance and take preventive actions.

Composition:

- Chairperson: Secretary/Chief Secretary rank official.
- Five ex officio members from Delhi, Punjab, Haryana, Rajasthan, and UP.
- Three full-time technical members.
- Members from NGOs and technical bodies like CPCB, ISRO, and NITI Aayog.

**67. Ans.: (d)**

- The Gujarat government has introduced India's first 'Gujarat Semiconductor Policy 2022-2027'.
- In Dholera's emerging 'Semicon City,' Tata Electronics Private Limited (TEPL) and Taiwan's Powerchip Semiconductor Manufacturing Corporation (PSMC) are establishing India's first AI-enabled semiconductor fabrication facility with an investment exceeding Rs 91,000 crore.
  - Dholera, is being developed as India's first Greenfield Smart City.

**68. Ans.: (b)**

Statement 1 is incorrect because ISM was launched under the Ministry of Electronics and IT (MeitY), not the Ministry of Commerce. Statements 2 and 3 are

correct, as ISM includes support for fabs, incentives, and IP creation.

About India Semiconductor Mission (ISM):

- Launch: Initiated in 2021 under the Ministry of Electronics and IT (MeitY) with a budget of Rs. 76,000 crores.
- Objective: Develop a robust semiconductor and display manufacturing ecosystem in India.
- Financial support: Provides incentives for companies investing in semiconductor and display manufacturing, and design capabilities.
- Focus on IP and Technology Transfer: Encourages the creation of indigenous Intellectual Property (IP) and supports the Transfer of Technologies (ToT).
- Key schemes:
  - Semiconductor fabs: Scheme to establish semiconductor fabrication units in India.
  - Display fabs: Scheme to support display manufacturing facilities.
  - Compound semiconductors & ATMP: Scheme for setting up facilities for compound semiconductors, silicon photonics, and ATMP/OSAT units.
  - Design linked incentive (DLI): Incentives to boost the design ecosystem in semiconductors.

**69. Ans.: (a)**

Shanan was India's first 100 MW-capacity hydropower project. Statement 2 is incorrect because the project is built on the Uhl River, a tributary of the Beas, not directly on the Beas.

About Shanan Hydropower Project:

- Established: Commissioned in 1932, it is India's first megawatt-capacity hydroelectric project.
- Location: Joginder Nagar in Mandi district, Himachal Pradesh.
- River: Built on the Uhl River, a tributary of the Beas.
- Issue: Leased to Punjab for 99 years in 1925, the agreement ended in March 2024; Himachal Pradesh seeks ownership now, arguing that the land originally belonged to it.
- Present Status: Under Punjab's control, Himachal is seeking support from the Centre to secure the project's transfer.

**70. Ans.: (c)**

Statements 1 and 3 are correct. CAQM has the authority to issue binding directions and restrict harmful activities. Statement 2 is incorrect because CAQM's jurisdiction is limited to Delhi-NCR and adjoining states, not the entire country.

**71. Ans.: (b)**

Statements 1 and 3 are correct. The LRLACM has a range of 1,000 km and is equipped with precision strike capability. It can be launched from mobile articulated launchers on the ground as well as naval

platforms using universal vertical launch modules, giving it versatile operational capabilities.

Statement 2 is incorrect because while Bharat Dynamics Limited is a key production partner, the missile has been developed by the Aeronautical Development Establishment (ADE) under DRDO, with Bharat Electronics Limited also playing a significant role.

**72. Ans.: (d)**

The “State of the Global Climate Report” is an annual publication by the World Meteorological Organization (WMO) that provides updates on climate indicators, including temperature, greenhouse gases, sea level, and extreme weather events. It complements the IPCC’s more comprehensive but less frequent Assessment Reports.

WMO has published this report annually since 1993, not 2016; however, preliminary findings are presented to the COP each year since 2016. It provides updates relevant for the UN climate summits.

**73. Ans.: (c)**

CISF does not have a mandate for maritime security at offshore oil rigs, as this responsibility primarily falls under the Indian Navy and the Indian Coast Guard. CISF’s roles include fire protection services, airport and Delhi Metro security, VIP protection, and public interface roles. Additionally, an all-women battalion has been introduced for various specialized roles, including VIP security and interactions with the public.

**74. Ans.: (a)**

Statements 1 and 2 are correct. Before the 2019 amendment, companies could carry forward unspent CSR funds to the next fiscal, allowing flexibility in CSR spending. The amendment, however, introduced stricter rules, requiring unspent funds to be transferred to a Schedule VII fund by the fiscal year’s end and utilized within three years; otherwise, they must be deposited into a government-specified fund.

Statement 3 is incorrect as the amendment does not restrict CSR activities to specific sectors but instead encourages broader social, economic, and environmental contributions, as outlined in Schedule VII of the Companies Act.

**75. Ans.: (d)**

Statements 1 and 3 are correct. The World Intellectual Property Indicators (WIPI) report published by WIPO aims to track global trends in intellectual property filings and encourages countries to adopt IP standards that promote innovation and economic growth.

Statement 2 is incorrect as the report does not rank countries by innovation or competitiveness but rather focuses on IP filing trends and growth patterns across various sectors.

**76. Ans.: (c)**

Statements 1 and 3 are correct. The Morans are indigenous to Assam and Arunachal Pradesh and are part of the Tibeto-Burman Kachari family. They are currently demanding Scheduled Tribe (ST) status for better access to educational and employment opportunities.

Statement 2 is incorrect; while the Moran language is historically linked to the community, most members now predominantly speak Assamese due to cultural assimilation.

**77. Ans.: (b)**

The Nirbhay Cruise Missile is a sub-sonic long-range missile with capabilities for low-altitude flight and deep penetration to strike high-value targets. It is capable of carrying both conventional and nuclear warheads, making it versatile in combat scenarios. The other options misrepresent its range, origin, and capabilities, as it is an indigenous missile with a 1,000 km range developed by DRDO.

**78. Ans.: (a)**

Only statement 3 is correct.

CISF was initially established in 1969 as a paramilitary force under an Act of Parliament to provide security for critical infrastructure. It became an armed force of the Republic of India in 1983, expanding its responsibilities and role as part of the CAPFs.

CISF’s primary mandate extends beyond nuclear and airport facilities to include security for seaports, heritage sites, and other establishments.

CISF functions as one of the CAPFs under the Ministry of Home Affairs and coordinates with other forces for national security.

It is led by a Director-General, who is typically an officer from the Indian Police Service (IPS).

CISF is headquartered in New Delhi, not Mumbai.

**79. Ans.: (a)**

Statements 1 and 2 are correct. The World Intellectual Property Organization (WIPO) is indeed a specialized UN agency headquartered in Geneva, and it has a near-universal membership of 193 countries.

However, statement 3 is incorrect; WIPO’s primary role is to foster international cooperation on intellectual property, not to resolve disputes, although it does provide a platform for policy development and discussions on IP issues.

**80. Ans.: (b)**

The WMO is a specialized agency of the United Nations focused on meteorology, climate,

operational hydrology, and related geophysical sciences. It evolved from the International Meteorological Organization, established in 1873, and became a specialized UN agency in 1950.

Options (a) and (d) are incorrect as WMO's scope extends beyond greenhouse gases and weather data, encompassing international cooperation in meteorology and climate science, and serving all member states. Option (c) is incorrect as the WMO is affiliated with the UN.

**81. Ans.: (d)**

The Sanjay Kumar Committee was tasked with reviewing state objections to the Ecologically Sensitive Area (ESA) demarcations. Its mandate included conducting field visits to assess whether the demands for exclusion of specific villages from ESA listings were valid, aiming to finalize the ESA status in a way that balances conservation and local concerns.

Unlike the Gadgil Committee, which proposed the entire Western Ghats as ESA, and the Kasturirangan Committee, which focused on 37% of the Ghats, the Sanjay Kumar Committee had a narrower, validation-focused mandate.

**82. Ans.: (a)**

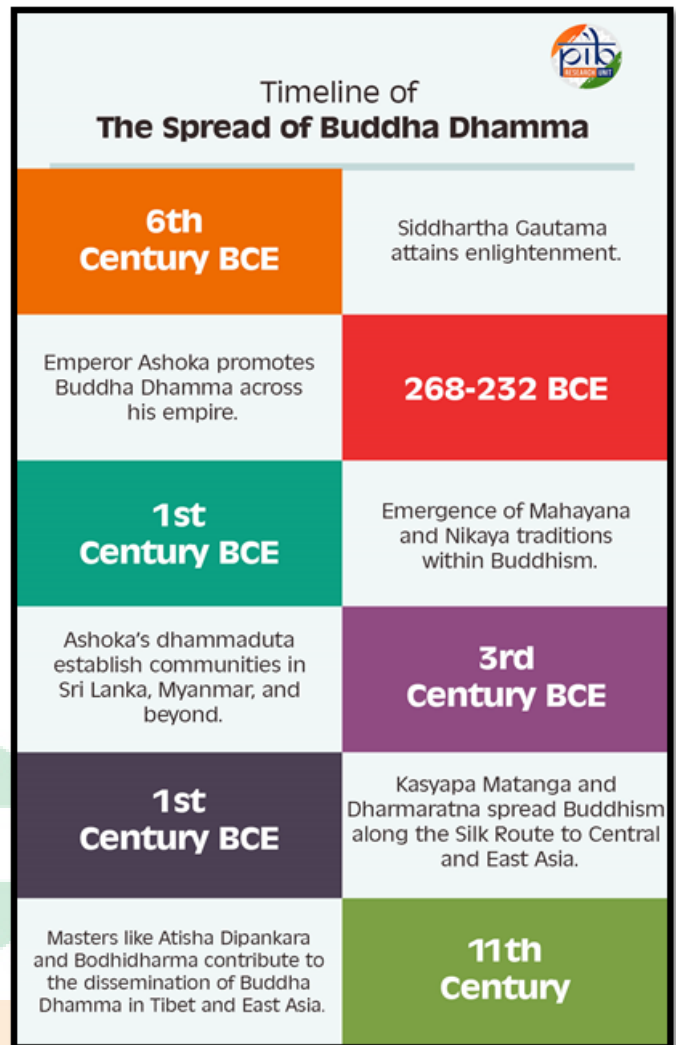
Statement 1 is incorrect, as winter actually reduces oxygenation in the river, which exacerbates foam formation.

Statement 2 is correct. Surfactants, primarily phosphates from detergents, contribute to foam formation in the Yamuna River, especially during the winter when the lean river flow reduces the natural dilution capacity.

Statement 3 is incorrect because industrial effluents add more pollutants and chemicals, aggravating the problem rather than diluting it. Thus, the primary causes of foaming are surfactants, reduced dilution capacity, and pollutant buildup.

**83. Ans.: (b)**

Emperor Ashoka's reign, marked by his dedication to spreading Buddha Dhamma, occurred between 268-232 BCE, placing it in the 3rd century BCE. After converting to Buddhism, Ashoka sent emissaries (dhamma-dutas) to promote Buddhist teachings within his empire and beyond, including to Sri Lanka, Myanmar, and other regions. This period was significant for the expansion of Buddhism, establishing it as a major religious and philosophical tradition in Asia.



**84. Ans.: (d)**

Statement 1 is incorrect because ISA is headquartered in India, making it the first intergovernmental organization headquartered in the country, not Geneva.

Statement 2 is incorrect because ISA's mission is inclusive, aiming to promote solar energy in both developed and developing nations, with special emphasis on Least Developed Countries (LDCs) and Small Island Developing States (SIDS).

Statement 3 is incorrect because ISA partners with both public and private sectors, along with development banks and civil society, to effectively mobilize resources for global solar initiatives.

**85. Ans.: (c)**

The Kalka-Shimla Narrow-Gauge Railway is known for its remarkable engineering feats, including the world's highest multi-arc gallery bridge. This heritage railway route is famous for its scenic beauty and complex engineering, featuring numerous tunnels, bridges, and curves that allow it to navigate the rugged terrain between Kalka and Shimla. This unique bridge construction makes it an engineering marvel among mountain railways.





### 86. Ans.: (a)

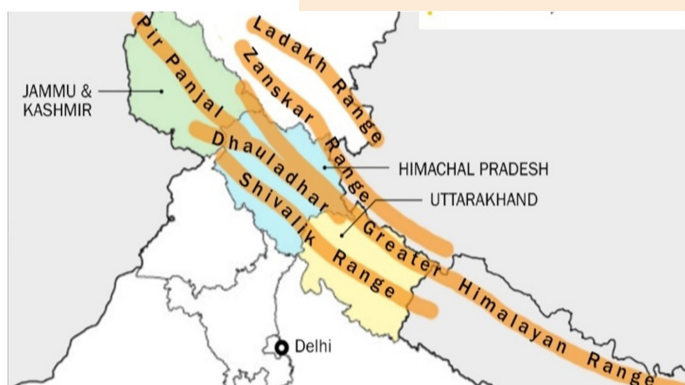
The Visible Emission Line Coronagraph (VELC) on ADITYA-L1 is specifically designed to observe the solar corona and study Coronal Mass Ejections (CMEs) and the solar wind. The VELC's advanced instrumentation, including a coronagraph, spectrograph, and polarimetry module, allows for detailed imaging and analysis of the solar corona. This data is critical for understanding the dynamics of CMEs, which can have significant effects on space weather and can impact satellite and communication systems on Earth. The VELC's capabilities are particularly important for continuous monitoring during the peak of Solar Cycle 25, aiding in predictive modeling of solar activities.

### 87. Ans.: (a)

Statement 1 is correct; Lam Dal Lake, a notable glacial lake, is located within the Dhauladhar range.

Statement 2 is incorrect because the highest peak in the Dhauladhar range is Hanuman Tibba, not Indrhar Pass.

Statement 3 is also incorrect as the Dhauladhar range is primarily composed of granite, with only some deposits of limestone and sandstone.



### 88. Ans.: (d)

Statement 1 is incorrect because the summit is organized by the Ministry of Culture, not the Ministry of Tourism.

Statement 2 is incorrect as the theme of the 2024 summit is "Role of Buddha Dhamma in Strengthening Asia," not "Buddhism for Global Peace."

Statement 3 is incorrect because the summit was initiated by the Government of India and the International Buddhist Confederation (IBC), not the United Nations.

### 89. Ans.: (d)

While NMNF focuses on natural farming and includes real-time geo-tagged monitoring via an online portal, it aims to establish 10,000 Bio-input Resource Centres (BRCs). This distinction highlights the program's emphasis on facilitating inputs for natural farming but within a realistic framework of implementation.

About National Mission on Natural Farming (NMNF):  
Ministry: Ministry of Agriculture & Farmers' Welfare.

Central Sponsored Scheme.

Aim: To promote natural, chemical-free farming practices for sustainability, climate resilience, soil health rejuvenation, and nutritious food production.

Key Features:

- Implementation in 15,000 clusters across Gram Panchayats, covering 5 lakh Ha and reaching 1 crore farmers.
- Establishment of 10,000 Bio-input Resource Centres (BRCs) and 2000 NF Model Demonstration Farms at KVKs, Agricultural Universities, and farmers' fields.
- Training of 75 lakh farmers and deployment of 30,000 Krishi Sakhis/CRPs for mobilisation and handholding support.
- Certification system and common branding for marketing NF produce.
- Real-time geo-tagged monitoring via an online portal.

### 90. Ans.: (a)

Statement 1 is incorrect because while GMP was conceptualized at COP28, it was officially launched at COP29, and its focus is on developing and emerging economies, not developed ones.

Statement 2 is correct as international financial institutions like the World Bank and Climate Investment Funds are delivery partners of GMP.

Statement 3 is correct as GMP focuses on decarbonizing high-emission industrial sectors like steel and cement.

At COP29, the Global Matchmaking Platform for Industrial Decarbonization (GMP) was launched by UNIDO and the Climate Club.

It is a pioneering initiative to decarbonize heavy-emitting industries in developing and emerging economies by connecting countries with global technical and financial resources.

### 91. Ans.: (d)

Statement 1 is incorrect because gamma rays are blocked by Earth's atmosphere; they can only be detected indirectly using instruments like Imaging Atmospheric Cherenkov Telescopes (IACTs).

Statement 2 is incorrect because gamma rays themselves are not visible; Cherenkov radiation, caused by gamma rays interacting with atmospheric

molecules, produces faint blue light, but gamma rays themselves remain invisible.

Statement 3 is incorrect because gamma rays are produced by various phenomena, including pulsars, black holes, and gamma-ray bursts, not just during nuclear reactions within stars.

**92. Ans.: (b)**

About One Nation One Subscription (ONOS):

Ministry: Department of Higher Education, Ministry of Education.

Central Sector Scheme: ₹6,000 crore allocated for 2025–2027.

Aim: To provide access to top-quality international research journals to government higher education institutions (HEIs) and central government R&D institutions.

Key Features:

Coverage of 30 major international publishers and nearly 13,000 e-journals.

Access for 6,300 government HEIs and R&D institutions benefiting 8 crore students, faculty, and researchers.

Entirely digital process coordinated by INFLIBNET under UGC.

Promotes interdisciplinary and core research, especially in tier-2 and tier-3 cities.

Aligned with NEP 2020 and supported by Anusandhan National Research Foundation (ANRF).

**93. Ans.: (b)**

Statement 1 is incorrect because the Act maintains the status quo as of August 15, 1947, not January 26, 1950.

Statement 2 is correct as Section 3 prohibits conversion of religious sites to other denominations.

Statement 3 is correct because the Ayodhya dispute was specifically excluded since it was sub-judice.

About Places of Worship Act, 1991:

Objective: Prohibits the conversion of a place of worship and ensures its religious character as on August 15, 1947.

Key Provisions:

Section 3: Bars conversion of a place of worship, either wholly or partly, to a different denomination or segment.

Maintains the religious status quo of all places of worship as of Independence Day, 1947.

Prohibits legal suits or claims to alter the status of any place of worship.

Exemptions:

Ayodhya dispute: Excluded as the case was sub-judice

at the time.

Ancient monuments: Covered under the Ancient Monuments and Archaeological Sites and Remains Act, 1958.

Disputes resolved by mutual consent or settled before the law's enforcement.

Significance: Aims to maintain communal harmony by preventing religious conflicts over historical claims.

**94. Ans.: (a)**

Only Statement 1 is correct.

About the MACE project:

Location: Hanle, Ladakh, at an altitude of ~4,300 m, making it the highest imaging Cherenkov telescope in the world.

Development: Indigenously built by Bhabha Atomic Research Centre (BARC) with support from ECIL and other Indian partners.

Objective: To study high-energy gamma rays and contribute to the understanding of the universe's most energetic phenomena, such as supernovae, black holes, and gamma-ray bursts.

Technology: Uses Cherenkov imaging technology to detect cosmic rays and observe high-energy astrophysical events.

Significance: Enhances India's cosmic-ray research capabilities and strengthens its position in multi-messenger astronomy on a global scale.

**95. Ans.: (c)**

The RESOURCESAT Series, with sensors like LISS-3, LISS-4, and AWiFS, detects fires with different spatial resolutions. INSAT-3DR also tracks fires but has a coarser resolution, reducing its accuracy. CARTOSAT and Megha-Tropiques are not designed for fire detection.

**96. Ans.: (c)**

The State Innovation Mission (SIM) under AIM 2.0 aims to strengthen state-level innovation ecosystems in alignment with NITI Aayog's State Support Mission. However, bilateral and multilateral collaborations fall under AIM's international collaboration initiatives, not SIM.

About Atal Innovation Mission 2.0:

Ministry/ Department: NITI

Budget: ₹2,750 crore till March 2028.

Aim: To strengthen India's innovation and entrepreneurship ecosystem by improving input, throughput, and output quality in innovation.

Key Features:

Language Inclusive Program of Innovation (LIPI): Establish 30 Vernacular Innovation Centers in 22 scheduled languages.

Frontier Program: Develop customized innovation templates for J&K, Ladakh, NE states, and aspirational districts with 2,500 new ATLs.

Human Capital Development Program: Train 5,500 professionals to build and sustain innovation ecosystems.

Deeptech Reactor: Pilot research sandboxes for deep tech startups requiring long-term investment.

State Innovation Mission (SIM): Strengthen innovation ecosystems in states/UTs, integrated with NITI Aayog's State Support Mission.

International Innovation Collaborations: Host Global Tinkering Olympiad, engage in 10 bilateral/multilateral collaborations, support WIPO for the Global South, and anchor Startup20 Engagement Group.

Industrial Accelerator Program: Create 10 PPP-mode accelerators for scaling startups in critical sectors.

Atal Sectoral Innovation Launchpads (ASIL): Build 10 sector-specific platforms for startup integration and procurement across key ministries.

**97. Ans.: (a)**

The Gelephu Mindfulness City embodies Bhutan's philosophy of Gross National Happiness, prioritizing sustainability, well-being, and harmony. It integrates eco-friendly development, renewable energy, and modern urban planning with Bhutanese cultural values, making it a model for global sustainable living.

**98. Ans.: (b)**

Statement 1 is incorrect: Space junk primarily consists of man-made objects like defunct satellites and rocket parts, not natural materials.

Statement 2 is correct: Space debris releases pollutants like aluminum, nitrogen oxides, and black carbon.

Statement 3 is correct: Soot particles absorb solar energy, warming the atmosphere and disrupting climate patterns.

Statement 4 is correct: Pollutants like copper promote cloud formation and alter atmospheric chemistry.

**99. Ans.: (a)**

Statement 1 is correct: ISKCON was founded in 1966 in New York City by C. Bhaktivedanta Swami Prabhupada.

Statement 2 is incorrect: ISKCON follows Gaudiya Vaishnavism, not Advaita Vedanta.

Statement 3 is correct: ISKCON is actively involved in social initiatives like free food distribution, education, eco-villages, and healthcare.

About ISKCON:

- Full form: International Society for Krishna Consciousness.
- Founder: Bhaktivedanta Swami Prabhupada.

- Founded In: New York City, USA.
- Year:
- Aim: To promote Krishna Consciousness and devotional service to Krishna as the Supreme Godhead.

Features:

- Largest branch of Gaudiya Vaishnavism, rooted in 16th-century India.
- Emphasizes chanting the Hare Krishna Mahamantra.
- Engages in public bhakti practices like Sankirtan, yoga seminars, and festivals.
- Runs social initiatives, including free food distribution, schools, eco-villages, and hospitals.

**100. Ans.: (b)**

Statement 1 is incorrect: The campaign focuses on high-burden states like West Bengal, Bihar, and Rajasthan, where child marriage rates are highest.

Statement 2 is incorrect: The goal is to reduce child marriage rates to below 5% by 2029, not 2025.

Statement 3 is correct: The Child Marriage Free Bharat Portal allows public reporting and monitoring, aiding in tracking progress.

About Bal Vivah Mukta Bharat Campaign:

- Objective: To eliminate child marriage through collective efforts and focus on high-burden states and districts.
- Target States: West Bengal, Bihar, Jharkhand, Rajasthan, Tripura, Assam, and Andhra Pradesh, along with nearly 300 high-burden districts.
- Child Marriage Free Bharat Portal: A platform to raise awareness, report cases, and monitor progress with real-time tracking by Child Marriage Prohibition Officers (CMPOs).
- Monitoring Mechanism: Central nodal officers and state-level CMPOs will ensure accountability and support for affected individuals.
- Goal: Reduce child marriage rates to below 5% by 2029; rates have already dropped from 47.4% (2006) to 23.3% (2019-21).
- Awareness Drive: Public access to information and complaint registration via the portal.





