#RiseWithRICE

RICE IAS

Weekly EXPECTED CURRENT AFFAIRS

for

IAS EXAMINATION





From

16th Nov to 21st Nov 2026

INDEX

1. POLITY & GOVERNANCE ____ **1**

1.1. Swachh Survekshan Awards 2025–26 ____ 1

2. INTERNATIONAL RELATIONS ____ **3**

2.1. International Conference of Asian Political Parties (ICAPP) ____ 3

2.2. INS Sahyadri Participates in Bilateral Maritime Exercise JAIMEX 2026 ____ 4

3. ECONOMY ____ **6**

3.1. Reshaping India's Rice Economy for Sustainable Growth ____ 6

3.2. Credit Guarantee Fund for Micro Units (CGFMU) ____ 7

3.3. India's Push for Domestic Tungsten Development ____ 9

4. ENVIRONMENT & GEOGRAPHY ____ **11**

4.1. Assam Bans Drones at Amur Falcon Roosting Sites ____ 11

4.2. The Earthshot Prize 2026 ____ 13

5. SCIENCE & TECHNOLOGY ____ **15**

5.1. IN-SPACe Selects Three Firms for 3D Reconstruction of Indian Cities ____ 15

5.2. AI-Based Blood Test Uses DNA Changes to Detect Multiple Types of Cancer ____ 16

5.3. Selection and Training of Astronauts for Spaceflight ____ 19

5.4. ISRO Conducts Ground Static Test of PSLV Third Stage ____ 20

5.5. Matsya-6000: Advancing India's Deep-Ocean Capabilities ____ 22

5.6. India's Push for Advanced Chemistry Cell Manufacturing ____ 24

6. HISTORY & CULTURE ____ **26**

6.1. Kartar Singh Sarabha ____ 26

7. MISCELLANEOUS ____ **28**

7.1. Kochon Prize 2026 ____ 28

7.2. M. John Harrison Wins Booker Prize 2026 ____ 29

7.3. NCB-Led Drive Targets Illegal Cannabis and Opium Cultivation ____ 31

***

POLITY & GOVERNANCE

1.1. SWACHH SURVEKSHAN AWARDS 2025–26

Context



- President of India recently conferred the **Swachh Survekshan 2025-26 awards**, where Navi Mumbai was officially adjudged India's cleanest city, notably ending Indore's historic eight-year winning streak at the top.

About Swachh Survekshan

- **Nature:** An annual nationwide cleanliness assessment of cities and Urban Local Bodies (ULBs).
- **Nodal Ministry**: Ministry of Housing and Urban Affairs (MoHUA).
- **Implementing Department**: Department of Urban Development (DoUD), MoHUA.
- **Objective:** To assess urban sanitation and cleanliness, promote healthy competition among cities and encourage citizen participation.
- **Launch:** 2016, with 73 cities in its first edition.

Key Highlights of Swachh Survekshan 2025–26

- **Coverage:** Expanded to 4,751 cities.
- **Citizen Participation**: Around 2.70 crore citizens provided feedback.
- **Assessment:** ULBs were evaluated across 43 indicators covering 10 critical domains.
- **Assessment Mechanism**: Over 3,000 trained assessors conducted on-ground evaluations using GPS-enabled monitoring and a digital verification framework.
- **Improvement**: Over 350 ULBs improved their rankings by more than 500 positions, while 1,700+ smaller cities improved their rankings over 2024–25.

Major Award Categories

The awards covered the following categories:

1. Swachh Shehar Jodi (SSJ).
2. Clean Cities of Super Swachh League.
3. Swachh Shehar across five population categories.
4. Swachh River Front Town.
5. Swachh Coastal Town.
6. Clean Himalayan City.
7. State First Swachh City.

Winners of 2025-26

Category	Top Performers
Swachh Shehar Jodi	Ahmedabad–Sanand

Super Swachh League	Navi Mumbai, Surat, Vijayawada
Million Plus Population	Visakhapatnam, Jabalpur, Lucknow
Clean Himalayan Cities	Rudrapur, Jammu, Shopian
Swachh River Front Towns	Rewa, Bilaspur, Varanasi
Swachh Coastal Towns	Puri, Alappuzha, Ratnagiri

Q. Consider the following statements regarding the Swachh Survekshan Awards 2025-26:

1. Indore retained its title as the cleanest city in India for the ninth consecutive year.
2. The Swachh Survekshan is the flagship cleanliness assessment conducted under the Swachh Bharat Mission-Urban.
3. Puri was ranked as the top city in the newly emphasized Swachh Coastal Town category.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation:

- **Statement 1 is incorrect:** Navi Mumbai was adjudged the cleanest city in India in the 2025-26 edition, ending Indore's eight-year streak at the top.
- **Statement 2 is correct:** The survey is the flagship urban cleanliness assessment carried out by the Union Housing and Urban Affairs Ministry under the Swachh Bharat Mission-Urban (SBM-U).
- **Statement 3 is correct:** Puri in Odisha secured the first rank in the Swachh Coastal Town category, followed by Alappuzha and Ratnagiri.

***

Scan to know more about our courses...

IAS 2-Year GS PCM | **IAS 10-Month GS PCM** | **Degree + IAS** | **Prelims Test Series**

2.1. INTERNATIONAL CONFERENCE OF ASIAN POLITICAL PARTIES (ICAPP)



Context

- Recently, the 13th General Assembly of the International Conference of Asian Political Parties (ICAPP) adopted the Seoul Declaration in Seoul, South Korea, expressing concern over unilateral actions and reaffirming state sovereignty and territorial integrity.

About ICAPP

- **Established:** It was launched in Manila, Philippines in September 2000.
- **Nature**: A regional forum bringing together political parties across Asia, irrespective of their political ideologies.
- **Objective:** To promote mutual understanding, cooperation and dialogue among Asian political parties.
- **Headquarters/Secretariat:** Seoul, South Korea.
- **General Assembly**: ICAPP's principal deliberative forum, held biennially on a rotational basis among member countries, unless otherwise decided by the Standing Committee.
- **Membership:** Membership is open to political parties in Asian countries that have democratically elected members in their respective national parliaments and the country concerned must be a Member State of the United Nations.

ICAPP and India

- India participates in ICAPP through its political parties.
- Indian political representatives have participated in the organisation's deliberations and activities.

Key Highlights of the Seoul Declaration

- **State Sovereignty:** Reaffirmed the principles of sovereignty and territorial integrity of all states.
- **Non-Interference**: Emphasised non-interference in the internal affairs of states.
- **Peaceful Settlement**: Called for peaceful resolution of international disputes.
- **UN Charter**: Stressed strict adherence to the principles of the UN Charter.
- **Multilateral Cooperation**: Expressed concern over unilateral actions, geopolitical rivalry and weakening international cooperation.
- **International Legal Order**: Warned that the threat or use of force and selective observance of international obligations could undermine confidence in the international legal system.

Significance of ICAPP

- Provides a platform for dialogue between governing and opposition political parties across Asia.
- Encourages political parties to influence their respective governments towards peaceful conflict resolution.

- Promotes regional peace, stability, reconciliation and international cooperation.

Q. Consider the following statements regarding the International Conference of Asian Political Parties (ICAPP):

1. The General Assembly is the principal deliberative forum of ICAPP.
2. The General Assembly is held annually at a permanent venue designated by the Standing Committee.

Which of the statements given above is/are correct?

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

Answer: (a)

Explanation:

Statement 1 is Correct: The General Assembly is the principal deliberative forum of ICAPP.

Statement 2 is Incorrect: It is held once every two years on a rotational basis among member countries, unless otherwise decided by the Standing Committee.

2.2. INS SAHYADRI PARTICIPATES IN BILATERAL MARITIME EXERCISE JAIMEX 2026

Context



Indian Naval Ship (INS) Sahyadri participated in the bilateral maritime exercise JAIMEX 2026 with the Japan Maritime Self-Defense Force (JMSDF) on November 13 and 14, 2026, operating alongside JMSDF ship JS Ise south of Honshu, Japan, to strengthen operational cooperation and interoperability.

About Exercise JAIMEX

- **What it is:** A bilateral naval exercise conducted between the Indian Navy and the Japan Maritime Self-Defense Force (JMSDF).
- **Participating Units:** INS Sahyadri from India and the helicopter destroyer JS Ise from Japan.
- **Key Activities:** Coordinated maritime engagements including tactical manoeuvres, communication drills, and cross-deck helicopter landings.
- **Objective:** To strengthen operational coordination, enhance interoperability, exchange professional experiences, and reinforce mutual trust between the two navies.
- **Strategic Significance:** Reaffirms the shared commitment of India and Japan to maintaining peace, security, and a rules-based maritime order in the Indo-Pacific region.
- **Other India–Japan Exercises:** Exercise Dharma Guardian (Army), Exercise Veer Guardian (Air Force), and Exercise Malabar (Multilateral Naval Exercise involving India, Japan, the USA, and Australia).

About INS Sahyadri

- **Classification:** INS Sahyadri (F49) is an indigenously built multi-role guided-missile stealth frigate of the Indian Navy.
- **Project & Builder:** It is the third and final ship of the Shivalik-class stealth frigates, constructed by Mazagon Dock Shipbuilders Limited (MDL) in Mumbai under Project 17.
- **Sister Ships:** The other two ships built under Project 17—India's first indigenously designed stealth frigates—are INS S hivalik (F47) and INS Satpura (F48).
- **Commissioning & Fleet:** Commissioned into the Indian Navy on July 21, 2012, it operates under the Eastern Fleet based in Visakhapatnam.

Key Features of INS Sahyadri

- **Dimensions & Displacement:** Measures 468 feet in length and 55 feet in breadth, with a displacement capacity of 6,800 tons.
- **Propulsion:** Powered by two gas turbine engines enabling speeds exceeding 30 knots (over 55 km/h), alongside two diesel engines for normal cruising speeds.
- **Weapon Systems:** Equipped with BrahMos anti-ship cruise missiles, Barak-1 surface-to-air missiles, Shtil-1 3S90M missiles, anti-submarine rocket launchers, and torpedoes.
- **Aviation & Sensors:** Features advanced sensors and electronic warfare suites to neutralise air, surface, and subsurface threats, and can embark two helicopters (a mix of HAL Dhruv, Sea King, or Kamov).

Q. With respect to INS Sahyadri and Exercise JAIMEX, consider the following statements:

1. Exercise JAIMEX is a multilateral naval exercise conducted annually by the Quad member nations in the Indo-Pacific region.
2. INS Sahyadri is an indigenously built Shivalik-class guided-missile stealth frigate constructed under Project 17.

Which of the statements given above is/are correct?

(a) I only (b) II only

(c) Both I and II (d) Neither I nor II

Correct Answer: (b) II only

Explanation:

- **Statement 1 is incorrect:** Exercise JAIMEX (Japan–India Maritime Exercise) is a bilateral naval exercise conducted exclusively between the Indian Navy and the Japan Maritime Self-Defense Force (JMSDF), whereas Exercise Malabar is the multilateral naval exercise involving the Quad nations (India, Japan, the USA, and Australia).
- **Statement 2 is correct:** INS Sahyadri (F49) is the third and final ship of the indigenously designed and built Shivalik-class multi-role guided-missile stealth frigates, constructed by Mazagon Dock Limited in Mumbai under Project 17.

***

ECONOMY

3.1. RESHAPING INDIA'S RICE ECONOMY FOR SUSTAINABLE GROWTH



Context

- India, the world's largest rice exporter since 2012, faces sustainability challenges due to groundwater depletion, water-intensive cultivation and greenhouse gas emissions.

About India's Rice Economy

- **Production:** India produced an estimated 154.02 million tonnes of rice in 2025–26.
- **Major Producing States:** Uttar Pradesh, Telangana, West Bengal, Punjab, Chhattisgarh, Odisha, Madhya Pradesh, Bihar, Andhra Pradesh and Tamil Nadu.
- **Global Position:** India is the world's largest rice exporter, accounting for around 30–35% of global rice exports.
- **Export Growth:** Rice exports increased from 17.73 million tonnes in 2020–21 to 21.57 million tonnes in 2025–26.

Composition of Rice Exports

- India's rice export basket consists of two major categories:
  - **Basmati Rice:** Premium-quality rice with higher export value per tonne.
  - **Non-Basmati Rice:** Accounts for a larger share of export volume.

Environmental Concerns

- **Virtual Water Trade:** Refers to the water embedded in the production of exported goods.
- **Groundwater Depletion:** Water-intensive rice cultivation increases pressure on groundwater resources, particularly in Punjab, Haryana and western Uttar Pradesh.
- **Greenhouse Gas Emissions:** Flooded rice fields generate methane, while excessive nitrogen-based fertiliser use contributes to other emissions.

Sustainable Rice Cultivation Practices

- **Alternate Wetting and Drying (AWD):** An irrigation technique that alternates between flooding and drying rice fields to improve water-use efficiency.
- **Direct-Seeded Rice (DSR):** Rice seeds are directly sown in the field instead of transplanting seedlings.
- **Integrated Nutrient Management:** Combines organic and inorganic nutrient sources to improve nutrient-use efficiency and reduce environmental impacts.

Q. Consider the following statements regarding Alternate Wetting and Drying (AWD) and Direct-Seeded Rice (DSR):

1. AWD involves periodically draining rice fields and allowing them to dry before re-irrigation.

2. DSR involves sowing rice seeds directly in the field instead of transplanting seedlings from a nursery.
3. Both practices can contribute to reducing water consumption and greenhouse gas emissions in rice cultivation.
4. DSR necessarily requires continuous flooding of fields during the initial stages of crop growth.

Which of the statements given above are correct?

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

Answer: (b) 1, 2 and 3 only

Explanation:

- **Statement 1 is Correct:** AWD involves alternating between flooded and non-flooded conditions by allowing fields to dry periodically before irrigation.
- **Statement 2 is Correct:** DSR involves directly sowing rice seeds in the field, eliminating the conventional nursery-based transplanting process.
- **Statement 3 is Correct:** Both practices can improve water-use efficiency and potentially reduce greenhouse gas emissions.
- **Statement 4 is Incorrect:** DSR does not require continuous flooding during initial crop growth; it generally involves direct sowing under aerobic or suitable moist soil conditions.

3.2. CREDIT GUARANTEE FUND FOR MICRO UNITS (CGFMU)

Context



- Recently, the Union Cabinet has approved the continuation of the Credit Guarantee Fund for Micro Units (CGFMU) for an additional five years up to March 2031.

About Credit Guarantee Fund for Micro Units (CGFMU)

- **Nature:** A Trust Fund established by the Government of India and managed by the National Credit Guarantee Trustee Company Limited (NCGTC).
- **Objective:** To provide credit guarantee against defaults on eligible micro-loans extended by banks, NBFCs, MFIs and other financial intermediaries.
- **Purpose:** To encourage institutional credit to micro and small enterprises (MSEs), particularly without collateral and third-party guarantees.
- **Target Beneficiaries**: New and existing micro-units and enterprises, including eligible Joint Liability Groups (JLGs) and Self-Help Groups (SHGs).
- **Administering Body:** It operates through the National Credit Guarantee Trustee Company Limited (NCGTC), which is a wholly-owned company of the Government of India under the **Ministry of Finance.**

- **Implementing Framework**: Supports collateral-free lending under the Pradhan Mantri MUDRA Yojana (PMMY).

Salient Features of the Scheme

- **Eligible Credit Facilities**:
  - Pradhan Mantri Mudra Yojana (PMMY) loans up to ₹20 lakh to eligible micro-enterprises.
  - Pradhan Mantri Jan Dhan Yojana (PMJDY) overdrafts up to ₹10,000.
  - SHG loans with a portfolio size of ₹10–20 lakh.
- **Guarantee Coverage**: Linked to the disbursement amount for working capital limits and the outstanding amount for term loans, reflecting the actual risk exposure of lending institutions.
- **Guarantee Fee:**
  - PMMY: Reduced from 1% to 0.75% per annum.
  - SHGs: Unchanged at 0.25% for the first year and 0.50% in subsequent years.
- **Duration:** Applicable to PMMY loans extended during the XVI Finance Commission cycle (FY 2026–27 to FY 2030–31).

Eligible and Ineligible Agricultural Activities

- **Eligible:** Allied agricultural activities such as pisciculture, beekeeping, poultry, livestock, dairy, fishery, food processing and agribusiness services.
- **Not Eligible:** Purely agricultural activities, crop loans and land improvement activities such as canals, irrigation and wells.

Implementation and Institutional Mechanism

- **Eligible Lending Institutions**: Banks, Micro Finance Institutions (MFIs), Non-Banking Financial Companies (NBFCs) and other financial intermediaries approved by the Fund.
- **Registration:** Eligible lending institutions register with NCGTC by submitting an undertaking and board resolution.
- **Digital Platform**: Guarantee applications, renewals, claims and settlements are processed through SURGE, NCGTC's B2B online portal.

Impact and Significance

- Collateral-free loans under PMMY have fostered a new generation of entrepreneurs by expanding access to formal institutional credit.
- The extension of CGFMU is expected to facilitate loans worth ₹12.6 lakh crore over the next five years.
- The scheme will promote entrepreneurship by enabling aspiring business owners to establish and expand their enterprises.

Q. With respect to the Credit Guarantee Fund for Micro Units (CGFMU) and the PM Mudra Yojana, consider the following statements:

I. The CGFMU was established primarily to provide credit guarantee coverage to large-scale corporate infrastructure projects.

II. The credit guarantee coverage to lending institutions under CGFMU is provided through the National Credit Guarantee Trustee Company Limited (NCGTC).
III. The Union Cabinet has approved the continuation of the CGFMU scheme up to March 2031 to further facilitate collateral-free loans.

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

Answer: B

Explanation:

Statement I is incorrect: The CGFMU was explicitly launched in 2016 to provide credit guarantee coverage for micro units and grassroots entrepreneurs, not large-scale corporate infrastructure.

Statement II is correct: The guarantee coverage against default risk is managed and provided to lending institutions through the National Credit Guarantee Trustee Company Limited (NCGTC).

Statement III is correct: The Union Cabinet recently approved the continuation of the CGFMU for five years, extending its operational mandate to March 2031.

3.3. INDIA'S PUSH FOR DOMESTIC TUNGSTEN DEVELOPMENT

Context



- Recently, Hindustan Zinc Ltd (HZL) acquired the official license to explore and mine a tungsten block in Andhra Pradesh.

About Tungsten

- **Basic Profile:** Tungsten is a naturally occurring transition metal identified by the chemical symbol **W** and atomic number 74.
- **Nature:** A hard, dense metal with the highest melting point (3,422°C) among all metals.
- **Occurrence:** Primarily found in minerals such as wolframite and scheelite.
- **Global Producers:** China is the leading global producer, followed by Vietnam, Russia, and North Korea.
- **Strategic Status:** The Government of India has officially classified it as a **Critical Mineral** due to its significant economic and industrial importance.

Key Physical Properties

- **Melting Point:** It possesses the highest melting point of all known metals (3410 °C).
- **Vapor Pressure:** It exhibits the lowest vapor pressure of all metals (4.27 Pa at 3410 °C).
- **Tensile Strength:** It retains the highest tensile strength among metals at extreme temperatures (exceeding 1650 °C).
- **Physical State:** It remains solid at room temperature.

- **Alloy Characteristics:** When alloyed, tungsten becomes highly durable, wear-resistant, and flexible, while maintaining excellent electrical conductivity.

Industrial Applications

- **Manufacturing & Technology:** It is an essential component in x-ray tubes, incandescent light bulbs, high-speed cutting tools, and welding electrodes.
- **Chemical Processes:** It frequently acts as a catalyst to accelerate chemical reactions.
- **Heavy Industries: Tungsten carbide**, recognized for its immense hardness, is indispensable to the metalworking, mining, and petroleum drilling industries.
- **Textiles & Ceramics:** Specialized tungsten compounds are utilized in producing ceramic pigments, fire-retardant coatings for fabrics, and color-resistant textile dyes.

Q. Consider the following statements regarding Tungsten:
1. It is a naturally occurring transition metal that is frequently found in its pure metallic form in nature.
2. It possesses the highest melting point of all known metals.
3. Hindustan Zinc Ltd recently received a license to explore a tungsten block in Andhra Pradesh.

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
Answer: (b)
Explanation:

- **Statement 1 is incorrect:** Tungsten occurs in rocks and minerals combined with other chemicals (like wolframite and scheelite), but never as a pure, uncombined metal.
- **Statement 2 is correct:** It has the highest melting point of all metals at 3410 °C.
- **Statement 3 is correct:** Hindustan Zinc Ltd (HZL) recently received the official license to explore and mine a tungsten block in Andhra Pradesh.

***

Scan to know more about our courses...

IAS 2-Year GS PCM | IAS 10-Month GS PCM | Degree + IAS | Prelims Test Series

4.1. ASSAM BANS DRONES AT AMUR FALCON ROOSTING SITES



Context

- Recently, the Assam government has formally banned unauthorized recreational and commercial drone operations near identified Amur falcon congregation and roosting sites.

About Amur Falcon (*Falco amurensis*)

- **Taxonomic Profile:** A long-distance migratory raptor belonging to the falcon family (*Falconidae*).
- **Alternative Nomenclature:** Widely recognized as the Eastern Red-footed Falcon, Eastern Red-footed Kestrel, Manchurian Falcon, and Red-legged Falcon.
- **Habitat Preferences:** Thrives across diverse landscapes, including open forests, grasslands, wetlands, and agricultural terrain.
- **Taxonomic Profile:** A small migratory bird of prey belonging to the falcon family (Falconidae).
- **Nomenclature:** Named after the Amur River region of eastern Russia and northeastern China, where it breeds.
- **Migration:** Undertakes one of the longest overwater migrations among raptors.

Morphological Features

- **Sexual Dimorphism:** Males and females exhibit distinctly different plumage patterns.
- **Male Traits:** Characterized by a dark, sooty-grey body with brownish-red thighs and vent, contrasted by a prominent white underwing lining visible in flight.
- **Female Traits:** Features a darker grey back paired with a white chest and vent heavily patterned with dark chevron spots.
- **Shared Characteristics:** Both sexes display bright orange eye-rings, feet, and beak bases (the cere).
- **Predatory Adaptations:** Combines exceptional speed and strength with highly acute eyesight to detect prey mid-flight or from vast distances.

Global Distribution

- **Breeding Grounds:** The species breeds extensively in southeastern Siberia and Northern China.
- **Wintering Grounds:** Undertakes a massive, flock-based, trans-continental migration to spend the winter across Southern and East Africa.

Amur Falcons in India

- **Crucial Midway Halts:** The northeastern states, specifically Nagaland, Manipur, Arunachal Pradesh, and parts of Assam, serve as critical transit and resting grounds during their annual cross-hemisphere migration.

- **Local Cultural Significance:** The raptor is locally revered and known as *Kahuaipuina* in Nagaland and Manipur.
- **Key Roosting Hub:** The Doyang Reservoir in Pangti Village, Nagaland, is a globally famous roosting site and stands as a highly successful community-led conservation model.
- **Global Recognition:** Owing to these massive seasonal congregations, Nagaland has earned the prestigious title of the "Falcon Capital of the World".
- **The Oceanic Crossing:** After staging in India, the flocks undertake a grueling 3,000 km non-stop flight over the Arabian Sea without resting to reach the African continent.

Threats & Conservation Status

- **Primary Threats:** Highly vulnerable to illegal hunting during migration, severe habitat loss at roosting sites, and disruptions from changing weather patterns.
- **IUCN Red List:** Least Concern (LC).
- **Wildlife (Protection) Act, 1972:** Accorded strict statutory protection under Schedule IV.

Q. With reference to the Amur falcon (Falco amurensis), consider the following statements:

I. It is an annual trans-continental migratory raptor that breeds in southeastern Siberia and northern China and winters in Southern Africa.

II. Unlike many raptor species, both the male and female Amur falcons possess identical sooty-grey plumage with no sexual dimorphism.

III. In India, the species receives statutory protection under the provisions of the Wildlife (Protection) Act, 1972.

How many of the statements given above are correct?

(a) Only one

(b) Only two

(c) All three

(d) None

Answer: B

Explanation:

Statement I is correct: The Amur falcon breeds across southeastern Siberia and northern China, passes through northeast India as a staging passage migrant, and completes an epic migration across the Indian Ocean to winter in Southern and East Africa.

Statement II is incorrect: The Amur falcon exhibits marked sexual dimorphism. The male has dark sooty-grey plumage with reddish thighs, orange orbital rings/feet, and striking white underwing linings, whereas the female has a darker grey back and a white underside heavily patterned with dark spots.

Statement III is correct: The Amur falcon is legally protected in India under the Wildlife (Protection) Act, 1972, which prohibits hunting, capturing, trapping, and unauthorised disturbance of the birds and their habitats.

4.2. THE EARTHSHOT PRIZE 2026



Context

- The **2026 Earthshot Prize Awards** were held in Mumbai on 17 November 2026, recognising five innovative solutions to global environmental challenges.
- India's **Mahindra Last Mile Mobility** won in the Clean Our Air category for promoting electric mobility.

About the Earthshot Prize

- **Established:** 2020 by Prince William.
- **Objective:** To identify, support and scale innovative solutions to major environmental challenges.
- **Award:** Each of the five winners receives **£1 million** to scale up their solutions.
- **Selection:** The 2026 finalists were selected from nearly 7,000 nominations across 169 countries.
- **Innovation:** For the first time, the 2026 selection process incorporated the science of *positive tipping points* to identify solutions capable of driving wider environmental transformation.

Five Earthshot Categories

The Prize is organised around five environmental goals to be achieved by 2030:

Earthshot Category	Objective
Protect and Restore Nature	Protect biodiversity and restore damaged ecosystems.
Clean Our Air	Improve air quality and promote clean transport.
Revive Our Oceans	Protect marine ecosystems and restore ocean health.
Build a Waste-Free World	Promote circular economy and reduce waste.
Fix Our Climate	Accelerate decarbonisation and climate action.

2026 Winners and Their Contributions

1. **Bhutan – Protect and Restore Nature**

   Recognised for conserving forests and Himalayan watersheds, which support downstream water security across South Asia.

2. **Mahindra Last Mile Mobility, India – Clean Our Air**

   Recognised for accelerating electric mobility through affordable electric three-wheelers and cleaner urban transport.

3. **Niue Ocean Wide Trust, Niue – Revive Our Oceans**

   Recognised for innovative conservation financing to protect marine ecosystems and support ocean conservation.

4. **PFAS-Free France, France – Build a Waste-Free World**

   Recognised for campaigning against PFAS or "forever chemicals" and promoting stronger regulation and pollution control.

5. **Ørsted, Denmark – Fix Our Climate**

   Recognised for transforming from a fossil-fuel-intensive energy company into a global offshore wind energy leader.

Significance

- **Climate innovation:** Recognises scalable solutions to environmental challenges beyond conventional climate mitigation.
- **Green transition:** Encourages investment in renewable energy, electric mobility, conservation and circular economy.
- **Global cooperation:** Connects governments, businesses, innovators, investors and communities to scale environmental solutions.
- **India's role:** Hosting the 2026 Awards in Mumbai highlights India's growing role in climate innovation, sustainable mobility and environmental leadership.

Q. Which of the following can be found as pollutants in the drinking water in some parts of India? (2013)

1. Arsenic 2. Sorbitol 3. Fluoride 4. Formaldehyde 5. Uranium

Select the correct answer using the codes given below:

(a) 1 and 3 only **(b)** 2, 4 and 5 only

(c) 1, 3 and 5 only **(d)** 1, 2, 3, 4 and 5

Ans: c

Explanation:

Arsenic (1) – Correct: Groundwater contamination by arsenic is reported in parts of India, particularly West Bengal, Bihar, Uttar Pradesh and Assam. Chronic exposure can cause arsenicosis, skin lesions and cancers.

Sorbitol (2) – Incorrect: Sorbitol is a sugar alcohol commonly used as a sweetener in food and pharmaceutical products. It is not a recognised groundwater pollutant of concern in this context.

Fluoride (3) – Correct: Excess fluoride in drinking water occurs in several parts of India and may cause dental and skeletal fluorosis.

Formaldehyde (4) – Incorrect: Although formaldehyde can contaminate water through industrial discharges, it is not among the major naturally occurring groundwater contaminants commonly identified in affected regions of India in this question.

Uranium (5) – Correct: Uranium contamination has been detected in groundwater in several parts of India, including Punjab, Haryana, Rajasthan and other regions. Excess exposure can cause kidney toxicity.

***

SCIENCE & TECHNOLOGY

5.1. IN-SPACE SELECTS THREE FIRMS FOR 3D RECONSTRUCTION OF INDIAN CITIES

Context



- The **Indian National Space Promotion and Authorization Centre (IN-SPACe)** has selected three Indian space companies to develop **High-Resolution Indian Human Settlement Layers (IHSL)** across Indian cities.

About High-Resolution Indian Human Settlement Layers (IHSL)

- **Objective:** IHSL aims to generate accurate and detailed geospatial information about human settlements using satellite-based Earth Observation (EO) data.
- **Technology Used:** The project will use **monocular imagery**, which involves extracting spatial information from images captured by a single camera or imaging sensor.
- **3D Reconstruction:** It will generate three-dimensional information about buildings and built-up areas using satellite imagery and computational models.

IN-SPACe and Its Role

- **Establishment:** IN-SPACe was established in June 2020 as an autonomous nodal agency under the Department of Space.
- **Objective:** It promotes, authorises and supervises the participation of Non-Governmental Entities (NGEs) in space activities.
- **Facilitating Private Participation:** It provides an enabling environment for private companies to develop space-based applications, technologies and infrastructure.
- **Seed Fund Scheme:** Under its Seed Fund Scheme for Use Case Demonstration by Non-Government Entities (NGEi), three Indian companies have been selected to develop and demonstrate IHSL.
- **Selected Companies:** SpacePixxel Technologies Pvt. Ltd., KaleidEO Space Systems Pvt. Ltd. and Azista Industries Pvt. Ltd. will collectively receive **₹1.46 crore** in seed funding.

Applications of Satellite-Based 3D Reconstruction

- **Urban Planning:** Provides detailed information about building distribution, height and built-up density for scientific urban planning.
- **Infrastructure Development:** Helps identify infrastructure requirements and supports the planning of roads, utilities and public facilities.
- **Disaster Risk Assessment:** Enables identification of vulnerable settlements and supports disaster preparedness and risk assessment.
- **Population Assessment:** Detailed settlement information can support population estimation and demographic planning.

- **Sustainable Urban Development:** Helps monitor urban expansion, land-use patterns and the spatial growth of cities.

Q. Consider the following statements regarding satellite-based Earth Observation and geospatial technology:

1. Monocular imagery involves the use of images captured by a single camera or imaging sensor for extracting spatial information.
2. Synthetic Aperture Radar (SAR) can acquire images of the Earth's surface during cloudy conditions and at night.
3. Earth Observation satellites are exclusively used for meteorological forecasting and atmospheric studies.

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

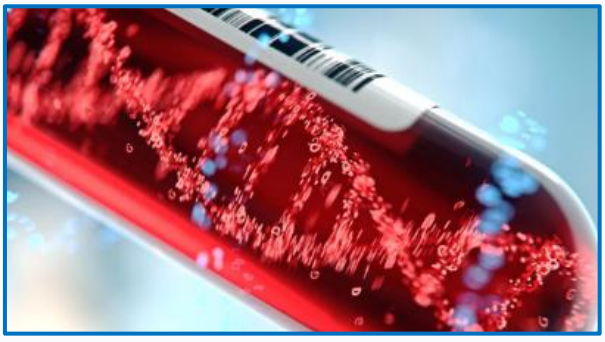
Correct Answer: (a) 1 and 2 only

Explanation:

- **Statement 1 is correct:** Monocular imagery refers to imagery captured using a single camera or imaging sensor. Spatial information, including building height and three-dimensional features, can be estimated through computational techniques and appropriate models.
- **Statement 2 is correct:** SAR uses microwave signals, which can penetrate clouds and operate independently of sunlight. Therefore, it can acquire Earth Observation data during cloudy conditions and at night.
- **Statement 3 is incorrect:** Earth Observation satellites have applications beyond meteorology, including agriculture, forestry, urban planning, disaster management, mineral exploration and environmental monitoring.

5.2. AI-BASED BLOOD TEST USES DNA CHANGES TO DETECT MULTIPLE TYPES OF CANCER

Context



CancerSpot, developed by Bengaluru-based **Strand Life Sciences**, is an AI-based blood test that uses **DNA sequencing and DNA analysis** to detect multiple types of cancer. In an independent validation study involving **1,480 participants across 43 hospitals**, it detected **72% of cancer cases** with a **1.4% false-positive rate**. The four-year study was published in the peer-reviewed journal *Proceedings of the National Academy of Sciences (PNAS)*.

About CancerSpot

- **Objective:** CancerSpot aims to detect multiple types of cancer through a single blood test by identifying cancer-associated changes in DNA.

- **Technology Used:** It combines **DNA sequencing and Artificial Intelligence (AI)** to analyse genetic and molecular patterns associated with cancer.
- **Circulating Cell-Free DNA (cfDNA):** Cells in the human body release small fragments of DNA into the bloodstream. These fragments are known as circulating or cell-free DNA.
- **Tumour-Derived DNA:** In individuals with cancer, some circulating DNA fragments originate from tumour cells and carry molecular changes that can indicate the presence of cancer.
- **DNA Methylation Analysis:** CancerSpot analyses patterns of DNA methylation, which differ between cancer cells and normal cells, to identify potential cancer signals.
- **Non-Invasive Detection:** The test aims to detect multiple cancers through a blood sample, without requiring a tissue biopsy for initial detection.

Important Concepts Related to Cancer Detection

1. **Circulating Cell-Free DNA (cfDNA)**
    - **Definition:** cfDNA refers to small fragments of DNA released by cells into the bloodstream, primarily through cellular breakdown and other biological processes.
    - **Cancer Detection:** In cancer patients, a fraction of cfDNA may originate from tumour cells and is known as **circulating tumour DNA (ctDNA)**.
    - **Significance:** Analysis of ctDNA can help identify cancer-associated genetic alterations and monitor changes in tumour characteristics.
2. **DNA Methylation**
    - **Definition:** DNA methylation is an **epigenetic modification** involving the addition of methyl groups to DNA, commonly at cytosine bases.
    - **Function:** It influences gene expression without changing the underlying DNA sequence.
    - **Cancer Association:** Abnormal DNA methylation patterns can alter the regulation of genes involved in cell growth, differentiation and tumour development.
    - **Diagnostic Significance:** Differences in methylation patterns between normal and cancerous cells can be used as potential biomarkers for cancer detection.
3. **Artificial Intelligence in Cancer Detection**
    - **Pattern Recognition:** AI can analyse complex molecular datasets to identify patterns associated with cancer.
    - **Early Detection:** AI-based analysis can support the identification of cancer-associated signals that may be difficult to detect through conventional analysis.
    - **Multi-Cancer Screening:** Integration of AI with DNA sequencing can facilitate the development of tests designed to detect multiple cancer types through a single blood sample.

Applications and Significance of AI-Based Cancer Detection

- **Early Cancer Detection:** Multi-cancer blood tests have the potential to identify cancer-associated molecular changes before the appearance of advanced clinical symptoms.

- **Non-Invasive Screening:** Blood-based testing can reduce dependence on invasive diagnostic procedures such as tissue biopsies during initial detection.
- **Multiple Cancer Detection:** A single blood sample can be analysed for molecular signals associated with different types of cancer.
- **Improved Diagnostic Accuracy:** AI-based analysis of DNA methylation patterns can help distinguish cancer-associated molecular signatures from those of normal cells.
- **Reduced Unnecessary Investigations:** A low false-positive rate can help minimise unnecessary follow-up investigations and invasive procedures among healthy individuals.
- **Personalised Healthcare:** Molecular information obtained through DNA analysis can contribute to more targeted diagnostic evaluation and subsequent clinical management.

Q. Consider the following statements regarding DNA-based cancer detection and epigenetic mechanisms:

1. Circulating tumour DNA (ctDNA) refers to DNA fragments originating from tumour cells that can be detected in the bloodstream.
2. DNA methylation can influence gene expression without altering the underlying DNA sequence.
3. DNA sequencing determines the order of nucleotide bases in a DNA molecule.
4. A false-positive result in cancer screening indicates that a person has cancer despite the absence of the disease.

Which of the statements given above are correct?

(a) 1, 2 and 3 only

(b) 1 and 4 only

(c) 2, 3 and 4 only

(d) 1, 2, 3 and 4

Correct Answer: (a) 1, 2 and 3 only

Explanation

- **Statement 1 is correct:** Circulating tumour DNA (ctDNA) consists of DNA fragments released by tumour cells into the bloodstream. Its analysis can help identify cancer-associated genetic alterations.
- **Statement 2 is correct:** DNA methylation is an epigenetic modification that regulates gene expression without changing the underlying nucleotide sequence.
- **Statement 3 is correct:** DNA sequencing is a molecular technique used to determine the precise order of nucleotide bases (A, T, G and C) in DNA.
- **Statement 4 is incorrect:** A false-positive result occurs when a diagnostic test indicates the presence of a disease in an individual who is actually disease-free. A false-negative result occurs when the test fails to identify an existing disease.

5.3. SELECTION AND TRAINING OF ASTRONAUTS FOR SPACEFLIGHT



Context

- As India advances its Gaganyaan mission to send humans beyond the Karman Line, the rigorous selection, specialized training, and quarantine protocols for astronaut-designates have come into sharp focus.

About the Karman Line

- **The Spatial Boundary:** An imaginary line exactly 100 km (62 miles) above mean sea level, globally recognized as the edge of space.
- **Origin:** Named after physicist Theodore von Kármán, who calculated the altitude where the atmosphere becomes too thin for aeronautical flight.

General Criteria for Astronaut Selection

- **Defining a Spacefarer:** Any individual successfully crossing the 100 km threshold is officially classified as an astronaut.
- **Preferred Candidates:** Military test pilots are historically favored for their expertise in handling high acceleration and sudden emergencies.
- **Prerequisites & Age:** Absolute essentials include robust health and psychological stability. There is no strict age limit; recorded spacefarers range from 18 to 90 years old.

ISRO's Gaganyaan Selection Process

- **Nodal Agencies:** The multi-tiered selection was executed collaboratively by the Indian Space Research Organisation (ISRO) and the Indian Air Force (IAF).
- **Medical Evaluation:** The Institute of Aerospace Medicine (IAM), Bengaluru, conducted all clinical evaluations due to its deep expertise in extreme aerospace stress.
- **The Final Crew:** Group Captains Prasanth Balakrishnan Nair, Ajit Krishnan, Angad Pratap, and Wing Commander Shubanshu Shukla were selected.

Essential Training and Quarantine Mandates

- **Foundational Training:** The crew received initial general training at the Yuri Gagarin Cosmonaut Training Center in Russia.
- **Physical Conditioning:** Includes high-G centrifuge training, weightlessness simulations via parabolic flights, and harsh survival drills.
- **Simulator Mastery:** Astronauts use part-task trainers and full-scale simulators to master spacecraft operations and off-nominal emergencies.
- **Pre-Launch Quarantine:** A strict two-week isolation protocol prevents infectious illnesses from spreading within the small, sealed crew module.

Q. Consider the following statements regarding the making of an astronaut:

1. The Karman line is an imaginary boundary situated exactly 100 km above sea level.
2. The Institute of Aerospace Medicine (IAM) handled the medical evaluation for the Gaganyaan mission.

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

Correct Answer: (c) Both 1 and 2

Explanation:

- **Statement 1 is correct:** The Karman line is an imaginary line 100 km above sea level. It is globally recognized by the FAI as the boundary where space begins, and anyone crossing it is considered an astronaut.
- **Statement 2 is correct:** The Institute of Aerospace Medicine (IAM), Bengaluru, handled the exhaustive psychological, physical, and clinical evaluations for the Gaganyaan mission due to its expertise in aerospace stress.

5.4. ISRO CONDUCTS GROUND STATIC TEST OF PSLV THIRD STAGE

Context



- Recently, the Indian Space Research Organisation (ISRO) has successfully carried out the ground static test of the Polar Satellite Launch Vehicle's (PSLV) third stage (PS3) at the Static Test Facility in the Satish Dhawan Space Centre, Sriharikota.

About Polar Satellite Launch Vehicle (PSLV)

- **Developed by:** Indian Space Research Organisation (ISRO).
- **Nature:** A four-stage, expendable launch vehicle designed primarily to place satellites into polar, sun-synchronous and other Earth orbits.
- **First Successful Launch:** 1994.
- **Nickname:** ISRO's workhorse launch vehicle.
- **Payload Capability:** Can launch satellites into multiple orbits, including Sun-Synchronous Polar Orbit (SSPO), Geosynchronous Transfer Orbit (GTO) and Low Earth Orbit (LEO).

About the Four Stages of PSLV

- **First Stage (PS1):** Uses solid propellant and is assisted by six strap-on solid rocket boosters in standard configurations.
- **Second Stage (PS2):** Uses liquid propellant, with the Vikas engine.
- **Third Stage (PS3):** Uses solid propellant and provides additional thrust to accelerate the launch vehicle.
- **Fourth Stage (PS4):** Uses liquid propellant and provides the final orbital injection of satellites.

About the Third Stage (PS3)

- **Nature:** A solid-propellant rocket stage.
- **Function:** Provides the required thrust to accelerate the launch vehicle after the second-stage separation.
- **Importance:** Plays a critical role in the vehicle's overall flight performance and orbital insertion sequence.

What is a Ground Static Test?

- It involves testing a rocket stage while it is held stationary on a test stand.
- The test evaluates the performance of the propulsion system and its components under controlled conditions.
- It helps assess whether the stage performs according to its design specifications before flight.

Significance of PSLV

- **Satellite Launches:** Supports the launch of Indian and foreign satellites.
- **Earth Observation:** Enables the placement of remote-sensing satellites into Sun-Synchronous Polar Orbits.
- **Multi-Satellite Capability:** Has demonstrated the capability to deploy multiple satellites in a single mission.
- **Space Research:** Supports scientific and interplanetary missions.

Q. With respect to the Polar Satellite Launch Vehicle (PSLV) and its propulsion stages, consider the following statements:

I. The PSLV is a four-stage launch vehicle characterized by alternating solid and liquid propulsion stages, where the third stage (PS3) uses a liquid engine.

II. A ground static test involves firing the rocket engine while it is firmly secured to a test stand to evaluate its thrust and structural integrity without launching.

III. The Satish Dhawan Space Centre (SDSC) at Sriharikota serves exclusively as a launch pad and does not house facilities for testing solid rocket motors.

How many of the statements given above are correct?

(a) Only one

(b) Only two

(c) All three

(d) None

Answer: A

Explanation:

- **Statement I is incorrect:** The PSLV is a four-stage vehicle, but the third stage (PS3) is a **solid rocket motor**, not a liquid engine. The PSLV alternates stages, meaning the 1st and 3rd are solid, while the 2nd and 4th are liquid.
- **Statement II is correct:** A ground static test involves firmly securing the rocket motor to a ground-based test stand and igniting it to measure performance parameters like thrust, pressure, and structural integrity under simulated flight conditions.
- **Statement III is incorrect:** The Satish Dhawan Space Centre (SDSC) at Sriharikota is not exclusively a launch pad. It houses robust testing infrastructure, including the **Static Test Facility** specifically utilized for conducting ground static tests on solid rocket motors.

5.5. MATSYA-6000: ADVANCING INDIA'S DEEP-OCEAN CAPABILITIES

Context



- Recently, the Ministry of Earth Sciences has officially announced that the inaugural 500-metre trial dive of the Matsya-6000 submersible is scheduled for early 2027 in the Bay of Bengal.

Technical Specifications of Matsya-6000?

- **Type:** Manned deep-sea scientific submersible.
- **Project:** Samudrayaan, under the Deep Ocean Mission (DOM).
- **Developer:** National Institute of Ocean Technology (NIOT), Chennai.
- **Ministry:** Ministry of Earth Sciences.
- **Capacity:** Designed to carry three aquanauts to a depth of 6,000 metres.
- **Hull:** 2.1-metre-diameter spherical titanium-alloy structure.
- **Endurance:** 12–16 hours of normal operation and up to 96 hours in emergencies.

Institutional Collaboration and Execution

- **Administrative Authority:** Implemented under the overarching purview of the **Ministry of Earth Sciences (MoES)** as part of the ₹4,077 crore Deep Ocean Mission.
- **Nodal Development:** The National Institute of Ocean Technology (NIOT), Chennai, is the primary agency spearheading the submersible's design and conceptualization.
- **Space-Ocean Synergy:** The Indian Space Research Organisation (ISRO) is collaborating directly on the fabrication and structural integration of the highly specialized titanium hull.
- **Operational Readiness:** Designated pilots (aquanauts) are currently undergoing rigorous specialized training ahead of the phased shallow-water trials.

Main Objectives of the Mission

- **Pioneering Exploration:** This represents India's absolute first crewed mission dedicated to studying deep-ocean mineral resources and conducting comprehensive biodiversity assessments.
- **Ecological Safeguards:** The submersible is utilized strictly for non-destructive observation and exploration, ensuring that fragile benthic ecosystems remain entirely undisturbed.
- **Policy Convergence:** The initiative acts as a foundational operational pillar for the Deep Ocean Mission, directly propelling the Central Government's broader Blue Economy mandate.

Samudrayaan Project: Exploring the Deep Ocean

- **Launched:** 2021, under the Deep Ocean Mission (DOM).
- **Nodal Ministry:** Ministry of Earth Sciences.
- **Implementing Agency:** National Institute of Ocean Technology (NIOT), Chennai.
- **Objective:** Develop indigenous technology for manned deep-sea exploration.
- **Key Component:** Matsya-6000, a manned submersible designed to carry three aquanauts to a depth of 6,000 metres.
- **Major Focus Areas:**
  - Exploration of deep-sea biodiversity and marine ecosystems.
  - Assessment of polymetallic nodules and other deep-sea minerals.
  - Advancement of indigenous underwater technologies.
- **Significance:** Enhance India's scientific, technological and strategic capabilities in deep-ocean exploration.

Q. Consider the following statements regarding the Samudrayaan Mission and Matsya-6000:

1. The Samudrayaan Mission is executed under the administrative purview of the Ministry of Earth Sciences.
2. The Matsya-6000 submersible features a titanium alloy personnel sphere designed exclusively by the National Institute of Ocean Technology without any external collaboration.
3. The submersible is engineered to sustain a maximum continuous operational endurance of 96 hours under standard conditions.

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

Answer: (a)

Explanation:

- **Statement 1 is correct:** The Samudrayaan Mission is implemented by the Ministry of Earth Sciences (MoES), with NIOT acting as the primary nodal agency.

- **Statement 2 is incorrect:** While NIOT is developing the overall submersible, the highly specialized 2.1-metre titanium alloy personnel sphere is being constructed in direct collaboration with the Indian Space Research Organisation (ISRO).
- **Statement 3 is incorrect:** The submersible is designed for a standard continuous operational endurance of 12 hours. The 96-hour capacity is strictly reserved for emergency life-support scenarios.

5.6. INDIA'S PUSH FOR ADVANCED CHEMISTRY CELL MANUFACTURING

Context



- Recently, the Ministry of Heavy Industries received **22 bids for 10 GWh of Advanced Chemistry Cell (ACC) battery manufacturing capacity** earmarked for Grid-Scale Stationary Storage Systems (GSSS) under the PLI Scheme.

About Advanced Chemistry Cells (ACCs)

- They are **new-generation battery technologies**, such as lithium-ion cells, utilized in electric vehicles (EVs), consumer electronics, and renewable energy storage.
- They include advanced battery technologies that use different combinations of electrochemical materials and chemistries to achieve improved energy storage performance.
- They possess significantly **higher energy density, faster-charging capabilities**, and **longer life cycles** compared to conventional lead-acid batteries.

About the National Programme on Advanced Chemistry Cell (ACC) Battery Storage

- **Ministry:** Ministry of Heavy Industries.
- **Approval:** Approved by the Union Cabinet in May 2021.
- **Nature:** Production Linked Incentive (PLI) Scheme.
- **Financial Outlay:** ₹18,100 crore.
- **Objective:** To establish domestic giga-scale ACC battery manufacturing facilities and reduce dependence on imported battery cells.
- **Target:** Establish 50 GWh of domestic ACC manufacturing capacity.

Significance of ACC Manufacturing

- **Energy Security:** Reduces dependence on imported battery cells.
- **Renewable Energy Integration:** Helps store electricity generated from intermittent renewable sources such as solar and wind.
- **Grid Stability:** Supports electricity supply management and grid balancing.
- **Electric Mobility:** Strengthens India's domestic EV battery manufacturing ecosystem.

- **Atmanirbhar Bharat:** Promotes indigenous manufacturing capabilities and technological self-reliance.

Q. With respect to Advanced Chemistry Cells (ACCs) and the ACC-PLI scheme in India, consider the following statements:

I. Advanced Chemistry Cells (ACCs) like lithium-ion offer lower energy density but significantly longer lifecycles compared to traditional lead-acid batteries.

II. The ACC-PLI scheme mandates that participating companies achieve a domestic value addition of at least 60% within five years.

III. Under the scheme, manufacturing incentives are provided upfront based on the installed capacity of the battery plant.

How many of the statements given above are correct?

(a) Only one

(b) Only two

(c) All three

(d) None

Answer: A

Explanation:

- **Statement I is incorrect:** Advanced Chemistry Cells (ACCs) offer **higher** energy density, not lower, in addition to faster charging and longer lifecycles compared to traditional lead-acid batteries.
- **Statement II is correct:** The ACC-PLI scheme requires companies to meet phased domestic value-addition targets, specifically 25% within two years and **60% within five years**.
- **Statement III is incorrect:** Under the scheme, incentives are **not** provided upfront based on installed capacity; they are strictly linked to **actual commercial battery sales**.

***

Scan to know more about our courses...

IAS 2-Year GS PCM | IAS 10-Month GS PCM | Degree + IAS | Prelims Test Series

6.1. KARTAR SINGH SARABHA

Context



- Recently, the Defence Minister paid tribute to freedom fighter Kartar Singh Sarabha through a social media post, remembering his supreme sacrifice at the age of 19 and highlighting his courage as an enduring inspiration for future generations.

About Kartar Singh Sarabha

- **Birth:** 24 May 1896, in Sarabha village, Ludhiana district, Punjab.
- **Early Life:** Travelled to the United States for higher studies and became associated with the Indian revolutionary movement abroad.
- **Ghadar Movement:** Joined the **Ghadar Party**, established in 1913 in the United States to organise an armed revolution against British colonial rule in India.
- **Role:** Actively participated in revolutionary activities and helped publish the Ghadar newspaper in Punjabi.
- **Revolutionary Activities:** Returned to India in 1914 to participate in the Ghadar revolutionary movement against British rule.
- **Lahore Conspiracy Case:** Arrested in 1915 and tried for his involvement in the Ghadar revolutionary movement.
- **Execution:** Sentenced to death and executed on **16 November 1915** at Lahore Central Jail at the age of 19.

Role in the Ghadar Movement?

- He contributed to the publication of the Ghadar newspaper, particularly its Gurmukhi edition.
- He wrote patriotic articles and poems to inspire Indians against British rule.
- In 1914, he returned to India to organise an armed revolt against British rule.
- He helped mobilise Indian soldiers for the planned **Ghadar uprising of 1915**.

Why Is Kartar Singh Sarabha Remembered?

- He was one of the youngest revolutionaries of India's freedom struggle.
- His sacrifice inspired later revolutionaries, including **Bhagat Singh**.
- He remains an important figure in the history of revolutionary nationalism.

Q. Consider the following statements regarding Kartar Singh Sarabha:

1. He was associated with the Ghadar Party.
2. He was executed in the Lahore Conspiracy Case.
3. He was associated with the Kakori Conspiracy.

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
Answer: (a) 1 and 2 only
Explanation:

- **Statement 1 is correct:** Sarabha was an active member of the Ghadar Party.
- **Statement 2 is correct:** He was executed in connection with the Lahore Conspiracy Case in 1915.
- **Statement 3 is incorrect:** The Kakori Conspiracy took place in 1925 and was unrelated to Sarabha.

***

Scan to know more about our courses...

IAS 2-Year GS PCM | IAS 10-Month GS PCM | Degree + IAS | Prelims Test Series

MISCELLANEOUS

7.1. KOCHON PRIZE 2026

Context



- Recently, REACH (Resource Group for Education and Advocacy for Community Health), an Indian non-profit, received the Kochon Prize 2026 for its contribution to combating TB, becoming the first Indian civil society organisation to receive the award.

About Kochon Prize

- **Established:** 2006, in honour of the late Chong-Kun Lee, founder of the Kochon Foundation.
- **Awarded by**: Stop TB Partnership, with funding from the Kochon Foundation, Republic of Korea (South Korea).
- **Purpose:** Recognises individuals and organisations for significant contributions to combating tuberculosis (TB).
- **Frequency**: Annual award.
- **Prize:** Medal and monetary award of US$65,000.

Global Co-Winners of 2026

The 2026 Kochon Prize is a shared international accolade distributed among three distinguished health organizations for their localized TB interventions:

- **REACH** (India)
- **Centre for Health Solutions** (Kenya)
- **Marshall Islands TB Control Program**

About REACH

- **Full Name**: Resource Group for Education and Advocacy for Community Health (REACH).
- **Nature**: A not-for-profit, women-led organisation working to strengthen India's tuberculosis response.
- **Focus Areas:** Community-based TB care, patient support, awareness generation and advocacy.
- **Approach**: Promotes integrated, people-centred TB care by addressing clinical, social, family and mental health challenges faced by patients.

Significance

- **Global Recognition:** Highlights India's contribution to community-based TB prevention and control.
- **Community Participation:** Recognises the role of community health workers, TB Nanbans and TB Champions in supporting TB patients.

- **Integrated Healthcare:** Emphasises the importance of addressing social and psychological barriers alongside clinical treatment.

Q. With respect to the Kochon Prize and tuberculosis (TB) management in India, consider the following statements:

I. The Kochon Prize is awarded globally to recognize significant contributions to the fight against tuberculosis.

II. REACH is the first Indian government agency to receive the Kochon Prize for its TB eradication efforts.

III. REACH utilizes an "integrated care" approach that strictly isolates clinical needs from social and mental health challenges.

How many of the statements given above are correct?

(a) Only one

(b) Only two

(c) All three

(d) None

Answer: A

Explanation:

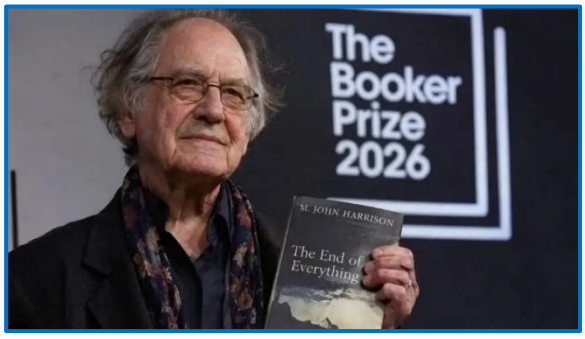
Statement I is correct: The Kochon Prize, presented by the Kochon Foundation and the Stop TB Partnership, recognizes significant global contributions to fighting TB.

Statement II is incorrect: REACH is a non-profit, civil society organization, not a government agency, and it is the first Indian NGO to receive this prize.

Statement III is incorrect: The integrated care approach used by REACH specifically addresses social, community, mental health, and situational challenges alongside clinical needs, rather than isolating them.

7.2. M. JOHN HARRISON WINS BOOKER PRIZE 2026

Context



- Recently, British author M. John Harrison won the 2026 Booker Prize for his satirical dystopian novel, The End of Everything.

Understanding the Booker Prize

- **About:** A leading literary award presented annually for the best sustained work of **fiction written in English** and published in the United Kingdom or Ireland.
- **Organisation:** The prize is managed by the Booker Prize Foundation, an independent registered charity, and is currently sponsored by Crankstart.
- **Background:** Inaugurated in 1969 as the Booker–McConnell Prize, it was later sponsored by the Man Group (2002–2019).

Eligibility Criteria

- **Nationality:** Open to writers of any nationality, provided the work is an original novel written in English.
- **Publication:** The book must be published in the UK or Ireland during the specified prize year.
- **Exclusions:** Self-published works, translations, and non-fiction are strictly ineligible.
- **Independent Panel:** A five-member literary jury evaluates submissions to select an annual longlist, a six-book shortlist, and the final winner.
- **Global Expansion:** Initially limited to Commonwealth nations, global eligibility was introduced in 2014.

The 2026 Winner

- **Author:** M. John Harrison, an 81-year-old British author.
- **Winning Work:** *The End of Everything*, a dystopian novel set along England's Channel coast following a societal collapse and the arrival of mysterious alien entities.
- **Cash Prize:** The winner receives £50,000 tax-free, while the six shortlisted authors receive £2,500 each and a specially bound edition of their books.

Indian Winners of the Booker Prize

- **V.S. Naipaul (1971):** Won for *In a Free State* (an author of Indian descent, Trinidadian-British).
- **Salman Rushdie (1981):** Won for *Midnight's Children* (later awarded the Booker of Bookers and the Best of the Booker).
- **Arundhati Roy (1997):** Won for *The God of Small Things*, making history as the first resident Indian citizen woman to win.
- **Kiran Desai (2006):** Won for *The Inheritance of Loss*.
- **Aravind Adiga (2008):** Won for *The White Tiger*.

Q. With respect to the Booker Prize, consider the following statements:

I. The Booker Prize is awarded annually to the best original work of fiction written in any language and translated into English.

II. The prize was expanded in 2014 to include authors of any nationality, provided their novel is written in English and published in the UK or Ireland.

III. Arundhati Roy was the first resident Indian citizen woman to win the Booker Prize for her novel *The God of Small Things*.

How many of the statements given above are correct?

(a) Only one

(b) Only two

(c) All three

(d) None

Answer: B

Explanation:

Statement I is incorrect: The Booker Prize is strictly for original novels written in English. Works translated into English are eligible for the *International* Booker Prize, not the main Booker Prize.

Statement II is correct: In 2014, the prize rules were changed to allow authors of any nationality to enter, as long as the book is written in English and published in the UK or Ireland.

Statement III is correct: Arundhati Roy won the Booker Prize in 1997, becoming the first resident Indian citizen woman to receive the honor.

7.3. NCB-LED DRIVE TARGETS ILLEGAL CANNABIS AND OPIUM CULTIVATION

Context



The **NCB** has launched multi-State operations against illegal **cannabis and opium poppy cultivation**, destroying over **1.37 lakh kg of cannabis plants across 458 acres** in Arunachal Pradesh. The drive aims to eliminate illicit cultivation by **December 2027** under the MHA's **Vision Document on Narcotics Control (2026–2029)** through inter-agency coordination and a **whole-of-government approach**.

About the NCB-Led Anti-Narcotics Drive

- **Nodal Agency:** The **Narcotics Control Bureau (NCB)** is leading operations against illegal cannabis and opium cultivation in coordination with Central and State agencies.
- **Geographical Coverage:** Operations target forest areas, remote hill districts and community lands across identified States.
- **Inter-Agency Coordination:** The drive involves NCB, State police, **CRPF, SSB, Anti-Narcotics Task Forces** and district administrations.
- **Hotspot Mapping:** Agencies identify vulnerable areas to facilitate targeted surveillance and destruction of illicit crops.
- **Capacity Building:** NCB conducts training programmes on intelligence collection and identification of illegal cultivation sites.
- **Target:** Eliminate illicit cannabis and poppy cultivation in identified areas by **December 2027** through a **whole-of-government approach**.

Important Concepts Related to Narcotics Control

1. **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985**
    - **Objective:** Provides the legal framework for controlling narcotic drugs and psychotropic substances in India.
    - **Section 8:** Prohibits cultivation of cannabis and opium poppy and other specified activities, except as permitted under the Act.

- **Medical and Scientific Use:** Allows regulated use of narcotic substances for medical and scientific purposes.
- **Regulation:** Governs production, manufacture, possession, sale, transportation, import and export of narcotic substances.

2. **Cannabis (Hemp)**
   - **Definition:** Cannabis refers to plants belonging to the genus *Cannabis*.
   - **Charas:** Separated cannabis resin, whether crude or purified.
   - **Ganja:** Flowering or fruiting tops of the cannabis plant, excluding seeds and leaves when not accompanied by the tops.
   - **Cannabis Plant:** Any plant belonging to the genus *Cannabis* under the NDPS Act.
   - **Legal Status:** Cultivation is generally prohibited, except for permitted purposes under the NDPS Act.
3. **Opium and Opium Poppy**
   - **Opium Poppy:** Plant of the species *Papaver somniferum L.*, used for obtaining opium.
   - **Opium:** Coagulated juice of the opium poppy.
   - **Morphine:** Naturally occurring opium alkaloid used as a powerful pain-relieving medicine.
   - **Codeine:** Opium alkaloid used in certain pain-relief and cough medicines.
   - **Poppy Straw:** All parts of the opium poppy, except seeds, after harvesting.
   - **Legal Regulation:** Opium poppy cultivation is permitted only under the prescribed licensing and regulatory framework.
4. **Narcotics Control Bureau (NCB)**
   - **Establishment:** Established on **17 March 1986** under the NDPS Act, 1985.
   - **Administrative Control:** Functions under the **Ministry of Home Affairs (MHA)**.
   - **Headquarters:** New Delhi.
   - **Nodal Agency:** Coordinates national efforts to combat drug abuse and illicit trafficking.
   - **Key Functions:** Intelligence collection, investigation, enforcement operations and coordination with Central, State and international agencies.
5. **Whole-of-Government Approach in Narcotics Control**
   - **Inter-Agency Coordination:** Promotes cooperation among Central ministries, State governments, police and intelligence agencies.
   - **Intelligence Sharing:** Helps identify cultivation hotspots, trafficking routes and criminal networks.
   - **Integrated Enforcement:** Facilitates coordinated surveillance and destruction of illicit crops.
   - **Capacity Building:** Improves the ability of enforcement personnel to detect illegal cultivation.
   - **Community Participation:** Encourages local communities and district administrations to support grassroots monitoring.

Q. Consider the following statements regarding narcotics control in India:

1. The Narcotics Control Bureau functions under the Ministry of Home Affairs.
2. The NDPS Act, 1985 prohibits the cultivation of cannabis and opium poppy, except as permitted under the Act and applicable rules.
3. Ganja refers to the separated resin obtained from the cannabis plant.
4. The United Nations Office on Drugs and Crime (UNODC) is headquartered in Vienna, Austria.

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

Correct Answer: (b) 1, 2 and 4 only

Explanation

- **Statement 1 is correct:** The Narcotics Control Bureau functions under the Ministry of Home Affairs and serves as the national nodal agency for combating illicit drug trafficking.
- **Statement 2 is correct:** Section 8 of the NDPS Act, 1985 prohibits the cultivation of cannabis and opium poppy, subject to permitted medical and scientific purposes and applicable regulatory provisions.
- **Statement 3 is incorrect:** Ganja refers to the flowering or fruiting tops of the cannabis plant. The separated resin obtained from the cannabis plant is known as **charas**.
- **Statement 4 is correct:** The UNODC is headquartered in **Vienna, Austria**, and works towards combating illicit drugs and international organised crime.

***

Scan to know more about our courses...

IAS 2-Year GS PCM | **IAS 10-Month GS PCM** | **Degree + IAS** | **Prelims Test Series**