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POLITY & GOVERNANCE

1.1. CAN BAR ASSOCIATIONS REFUSE TO DEFEND AN ACCUSED?

Context

- The **Supreme Court**, while hearing a case arising from the **Faizabad Bar Association's resolution** refusing to represent the accused in the **Ayodhya Ram Temple theft case**, held that **Bar Associations cannot collectively resolve to deny legal representation to an accused person**.
- The Court declared such resolutions **illegal, unconstitutional, and contrary to professional ethics**, reaffirming that the **right to legal representation is an essential component of the Right to Fair Trial under Article 21**.



Constitutional Provisions

- **Article 21** – Right to Life and Personal Liberty; includes the **Right to Fair Trial** and **Right to Legal Representation**.
- **Article 22(1)** – Every arrested person has the right **to consult and be defended by a legal practitioner of his/her choice**.
- **Article 39A (DPSP)** – Directs the State to provide **free legal aid** and ensure **equal access to justice**.

Supreme Court's Observations

- Every accused, irrespective of the nature of the offence, has the **constitutional right to legal representation**.
- **Bar Associations cannot pass resolutions** directing advocates not to appear for a particular accused.
- Such resolutions violate:
 - **Fundamental Rights** of the accused.
 - **Professional ethics** governing advocates.
 - **Rule of Law** and **fair trial principles**.
- Advocates have the **freedom to accept or decline a brief individually**, but **Bar Associations cannot collectively prohibit representation**.

Bar Council of India (BCI) Rules

Under the **Bar Council of India Rules (Standards of Professional Conduct and Etiquette)**:

- An advocate is generally **bound to accept any brief** in courts or tribunals where he/she ordinarily practices.
- An advocate may refuse a brief **only for special and sufficient reasons**.

- The decision to accept or refuse a case **rests with the individual advocate**, not the Bar Association.

Important Judicial Pronouncements

1. A.S. Mohammed Rafi v. State of Tamil Nadu (2010)

- Supreme Court held that **Bar Associations cannot prevent advocates from defending an accused**.
- Declared such resolutions **illegal and unconstitutional**.

2. A.S. Kureshi v. High Court of Gujarat (2009)

- Gujarat High Court held that refusal by a Bar Association to accept briefs is **unlawful**.
- Distinguished between **individual refusal** by an advocate and **collective boycott** by a Bar Association.

3. Jayalalithaa v. State of Karnataka (2014)

- Supreme Court observed that **a fair trial is the cornerstone of criminal justice**.
- Every accused must receive a **fair, impartial, and reasonable trial**.

Historical Precedents of Bar Boycotts

Despite clear legal rulings, Bar Associations have historically passed such resolutions during highly publicized or sensitive criminal cases:

- **2008 Mumbai Terror Attacks:** A Bar resolution opposed representing Ajmal Kasab.
- **2012 Delhi Gangrape Case:** Lawyers at Saket courts passed a resolution refusing representation.
- **2019 Hyderabad Vet Case:** Lawyers collectively declined to defend the accused.

About Bar Council of India (BCI)

- Statutory Body established under the Advocates Act, 1961.
- Regulates legal education and professional standards.
- Prescribes the Code of Professional Ethics for advocates.

Q. Which of the following Articles of the Constitution are directly related to the right to legal representation and access to justice?

1. Article 21
2. Article 22(1)
3. Article 39A

Select the correct answer using the code below:

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

The correct answer is D. 1, 2 and 3.

Explanation:

- **Article 21:** The Supreme Court has repeatedly held that the **right to a fair trial** and legal representation is a core feature and an integral part of the right to life and personal liberty under Article 21.
- **Article 22(1):** This article explicitly guarantees a fundamental right stating that no person who is arrested shall be denied the right to **"consult, and to be defended by, a legal practitioner of his choice."**
- **Article 39A:** A Directive Principle of State Policy (DPSP) that mandates the State to ensure the legal system promotes justice on a basis of equal opportunity, specifically requiring the provision of **free legal aid** to ensure access to justice is not denied due to economic or other disabilities.

1.2. DECLINING EXCLUSIVE BREASTFEEDING RATES IN INDIA

Context

- Data from the **National Family Health Survey-6 (NFHS-6)** reveals a concerning public health trend: despite significant strides in institutional deliveries and maternal health parameters across India, the rate of **Exclusive Breastfeeding (EBF)** for infants under six months has seen a sharp decline.



Key Findings from NFHS-6 Data

The shift in maternal and child health indicators between NFHS-5 and NFHS-6 highlights a critical disconnect:

- **The Decline in EBF:** Nationally, exclusive breastfeeding for infants under six months dropped from **63.7% in NFHS-5 to 55.8% in NFHS-6**.
- **The Urban-Rural Divide:** The decline was unexpectedly steeper in rural sectors than in urban centers:
 - **Rural areas:** Fell from **65.1% to 56.2%**.
 - **Urban areas:** Fell from **59.6% to 54.5%**.
- **The Institutional Success Paradox:** This drop occurred alongside a rise in institutional deliveries (improving to **90.6%**) and a noticeable expansion in the early initiation of breastfeeding within one hour of birth (climbing from **41.8% to 50.1%**).
- **State-Wise Trends:**
 - **Sharp Declines:** States like Uttar Pradesh (dropped to **34.6%**), Haryana (dropped to **41.2%**), and Delhi (dropped to **54%**) recorded significant contractions.
 - **Improvements:** Notable gains and strong performances were reported in **Kerala, Gujarat, and West Bengal**.

What is Exclusive Breastfeeding (EBF)?

Exclusive Breastfeeding means:

- Feeding an infant **only breast milk** for the **first six months** of life.
- No water, formula, animal milk, or solid foods, except:
 - Oral Rehydration Solution (ORS)
 - Vitamins
 - Minerals
 - Prescribed medicines
- WHO & UNICEF Recommendation: Initiate breastfeeding **within one hour of birth**.

Major Drivers Behind the Decline

1. **Economic & Labor Realities:** Over 16.69 crore women are registered on the **e-Shram portal** as informal sector workers. Women in the informal sector often lack financial cushions or formal workplace adjustments, meaning they must return to manual or migratory labor within weeks of childbirth.
2. **Legislative Disconnect:** The **Maternity Benefit Act, 1961** (amended in 2017) guarantees **26 weeks of paid maternity leave**, but these protections remain largely restricted to the organized sector, leaving the vast majority of working mothers vulnerable.
3. **Medical Obstacles:** The rise in **Caesarean-section (C-section) delivery rates** (rising from 21.5% to 27.2%) introduces early complications, including delayed lactation initialization, perceived low milk supply, and a lack of consistent post-operative lactation counselling.
4. **Commercial Pressure:** Aggressive marketing of infant formula milk alternatives places unnecessary pressure on mothers, causing formula to be used as a premature substitute rather than an essential medical fallback.

Government Initiatives & Regulatory Framework

- **The IMS Act:** The **Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992** strictly protects breastfeeding from commercial market forces by banning the advertisement and promotion of infant formula.
- **Pradhan Mantri Matru Vandana Yojana (PMMVY):** A conditional cash transfer scheme providing partial wage compensation to pregnant and lactating mothers to ensure adequate rest and nutrition.
- **Saksham Anganwadi and POSHAN 2.0:** Oversees nutrition delivery services under the Integrated Child Development Services (ICDS) structure.

Q. Consider the following statements regarding Exclusive Breastfeeding (EBF):

1. It means feeding infants only breast milk for the first six months of life.
2. WHO recommends initiating breastfeeding within one hour of birth.
3. Water may be given to exclusively breastfed infants during the first six months.

Which of the statements given above are correct?

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

The correct answer is B. 1 and 2 only.

Explanation:

- **Statement 1 is correct:** Exclusive Breastfeeding (EBF) means that the infant receives only breast milk (including milk expressed or from a donor) for the first six months of life.
- **Statement 2 is correct:** The World Health Organization (WHO) and UNICEF explicitly recommend initiating breastfeeding within one hour of birth and continuing it exclusively for the first six months.
- **Statement 3 is incorrect:** Under Exclusive Breastfeeding, no other liquids or solids—**not even water**—are given to the infant during the first six months, with the exception of oral rehydration solutions, drops, or syrups containing vitamins, minerals, or medicines.

1.3. THE E20 ETHANOL MILESTONE

Context

- A petition has been filed in the Supreme Court challenging the "silent compulsion" of the nationwide E20 petrol rollout. The petition seeks full public disclosure of the chemical composition of the fuel and its technical compatibility safeguards, urging the court to establish an independent expert committee to evaluate the real-world impacts of higher ethanol blends on legacy vehicles.



Key Technical & Legal Challenges

- **Legacy Compatibility:** BIS specifications confirm E20 compatibility is strictly vehicle-specific, exposing older, uncalibrated engines to accelerated component wear and fuel-pump failures.
- **Constitutional & Consumer Scrutiny:** A Supreme Court petition by advocate Narendra Kumar Goswami invokes fundamental freedoms, **Article 300A** (right to property), and the **Consumer Protection Act**, arguing that full disclosure of fuel compatibility in a state-mandated market is a strict constitutional requirement.
- **Resource Strain:** Scaling 1G biofuels diverts essential food crops and severely depletes groundwater via water-intensive feedstocks like sugarcane.

What is E20 Fuel and How is it Structured?

- **Composition:** E20 is a specialized automotive fuel blend consisting of 20% ethanol and 80% conventional petrol by volume.
- **Octane Upgrade:** Standard petrol in India holds a **Research Octane Number** (RON) of 91 to 92. In contrast, E20 fuel is mandated to have a minimum rating of **95 RON**.
- **Combustion Mechanics:** RON functions as a direct indicator of fuel stability. A higher octane rating increases the fuel's resistance to premature detonation under high pressure, leading to smoother and cleaner engine combustion.
- **Energy Density:** Ethanol possesses a lower energy density compared to pure petrol. Consequently, uncalibrated engines using E20 fuel experience a minor reduction in real-world fuel economy and mileage.

Chemical & Material Properties of Ethanol

- **Formula:** Ethanol (C_2H_5OH) is a clear, volatile, and biodegradable alcohol.
- **Hygroscopic:** Absorbs moisture from the air, which may cause **phase separation** and corrosion in older fuel systems.
- **Source:** Produced by fermenting biomass such as **sugarcane, maize, wheat, and damaged food grains**.
- **Fuel Grade:** Mixed with **denaturants** to make it undrinkable.

India's Ethanol Blending Policy

- **Launch:** Ethanol Blended Petrol (EBP) Programme to reduce crude oil imports, cut emissions, and support farmers.
- **E10 Target:** Achieved nationwide in **June 2022**.
- **E20 Target:** Advanced from **2030 to ESY 2025–26**.
- **Achievement:** India reached **19.93% ethanol blending by July 2025**, effectively achieving the **E20 target** ahead of schedule.

Q. With respect to the Ethanol Blended Petrol (EBP) Programme and the chemical properties of biofuels, consider the following statements:

- E20 fuel is formulated with a lower Research Octane Number (RON) than conventional petrol to match the combustion parameters of uncalibrated legacy vehicles.
- Ethanol is a hygroscopic substance, which makes it highly prone to moisture absorption and subsequent phase separation when stored in conventional fuel tanks.
- Fuel-grade ethanol is legally treated with denaturants during the manufacturing process to render the alcohol unfit for human consumption.

How many of the statements given above are correct?

- Only one
- Only two
- All three
- None

Answer: B

Explanation:

- **Statement I is incorrect:** Conventional petrol in India typically carries an octane rating of 91 to 92 RON, whereas E20 fuel is mandated to feature a higher minimum rating of **95 RON** to ensure enhanced combustion stability.
- **Statement II is correct:** Ethanol is highly hygroscopic in nature, meaning it readily absorbs water from its surroundings. This water accumulation can cause the fuel mixture to separate into distinct layers (phase separation) and accelerate the corrosion of older engine components.
- **Statement III is correct:** Fuel ethanol must be processed with chemical denaturants to ensure it cannot be diverted or consumed as an alcoholic beverage, maintaining its strict classification as an industrial energy resource.

1.4. KARNATAKA LAUNCHES DRIVE TO IMPROVE HIV DIAGNOSIS

Context

- Recently, the **Karnataka State AIDS Prevention Society (KSAPS)** launched a special awareness and screening campaign to improve **HIV diagnosis and treatment uptake** in the State.

Key Points

- According to the **Karnataka State AIDS Prevention Society (KSAPS)**, around **56,406 people** in the State are estimated to be unaware of their HIV-positive status.
- The initiative seeks to strengthen **early diagnosis, treatment, and counselling services**, especially among people outside the formal healthcare system.
- The campaign has been launched under **Project Padma Basavathpatha**, which focuses on reaching vulnerable and high-risk populations.
- The programme aims to encourage people to voluntarily undergo **HIV testing**, as many individuals avoid testing due to stigma and discrimination.
- As part of the initiative, **mobile awareness campaigns** have been launched in collaboration with the **National AIDS Control Organisation (NACO)**.
- **BreakFree QR codes** have been introduced to enable individuals to access a confidential self-risk assessment and information on HIV testing centres and counsellors.

National AIDS Control Organisation (NACO)

- Established in **1992** under the **Ministry of Health and Family Welfare**.
- Responsible for implementing the **National AIDS Control Programme (NACP)**.
- India follows the global **95-95-95 targets**, which aim to ensure that:



- 95% of people living with HIV know their status.
- 95% of diagnosed individuals receive treatment.
- 95% of those receiving treatment achieve viral suppression.

About HIV/AIDS

- **HIV (Human Immunodeficiency Virus)** attacks the body's immune system, particularly **CD4 (T-helper) cells**.
- If left untreated, HIV can progress to **AIDS (Acquired Immunodeficiency Syndrome)**, the most advanced stage of infection.
- HIV spreads through:
 - Unprotected sexual contact.
 - Infected blood transfusions.
 - Sharing contaminated needles.
 - Mother-to-child transmission during pregnancy, childbirth, or breastfeeding.
- HIV does **not** spread through casual contact, food, water, or mosquito bites.

Q. With reference to HIV/AIDS and the National AIDS Control Organisation (NACO), consider the following statements:

1. The National AIDS Control Organisation (NACO) was established under the Ministry of Health and Family Welfare.
2. HIV primarily attacks the CD4 (T-helper) cells of the human immune system.
3. India follows the global 95-95-95 targets, under which 95% of people living with HIV should achieve viral suppression.
4. HIV can spread through mosquito bites and casual contact.

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:** Correct. NACO was established in **1992** under the **Ministry of Health and Family Welfare**.
- **Statement 2:** Correct. HIV attacks the body's immune system, particularly **CD4 (T-helper) cells**.
- **Statement 3:** Correct. The global **95-95-95 targets** aim to ensure that 95% of people living with HIV know their status, 95% of diagnosed individuals receive treatment, and 95% of those receiving treatment achieve viral suppression.
- **Statement 4:** Incorrect. HIV does **not** spread through **mosquito bites or casual contact**.

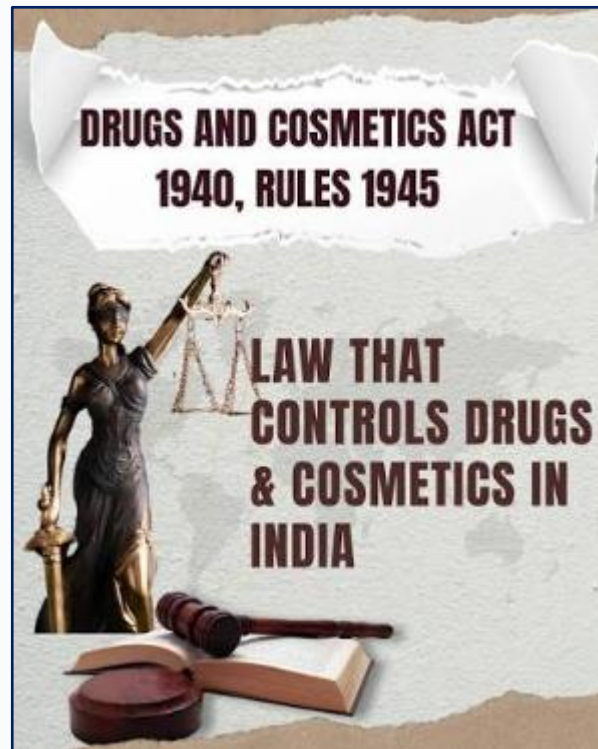
1.5. UNION HEALTH MINISTRY AMENDS DRUGS RULES, 1945

Context

- The Union Ministry of Health and Family Welfare has amended the **Drugs and Cosmetics Rules, 1945** to regulate the production and sale of medicinal products containing alcohol. The amendment seeks to prevent the misuse of medicines with high alcohol content and strengthen quality control mechanisms.

Why was the amendment introduced?

- The government observed that certain medicinal products containing **ethyl alcohol** were being misused as intoxicants.
- Some of these formulations contain high concentrations of ethyl alcohol, in certain cases up to 80–90% v/v, making them susceptible to misuse for intoxication.
- The amendment aims to:
 - Prevent diversion of medicinal products for non-medical use.
 - Ensure better regulation of alcohol-containing medicines.
 - Strengthen monitoring and record-keeping mechanisms.



Key Amendments

- Formulations containing more than 12% v/v ethyl alcohol in quantities exceeding 30 mL will no longer be exempt under Schedule K and must obtain licences under the **Drugs and Cosmetics Act, 1940**.
- These products have been included under **Schedule H1** of the Drugs Rules, making them subject to **stricter prescription** and regulatory requirements.
- Manufacturers and sellers must maintain detailed records of production, distribution, sales, prescriptions, and inventory.

The Main Schedules for Medical Drugs Include

- Schedule H:** Prescription drugs that can be sold only on the prescription of a registered medical practitioner.
- Schedule H1:** Drugs subject to stricter regulation and record-keeping requirements due to the risk of misuse.
- Schedule X:** Narcotic and psychotropic substances requiring stringent control and special storage records.
- Schedule K:** Drugs exempted from certain provisions relating to manufacture, sale, and distribution under specified conditions.

- **Schedule G:** Drugs that must carry the warning: "Caution: It is dangerous to take this preparation except under medical supervision."
- **Schedule C and C1:** Biological and special products, such as vaccines, sera, and blood products.
- **Schedule M:** Prescribes Good Manufacturing Practices (GMP) and requirements for pharmaceutical manufacturing units.

About the Drugs and Cosmetics Act, 1940

- It regulates the import, manufacture, and distribution of drugs and cosmetics in India and ensures their safety, efficacy, and quality.
- Administered by the Ministry of Health and Family Welfare, the Act is enforced by the Central Drugs Standard Control Organisation (CDSCO) and State Drug Authorities.
- It lays down standards for drugs, cosmetics, medical devices, and clinical trials.

Q. With reference to the pharmaceutical regulatory framework in India and recent amendments to the Drugs Rules, 1945, consider the following statements:

1. Under Schedule K of the Drugs Rules, 1945, certain medicinal products are granted exemptions from regular licensing requirements under specific conditions.
2. Placing a medicinal formulation under Schedule H1 legally permits its over-the-counter (OTC) sale without a physician's prescription, provided a trace register is maintained.
3. The statutory threshold for mandatory licensing of ethyl alcohol-containing medicinal formulations applies exclusively if the alcohol concentration touches 100% v/v.

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

Correct Answer: (a) 1 only

Statement-wise Explanation:

- **Statement 1 is correct:** Schedule K explicitly contains provisions and lists of specific drugs/formulations that are exempted from certain licensing and operational parameters outlined in Chapter IV of the Drugs and Cosmetics Act.
- **Statement 2 is incorrect:** Shifting a medicine to Schedule H1 strictly prohibits over-the-counter (OTC) sales. It mandates that the formulation can *only* be sold against a valid prescription from a Registered Medical Practitioner alongside stricter logbook maintenance.
- **Statement 3 is incorrect:** The statutory threshold mandated by the government for removing the exemption is an ethyl alcohol concentration of **more than 12% v/v** in quantities exceeding 30 mL, not 100% v/v.

1.6. CISF'S CRACKDOWN ON ILLEGAL COAL MINING

Context

- Recently, under the Government's "**Zero Coal Leakage Plan**," the Central Industrial Security Force (CISF) recovered over **428 metric tonnes** of illegally mined coal during a five-day operation across **Jharkhand and West Bengal**, leading to four FIRs under the **Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act)**.



The "Zero Coal Leakage" Initiative

- Objective:** To eliminate the illegal mining, transit loss, theft, and unauthorized diversion of coal resources through coordinated, time-bound enforcement.
- Nodal Agencies:** Jointly driven by the **Ministry of Coal**, local police, state district administrations, and Central Public Sector Undertakings (CPSUs) under **Coal India Limited (CIL)** (such as BCCL, ECL, and CCL).
- Technological Intervention:** The plan leverages modern tools including drone surveillance, GPS-enabled transit-route monitoring, real-time e-way bill verification, and Integrated Command and Control Centres to track coal supply chains seamlessly.

Legal and Statutory Framework: MMDR Act, 1957

The legal actions against illegal mining are processed under the provisions of the **Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act)**.

- Empowerment of Central Forces:** Under designated sections of the MMDR Act (Sections 22, 23B, and 24), authorized officers of the CISF and coal companies possess the statutory power to search, seize illegally transported minerals/vehicles, and initiate prosecution.
- Constitutional Domain (Center vs. State):**
 - Under the **Seventh Schedule** of the Indian Constitution, the regulation of mines and mineral development falls under both the **Union List (Entry 54)** and the **State List (Entry 23)**.
 - The regulation of **major minerals** (like Coal, Lignite, Iron Ore) is controlled directly by the Central Government under the MMDR Act.
 - Minor minerals** (like sand, gravel, clay) fall completely under the administrative and regulatory purview of respective **State Governments**.
- Cognizable Offenses:** Amendments to the MMDR Act make illegal mining, trespassing, and unauthorized storage cognizable offenses. State governments are also permitted to establish **Special Courts** for speedy trials related to illegal mining.

Distribution of Key Coalfields

- Bharat Coking Coal Limited (BCCL):** Chiefly operates around the **Dhanbad** region in Jharkhand (the "Coal Capital of India").

- **Eastern Coalfields Limited (ECL):** Spans parts of West Bengal (Raniganj coalfields) and Jharkhand (Rajmahal).
- **Central Coalfields Limited (CCL):** Concentrated primarily in the Ranchi, Bokaro, and Karanpura coalfields of Jharkhand.

Q. Consider the following statements regarding mineral governance in India:

1. The Central Industrial Security Force (CISF) has statutory powers of search and seizure under the MMDR Act, 1957.
2. State Governments have the exclusive power to frame rules for preventing illegal mining of minor minerals.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) None

Answer: Both 1 and 2.

- Statement 1 is correct: In line with the government's "zero coal leakage" initiative, the CISF is enforcing provisions against illegal coal mining, theft, and unauthorized transportation under the Mines and Minerals (Development and Regulation) Act, 1957. As part of these operations, the CISF has successfully performed search and seizure activities, including the recovery of illegally transported coal, the seizure of vehicles (like Hyva trucks and motorcycles), and the registration of First Information Reports (FIR).
- Statement 2 is correct: This is a fundamental principle of India's mineral governance based on the constitutional division of power. While the Union Government regulates major minerals (like coal) under the MMDR Act, 1957, Section 15 of the same Act explicitly empowers State Governments to make rules for the regulation of "minor minerals" (such as sand, gravel, and clay), including the prevention of illegal mining and illegal transport of these substances.

1.6. VBSA BILL, 2025 AND THE AUTONOMY OF INSTITUTES OF NATIONAL IMPORTANCE (INIS)

Context

- Recently, the proposed **Viksit Bharat Shiksha Adhishtan (VBSA) Bill, 2025** has sparked concerns among **Institutes of National Importance (INIs)**, including IITs, IIMs and IISERs, over its potential impact on institutional autonomy.
- Several states have opposed the Bill over concerns of excessive centralisation. It is currently under review by a Joint Parliamentary Committee (JPC) headed by MP D. Purandeswari.



Key Features of the Bill

1. Objectives and Regulatory Reforms

- The VBSA Bill, 2025 aims to execute a structural transformation of India's higher education regulatory framework, aligning with the vision of the National Education Policy (NEP) 2020.
- It proposes the establishment of a single, unified apex regulatory body called the **Viksit Bharat Shiksha Adhishthan (VBSA)**.

2. Repeal of Existing Higher Education Regulatory Laws

- The Bill seeks to dismantle the current fragmented regulatory system by repealing the foundational Acts of three major bodies:
 - **University Grants Commission (UGC) Act, 1956**
 - **All India Council for Technical Education (AICTE) Act, 1987**
 - **National Council for Teacher Education (NCTE) Act, 1993**

3. Exemptions from the Regulatory Framework

- The Bill explicitly excludes **law** and **medical education** from its regulatory scope, leaving them to their respective professional councils.

4. Financial Powers and Institutional Funding

- Unlike the UGC, the proposed VBSA will **not** possess the authority to disburse financial grants or control the funding of institutions.

Why are IITs, IIMs and Other INIs Opposing the Bill?

- **Threat to Institutional Autonomy:** IITs and IIMs, governed by separate Acts of Parliament, fear that a common regulatory framework could undermine their academic, administrative, and financial autonomy.
- **Conflict with Existing Laws:** The Bill may override provisions of the IIT Act, 1961, IIM Act, 2017, IIIT Acts, and IISER Acts, which already define governance and appointment procedures.
- **One-size-fits-all Approach:** Institutions argue that uniform regulations may not suit specialized technical and research institutions with distinct governance structures.
- **Institutes of National Importance:** Institutions such as NIDs and the Indian Institute of Science (IISc), Bengaluru, operate under separate legal frameworks and enjoy special status.

Important Statutory Bodies in Higher Education

1. University Grants Commission (UGC)

- **Statutory body** under the UGC Act, 1956.
- Coordinates, determines, and maintains standards of higher education.
- Headquarters: New Delhi.

2. All India Council for Technical Education (AICTE)

- **Statutory body** under the AICTE Act, 1987.

- Regulates technical education, including engineering, management, pharmacy, and architecture.
- Headquarters: New Delhi.

3. National Council for Teacher Education (NCTE)

- **Statutory body** under the NCTE Act, 1993.
- Regulates teacher education programmes such as B.Ed. and D.El.Ed.
- Headquarters: New Delhi.

Constitutional Provisions

- **Entry 66, Union List (List I):** Coordination and determination of standards in institutions for higher education and scientific research.
- **Entry 25, Concurrent List:** Education falls under the Concurrent List (subject to Entry 63–66 of Union List).

Q. With reference to the Institutes of National Importance (INIs) in India, consider the following statements:

1. Every Institute of National Importance is established or declared through an Act of Parliament.
2. IITs and IIMs derive their governance framework from their respective Acts.
3. The University Grants Commission administers all Institutes of National Importance.

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: (a) 1 and 2 only

Explanation

- **Statement 1:** Correct. INIs are established or declared by Acts of Parliament.
- **Statement 2:** Correct. IITs, IIMs, IISERs, IIITs, etc., function under their respective statutes.
- **Statement 3:** Incorrect. UGC coordinates higher education broadly, but INIs are governed by their own Acts and Boards/Councils rather than being directly administered by the UGC.

INTERNATIONAL RELATIONS

2.1. INDIA'S DIPLOMATIC BID FOR THE 2028-29 UNSC NON-PERMANENT SEAT

Context

- India is officially launching a diplomatic campaign to secure a non-permanent seat at the **United Nations Security Council (UNSC)** for the **2028-29 term**. The bid necessitates substantial diplomatic mobilization to secure international support, as India will be directly contesting against Tajikistan for the **Asia-Pacific region** seat.



What is the United Nations Security Council (UNSC)?

- The UNSC is one of the **six principal organs** of the United Nations, primarily responsible for the maintenance of international peace and security.
- It is the **only UN body** possessing the authority to issue **legally binding resolutions** on member states.

How is the Membership Structured?

- Total Members:** The UNSC currently consists of **15 member states**, where each member holds one vote.
- Permanent Members (P5):** Five nations hold permanent status—**China, France, Russia, the United Kingdom, and the United States**.
- Veto Power:** The P5 nations possess an absolute **veto power**, allowing any single permanent member to block a resolution regardless of international support.
- Non-Permanent Members:** Ten seats are allocated on a regional basis. The UN General Assembly (UNGA) elects five non-permanent members each year by a **two-thirds majority** for **two-year terms**.
- Re-election:** A retiring member is **not eligible for immediate re-election**.
- Historical Expansion:** While the UN has grown to 193 member states today, the UNSC composition has expanded **only once (in 1965)**, increasing from 11 to 15 members.

What are the Prominent Negotiating Groups?

Negotiating Group	Core Composition	Key Objectives & Characteristics
G4 (Group of Four)	Brazil, India, Germany, and Japan	Mutually support each other's bids for permanent UNSC seats ; heavily advocate for the inclusion of African nations in the permanent category.

Uniting for Consensus (Coffee Club)	Led by Italy, Spain, Pakistan, South Korea, etc. (Approx. 40 states)	Strictly opposes the expansion of permanent seats to prevent the entrenchment of new regional powers. Proposes expanding only the non-permanent category.
L.69 Group	Diverse pre-reform group of developing countries (Asia, Africa, Latin America)	Seeks an expansion of both permanent and non-permanent categories ; demands better representation for developing nations and Small Island Developing States (SIDS).
Committee of Ten (C-10)	10 African nations mandated by the African Union (AU)	Promotes the Ezulwini Consensus , demanding at least two permanent seats with full veto powers and five non-permanent seats exclusively for Africa.

Q. With respect to the United Nations Security Council (UNSC) and its reform negotiating groups, consider the following statements:

- I. The UNSC is the only principal organ of the United Nations possessing the authority to issue legally binding resolutions on member states.
- II. The Uniting for Consensus group, also known as the Coffee Club, advocates for the immediate inclusion of the G4 nations as permanent members of the UNSC.
- III. Any structural amendment to the UN Charter strictly requires ratification by a two-thirds majority of member states, which must include all five permanent members without opposition.

How many of the statements given above are correct?

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

Correct Answer: (b) Only two

Statement-wise Explanation:

- **Statement I is correct:** The **United Nations Security Council (UNSC)** is the only principal organ of the United Nations whose resolutions can be **legally binding** on member states, particularly when adopted under **Chapter VII of the UN Charter**.
- **Statement II is incorrect:** The **Uniting for Consensus (UfC)** group, also known as the **Coffee Club**, **opposes the creation of new permanent seats** in the UNSC, including those sought by the **G4 countries (India, Japan, Germany, and Brazil)**. Instead, it supports expanding the category of **non-permanent or longer-term elected seats**.
- **Statement III is correct:** Under **Article 108 of the UN Charter**, any amendment to the Charter requires approval by a **two-thirds majority of the UN General Assembly** and ratification by **two-thirds of UN member states, including all five permanent members (P5)**. Therefore, no structural amendment can come into force unless every P5 member ratifies it.

2.2. HUMMUS TRAIL' IN INDIA AND THE GENEVA CONVENTIONS

Context

- Recently, the **Hind Rajab Foundation** filed a complaint with Indian authorities against an Israeli citizen visiting Himachal Pradesh, alleging involvement in war crimes during the Gaza conflict.
- The incident has renewed attention on the "**Hummus Trail**", the **Geneva Conventions**, and India's obligations under **International Humanitarian Law (IHL)**.



What is the 'Hummus Trail'?

- Definition:** The Hummus Trail refers to a network of destinations in India that are particularly popular among Israeli tourists, especially young Israelis who travel after completing their mandatory military service.
- Demography:** Every year, roughly 80,000 Israelis visit India. A significant number are young soldiers who have just finished their mandatory military service in the Israeli Defence Forces (IDF), executing an extended trip (known as *Tiul Gado!*) to decompress.
- Geographical Hubs in India:**
 - North India:** Kasol (often dubbed 'Mini-Israel'), Old Manali, and Gondla Village in Himachal Pradesh; Rishikesh and Almora (Uttarakhand); Dharamkot (Himachal Pradesh); and Varanasi (Uttar Pradesh).
 - South & West India:** Hampi and Gokarna (Karnataka), Kodaikanal (Tamil Nadu), Goa, and the Andaman and Nicobar Islands.

What are the Geneva Conventions?

- The **Geneva Conventions (1949)** are the cornerstone of **International Humanitarian Law (IHL)**.
- They establish rules for protecting persons who are not participating in hostilities during armed conflicts.
- India is a **State Party** to all **four Geneva Conventions**.
 - First Convention:** Protects wounded and sick soldiers on land.
 - Second Convention:** Protects wounded, sick, and shipwrecked military personnel at sea.
 - Third Convention:** Protects **prisoners** of war (POWs).
 - Fourth Convention:** Protects **civilians** during armed conflict and occupation.
- Domestic Legislation:** India **does not have a standalone**, explicit domestic criminal statute defining or criminalizing "war crimes". Instead, it has enacted the **Geneva Conventions Act, 1960** to give effect to the international treaties.

India and the Geneva Conventions Act, 1960

- Criminalizes **grave breaches** of the Geneva Conventions.
- India **can arrest any person**, regardless of nationality, for such offences.
- The offence can be prosecuted even if committed outside India.
- If arrest is not possible, **the Ministry of Home Affairs and the Bureau of Immigration** may facilitate the deportation of the accused.

Difference Between International Humanitarian Law and Human Rights Law

International Humanitarian Law	International Human Rights Law
Applies during armed conflict	Applies at all times
Regulates conduct during war	Protects fundamental human rights
Based mainly on Geneva Conventions	Based on international human rights treaties

Q. With reference to the Geneva Conventions, consider the following statements:

1. India is a party to all four Geneva Conventions of 1949.
2. The Fourth Geneva Convention deals primarily with the protection of civilians during armed conflicts.
3. Universal jurisdiction permits a State to prosecute certain grave international crimes irrespective of where they were committed or the nationality of the accused.

Which of the statements given above is/are correct?

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

Answer: (a) 1, 2 and 3

Explanation

- **Statement 1 is Correct:** India is a State Party to all four Geneva Conventions of 1949.
- **Statement 2 is Correct:** The Fourth Geneva Convention protects civilians during armed conflict and occupation.
- **Statement 3 is Correct:** Universal jurisdiction allows prosecution of grave international crimes regardless of where they occurred or the nationality of the accused.

2.3. PLACES IN NEWS: KORDOFAN, DARFUR, AND BLUE NILE STATES

Why in News?

- The ongoing conflict between the Sudanese Armed Forces (SAF) and the paramilitary Rapid Support Forces (RSF), which erupted in April 2023, has severely intensified.
- According to a UNICEF report, active warfare and drone strikes are heavily concentrated in the **Kordofan, Darfur,** and **Blue Nile** states of Sudan, leading to massive civilian casualties and acute humanitarian crises.

Key Geographical & Strategic Insights

1. Darfur Region

- **Location & Borders:** Located in **western Sudan**, it shares international borders with Chad, the Central African Republic, and Libya.



- **Topography:** Features the **Jabal Marrah**, a volcanic massif towering 900 meters above the Sudanic plain. The drainage from this massif supports a settled population, contrasting with the northern and eastern parts of Darfur which are hyper-arid or semi-deserts.
- **Significance:** Darfur has historically faced prolonged ethnic conflicts, including the 2003 war which targeted non-Arab indigenous populations such as the Fur, Zaghawa, and Masalit peoples.

2. Kordofan Region

- **Location:** Situated in the **central-southern** belt of Sudan, it is administratively split into North, South, and West Kordofan states.
- **Topography:** Dominated by the **Nuba Mountains** in South Kordofan, which are home to the indigenous Nuba peoples.
- **Resource Profile:** West Kordofan hosts critical oilfields that are essential to Sudan's economic infrastructure, rendering it a highly contested zone.
- **Water Scarcity:** The region lacks perennial streams, meaning both populations and livestock are heavily dependent on permanent wells and groundwater.

3. Blue Nile State

- **Location:** Positioned in the **southeastern corner** of Sudan, bordering Ethiopia and South Sudan.
- **The Blue Nile River:** The state is named after the river that originates in **Lake Tana (Ethiopia)**. It flows through this region before merging with the White Nile at Khartoum to form the main Nile River.
- **Economic/Strategic Value:** The region encompasses the **Roseires Dam**, a critical reservoir used for generating hydroelectric power and managing agricultural irrigation along the fertile clay plains of central Sudan.

Geographic Profile of Sudan

- **Borders:** It is a Northeast African nation bordered by seven countries: **Egypt** (North), **Libya** (Northwest), **Chad** (West), **Central African Republic** (Southwest), **South Sudan** (South), **Ethiopia** (Southeast), and **Eritrea** (East).
- **Maritime Access:** Its eastern coastline opens up to the **Red Sea**, hosting the vital maritime trade hub of Port Sudan.
- **Major Drainage:** The Nile Basin covers the vast majority of its area, driven by the confluence of the White Nile (from Uganda) and the Blue Nile (from Ethiopia) meeting at the capital city, **Khartoum**.

Q. Consider the following pairs:

Region in News	Country
1. Darfur	Sudan
2. Kordofan	Ethiopia
3. Blue Nile	South Sudan

How many of the pairs given above are correctly matched?

- (a) Only one pair
- (b) Only two pairs
- (c) All three pairs
- (d) None of the pairs

Answer: (a)

- **Explanation:** Only Pair 1 is correctly matched. Darfur is in western Sudan. Kordofan is a region in central-southern Sudan (not Ethiopia). Blue Nile is a state located in southeastern Sudan (not South Sudan).

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ENVIRONMENT & GEOGRAPHY

3.1. FOUR STATES REACH PACT ON NARMADA PROJECT PAYMENTS

Context

- The States of **Madhya Pradesh, Gujarat, Maharashtra, and Rajasthan** have reached an agreement to settle **pending payments related to the Narmada Water Disputes Tribunal (NWD) Award**.
- The settlement is expected to improve **inter-state cooperation** in water resource management and ensure uninterrupted water and power benefits from the **Sardar Sarovar Project**.



About Narmada Water Disputes Tribunal (NWD)

- Establishment:** The Central Government constituted the NWD on October 6, 1969, under Section 4 of the Inter-State Water Disputes Act, 1956.
- The Stakeholders:** The adjudication involved four states: Madhya Pradesh, Gujarat, Maharashtra, and Rajasthan.
- The Tribunal spent a decade deliberating and delivered its final binding Award on December 7, 1979.

About the Narmada River

- Origin:** The Narmada originates from the **Amarkantak Plateau** in the Anuppur district of Madhya Pradesh. It flows westwards in a **rift valley** between the Satpura in the south and the Vindhyan range in the north.
- Flow Direction:** It flows westward over a length of approximately **1,312 km** before emptying into the **Gulf of Khambhat** (Arabian Sea) near Bharuch in Gujarat.
- States Covered:** It **flows through Madhya Pradesh, Maharashtra, and Gujarat**. Madhya Pradesh holds the lion's share of its basin area (nearly 87%).
- The Narmada basin** extends over MP, Gujarat, Maharashtra, and Chhattisgarh, which is nearly 3% of the country's total geographical area.
- It forms a picturesque gorge in marble rocks and **Dhuandhar waterfall near Jabalpur**.

Important Dams on the Narmada

Dam	State	Importance
Sardar Sarovar Dam	Gujarat	Multipurpose project for irrigation, drinking water and hydropower
Indira Sagar Dam	Madhya Pradesh	India's largest reservoir by storage capacity
Omkareshwar Dam	Madhya Pradesh	Hydropower and irrigation
Maheshwar Dam	Madhya Pradesh	Hydroelectric project
Bargi Dam	Madhya Pradesh	First major completed dam on the Narmada

Constitutional & Legal Provisions of Inter- state Rivers

Article 262: Parliament may provide for adjudication of disputes relating to inter-State rivers. Parliament may exclude the jurisdiction of the Supreme Court and other courts in such disputes.

Inter-State River Water Disputes Act, 1956: Provides for establishment of Water Disputes Tribunals. Tribunal awards are binding on the concerned States

Q. Consider the following statements regarding the Narmada Water Disputes Tribunal (NWDT):

1. It was established under the provisions of the Inter-State Water Disputes Act, 1956.
2. The tribunal awarded the largest share of utilizable water to the state of Gujarat.
3. Rajasthan, despite being a non-riparian state, was allocated a share of the Narmada waters by the tribunal.

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

The correct answer is **(c) 1 and 3 only**.

Detailed Explanation:

- **Statement 1 is correct:** The Narmada Water Disputes Tribunal (NWDT) was constituted by the Central Government in October 1969 under Section 4 of the **Inter-State Water Disputes Act, 1956** to adjudicate the water-sharing dispute among the concerned states.
- **Statement 2 is incorrect:** The tribunal assessed the total utilizable quantum of water at 28 Million Acre Feet (MAF). It awarded the **largest share to Madhya Pradesh** (18.25 MAF), followed by Gujarat (9.00 MAF).
- **Statement 3 is correct:** Even though Rajasthan is a **non-riparian state** (the river does not flow through its territory), it was allocated a share of **0.50 MAF** by the tribunal to meet the critical irrigation and drinking water needs of its drought-prone desert districts.

3.2. PIL IN DELHI HIGH COURT CHALLENGES FUNCTIONING OF NATIONAL BOARD FOR WILDLIFE

Context

- Recently, a group of retired forest and wildlife officials and conservationists filed a **Public Interest Litigation (PIL)** before the **Delhi High Court**, alleging that the **National Board for Wildlife (NBWL)** has increasingly prioritized infrastructure and development projects over wildlife conservation.



Key Highlights

- The petition alleges that the **National Board for Wildlife (NBWL)** has deviated from its statutory mandate of wildlife conservation and habitat protection.
- According to the petitioners, the Board approved **more than 97% of the proposals** related to infrastructure and development projects between **2014 and 2026**.
- The petition argues that the current approach could adversely affect protected areas, forests, biodiversity, and long-term conservation efforts.
- The petition seeks judicial guidelines on how the NBWL should perform its statutory functions under the **Wildlife (Protection) Act, 1972**.

About National Board for Wildlife (NBWL)

- The NBWL is a **statutory body** constituted under the **Wildlife (Protection) Act, 1972**.
- It is chaired by the **Prime Minister of India**, while the **Union Minister for Environment, Forest and Climate Change** serves as the Vice-Chairperson.
- The Board advises the Central Government on policies and measures for wildlife conservation and protection.
- The NBWL consists of **47 members**, including government officials, Members of Parliament, scientists, environmentalists, and representatives of non-governmental organizations.

Standing Committee of NBWL

- The **Standing Committee of the NBWL** is responsible for considering proposals involving diversion of forest land and activities within or around protected areas.
- Between **2014 and 2026**, the Standing Committee reportedly considered more than **1,100 proposals**.
- It plays an important role in granting clearances for projects located within **National Parks, Wildlife Sanctuaries, Conservation Reserves, and Eco-Sensitive Zones (ESZs)**.

About Wildlife (Protection) Act, 1972

- Enacted in **1972** to provide legal protection to wild animals, birds, and plants.
- Provides for the creation of:
 - National Parks
 - Wildlife Sanctuaries
 - Conservation Reserves
 - Community Reserves
- The Act establishes various authorities, including the **National Board for Wildlife**.

Q. With reference to the National Board for Wildlife (NBWL), consider the following statements:

1. The National Board for Wildlife is a statutory body constituted under the Wildlife (Protection) Act, 1972.
2. The Prime Minister of India serves as the Chairperson of the NBWL.
3. The Standing Committee of the NBWL grants clearances for projects located within or around protected areas and Eco-Sensitive Zones.
4. The Wildlife (Protection) Act, 1972 provides for the creation of Biosphere Reserves and Ramsar Sites.

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

Answer: (a) 1, 2 and 3 only

Explanation:

- **Statement 1:** Correct. The **National Board for Wildlife (NBWL)** is a statutory body constituted under the **Wildlife (Protection) Act, 1972**.
- **Statement 2:** Correct. The **Prime Minister of India** is the Chairperson of the NBWL, while the Union Minister for Environment, Forest and Climate Change serves as the Vice-Chairperson.
- **Statement 3:** Correct. The **Standing Committee of the NBWL** considers proposals involving activities within or around protected areas and Eco-Sensitive Zones (ESZs).
- **Statement 4:** Incorrect. The Wildlife (Protection) Act, 1972 provides for **National Parks, Wildlife Sanctuaries, Conservation Reserves, and Community Reserves**. **Biosphere Reserves and Ramsar Sites are not created under this Act.**

3.3. KEN-BETWA RIVER LINKING PROJECT: DEVELOPMENT VS. CONSERVATION

Context

- Recently, tribal villagers, predominantly women, in Madhya Pradesh's Chhatarpur and Panna districts intensified protests against the **Ken-Betwa River Linking Project (KBLP)**, demanding fair compensation and better rehabilitation through a symbolic "hanging satyagraha."

Key Facts: Ken-Betwa Link Project (KBLP)

- KBLP is the **first initiative** to be implemented under the **National Perspective Plan (NPP)** for the interlinking of rivers.
- **Objective:** It aims to transfer "surplus" water from the Ken River in Madhya Pradesh to the water-deficit Betwa River in Uttar Pradesh to address the chronic drought issues of the **Bundelkhand region**.
- **Beneficiary States:** Jointly benefits Madhya Pradesh and Uttar Pradesh.



- **Nodal Agency:** Implemented by the **National Water Development Agency (NWDA)** under the **Ministry of Jal Shakti**.
- **Core Infrastructure:**
 - **Phase I:** Includes the construction of the **Daudhan Dam** complex, a 221-km long link canal, and a low-level tunnel.
 - **Phase II:** Includes the Lower Orr Dam (across the Orr River), the Bina Complex project, and the Kotha Barrage.

Geography & Hydrology Related Facts

Attribute	Ken River	Betwa River
Origin	Kaimur Hills (Jabalpur district, Madhya Pradesh)	Vindhya Range (north of Hoshangabad, Madhya Pradesh)
Outflow	Confluence with the Yamuna River at Chilla village, UP	Confluence with the Yamuna River at Hamirpur, UP
Major Tributaries	Bawas, Dewar, Kaith, Baik, Kopra, Bearma	Newan, Orr, Dhasan
Key Highlights	Known for the rare, semi-precious Sajhar stone .	Historically known as the Vetrawati .

Environmental and Ecological Concerns

- **Habitat Fragmentation:** Environmentalists warn that the construction of the Daudhan Dam will submerge over 4,000 hectares of forest land inside the Panna Tiger Reserve, impacting critical wildlife corridors for tigers, vultures, and gharials.
- **Forest Loss:** The project expects the clearance/felling of over 23 lakh trees, raising major conservation challenges.
- **Clearance Bodies Involved:** The project requires complex statutory clearances from the National Board for Wildlife (NBWL), the National Green Tribunal (NGT), and Forest Advisory Committees.

Institutional & Strategic Framework

1. National Perspective Plan (NPP)

- **Launched:** 1980 by the **Ministry of Irrigation** (now Ministry of Jal Shakti) for inter-basin water transfers.
- **Components:**
 - **Himalayan Component:** 14 river links.
 - **Peninsular Component:** 16 river links, including the **Ken–Betwa River Linking Project (KBLP)**.

2. National Water Development Agency (NWDA)

- **Established:** 1982 as an autonomous society under the **Ministry of Jal Shakti**.
- **Role:** Conducts water balance studies, prepares **Feasibility Reports (FRs)** and **Detailed Project Reports (DPRs)**, and coordinates river-linking projects.

3. Constitutional & Legal Framework

- **Article 262:** Provides for adjudication of inter-state river water disputes.
- **Seventh Schedule:**
 - **Entry 17 (State List):** Water supply, irrigation, canals, and drainage.
 - **Entry 56 (Union List):** Regulation and development of inter-state rivers in the public interest.
- **Key Clearances:** Governed by the **Wildlife (Protection) Act, 1972**, **Environment (Protection) Act, 1986**, and **Forest Rights Act, 2006** (including Gram Sabha consent for forest diversion).

Q. Consider the following statements regarding Ken-Betwa river linking project:

1. The project aims to transfer the surplus water from Betwa basin to Ken basin.
2. Both the Ken and Betwa rivers are tributaries of the Chambal river.
3. The Baghelkhand region is expected to benefit the most from the Project.

How many of the above statements are correct?

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

Answer: (d) None of the above

Statement 1 is incorrect: It is a river interlinking project designed to transfer surplus water from the Ken River (Madhya Pradesh) to the water-scarce Betwa basin (Uttar Pradesh).

Statement 2 is incorrect: The Ken and Betwa rivers are tributaries of the Yamuna river.

Statement 3 is incorrect: It is expected to bring prosperity to the drought-prone Bundelkhand region.

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4.1. ISRO TESTS SOLVE PLATFORM FOR GAGANYAAN DECELERATION SYSTEMS

Context

- The Indian Space Research Organisation (ISRO) successfully conducted the first ground test of the solid motor for its new **Sub-Orbital Launch Vehicle for Experiments (SOLVE)**. The static test was completed at the Static Test Facility located at the Satish Dhawan Space Centre (SDSC) in Sriharikota.



About the SOLVE Platform

- Core Purpose:** SOLVE is being custom-developed by ISRO as a dedicated experimental test platform to carry out **Integrated Parachute Tests**.
- Objective:** Its main role is to validate the highly critical **deceleration system** of the Gaganyaan mission's Crew Module (CM) under simulated flight conditions.
- Test Profile:**
 - The vehicle will lift the experimental Crew Module to an altitude between **10 km and 17 km**.
 - At this peak altitude, the Crew Module will separate from the vehicle.
 - A sequence of **10 parachutes** will then deploy sequentially to reduce the module's terminal velocity before it safely splashes down in the sea.

Key Technical Modifications

Modification Parameter	Engineering Detail
Propellant Type	Development of a slow burn-rate propellant to carefully control the simulated ascent profile.
Nozzle Design	Use of a straight nozzle configuration rather than conventional canted or gimbaled nozzles.
Steering/Control	Implementation of a Secondary Injection Thrust Vector Control (SITVC) system to handle steering changes during flight.

Other Precursor Tests & Human-Centric Developments

To prepare for India's premier human spaceflight mission, ISRO has run several adjacent validation tracks:

- IADT-02:** The second **Integrated Air Drop Test** was successfully carried out to assess the parachute deployment behavior from aircraft altitudes.
- Mission MITRA:** Standing for *Mapping of Interoperable Traits and Response Assessment*, this was a behavioral and physiological study conducted in Leh. The four selected Indian astronauts, alongside specialized medical and engineering teams, underwent a week-long trial to gauge crew operational dynamics under challenging environmental stress.

About Gaganyaan Mission

Objective

- Demonstrate India's capability to send **Indian astronauts** into **Low Earth Orbit (LEO)** and bring them back safely.

Key Features

- Mission duration: **Up to 3 days**
- Orbit: **Around 400 km Low Earth Orbit**
- Launch Vehicle: **Human-rated LVM3 (HLVM3)**
- Landing: **Splashdown in the Bay of Bengal/Arabian Sea**

Q. Consider the following statements regarding the SOLVE platform:

1. SOLVE is a dedicated experimental sub-orbital test platform developed by ISRO.
2. It is primarily designed to test the deceleration system of the Gaganyaan Crew Module.
3. It is intended to place satellites into Low Earth Orbit.

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

The correct answer is (b) 1 and 2 only.

Explanation:

- **Statement 1 is correct:** As shown in the article snippet from **image_b52720.png**, SOLVE stands for **Sub-Orbital Launch Vehicle for Experiments**, which is a dedicated experimental platform developed by ISRO.
- **Statement 2 is correct:** Its primary purpose is to carry out Integrated Parachute Tests for the validation of the **deceleration system** of Gaganyaan's crew module under various test conditions.
- **Statement 3 is incorrect:** It is a **sub-orbital** platform designed to carry the crew module to an altitude of 10 km to 17 km for parachute deployment tests, after which the module separates and splashes down in the sea. It is **not** intended to place satellites into Low Earth Orbit (LEO).

4.2. WORLD'S FIRST OPTOSAR SATELLITE

Context

- Bengaluru-based private space company **GalaxEye** has temporarily lost communication with **Mission Drishti**, the world's first **OptoSAR (Optical + Synthetic Aperture Radar)** Earth observation satellite, after it encountered a **geomagnetic storm** during its **Launch and Early Orbit Phase (LEOP)**.



What is Mission Drishti?

- **Mission Drishti** is the **world's first OptoSAR satellite**, developed by **GalaxEye Space Solutions**, a Bengaluru-based space-tech startup.
- It is also **India's largest privately developed Earth Observation (EO) satellite**.
- The satellite integrates:
 - **Optical imaging sensors**
 - **Synthetic Aperture Radar (SAR) sensors**
- Both sensors operate as a **single integrated payload**, allowing continuous high-resolution Earth observation.
- **Launch Details:** The satellite was launched in May 2026 aboard a **Falcon 9 rocket** by SpaceX from Vandenberg, California

Understanding OptoSAR Technology

Traditional Earth observation relies on separate imaging systems, which often creates a trade-off between visual intuition and all-weather dependability. OptoSAR solves this by co-locating two advanced technologies (Optical Imaging and Synthetic Aperture Radar)

- **Electro-Optical (EO) / Multispectral Imaging (MSI) Sensors:** Capture high-resolution images in **visible and multiple infrared wavelengths**, but **cannot** effectively operate through clouds, heavy rain, fog, or darkness.
- **Synthetic Aperture Radar (SAR) Sensors:** Uses **microwave radar signals** instead of sunlight, offering **all-weather, day-and-night imaging** that can pierce through heavy cloud cover, smoke, or fog.
 - Unlike optical sensors, SAR cannot capture natural colors or detailed visual textures.
- **The Advantage:** By housing both systems on a single platform, the satellite produces higher image accuracy, better terrain analysis, continuous monitoring regardless of weather, improved disaster response capabilities.

What is Launch and Early Orbit Phase (LEOP)

- **Definition:** LEOP is one of the most critical phases of a space mission, spanning from the moment the spacecraft separates from the launch vehicle until it is safely stabilized in its final intended operational orbit.
- **Operations:** During this phase, engineers perform critical operations like solar panel deployment, attitude control (orientation adjustments), and initial subsystem testing.

Why is LEOP Important?

- It is the **highest-risk phase** of a satellite mission.
- Any failure during LEOP can result in **partial or complete mission loss**.
- Successful completion marks the transition from launch to **normal operational service**.

What is a Geomagnetic Storm?

1. **Definition:** A **geomagnetic storm** is a temporary disturbance in Earth's magnetosphere caused by the interaction of charged particles from the Sun with Earth's magnetic field.
2. **Cause:** It is primarily triggered by **Coronal Mass Ejections (CMEs)** or high-speed **solar wind** emitted during periods of intense solar activity, such as solar flares.
3. **Effects:** Geomagnetic storms can disrupt **satellite operations, GPS navigation, radio communications, and power transmission systems**, and may increase radiation exposure for astronauts and high-altitude flights.
4. **Visible Phenomenon:** Strong geomagnetic storms produce spectacular **auroras (Northern and Southern Lights)**, which can sometimes be seen at lower latitudes than usual.
5. Geomagnetic storms are measured using **the Kp Index**, which ranges from 0 (quiet) to 9 (extreme storm).

Q. With reference to Mission Drishti, recently seen in the news, consider the following statements:

1. **Mission Drishti** is the world's first **OptoSAR** Earth observation satellite that integrates optical imaging and Synthetic Aperture Radar (SAR) into a single payload.
2. **Synthetic Aperture Radar (SAR)** relies on sunlight for imaging and cannot operate during cloudy conditions or at night.

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) 1 only

Explanation:

- **Statement 1 is Correct.** Mission Drishti is the world's first **OptoSAR** satellite, combining **optical imaging** and **SAR** sensors on a single platform for continuous, high-resolution Earth observation.
- **Statement 2 is Incorrect.** SAR uses **microwave radar signals**, not sunlight. It can operate **day and night** and penetrate **clouds, fog, smoke, and rain**, making it suitable for all-weather imaging.

4.3. E-RICKSHAW BATTERY 'HACKS' AND BLUETOOTH BMS VULNERABILITIES

Context

- A recent investigation has highlighted **cybersecurity vulnerabilities in imported e-rickshaw battery systems**, particularly in **Battery Management Systems (BMS)** equipped with **Bluetooth connectivity**.
- Security researchers found that these vulnerabilities could allow unauthorized access to



battery diagnostics and control functions, raising concerns about the **cybersecurity of India's rapidly expanding Electric Vehicle (EV) ecosystem**.

What is a Battery Management System (BMS)?

A **Battery Management System (BMS)** is an **electronic control system** that monitors, protects, and optimizes the performance of rechargeable batteries, especially in **Electric Vehicles (EVs)**.

Functions of BMS

- Monitors battery voltage, current, and temperature.
- Prevents **overcharging and deep discharge**.
- Balances battery cells to improve efficiency.
- Protects against overheating and short circuits.
- Estimates battery health and remaining charge (State of Charge).

Why are E-rickshaw Batteries Vulnerable?

- Many imported batteries use **Bluetooth-enabled BMS** for diagnostics.
- Some systems have **weak authentication** and poor encryption.
- Users often rely on **third-party mobile applications** for monitoring batteries.
- Imported batteries may not undergo **adequate cybersecurity testing**.
- Lack of standardized cybersecurity protocols increases the risk of exploitation.

Potential Cybersecurity Risks

- Unauthorized access to battery data.
- Manipulation of battery charging or discharging parameters.
- Battery overheating or damage due to malicious control.
- Theft of user or device information.
- Disruption of vehicle operation and public safety concerns.
- Experts emphasize that the vulnerabilities arise primarily from poorly secured hardware and software design, **not from the mobile applications alone**.

Major Government Initiatives for Electric Vehicle (EV) Promotion

1. PM E-DRIVE Scheme (2024–2026)

- Launched with an outlay of **₹10,900 crore** to accelerate EV adoption.
- Provides incentives for **electric two-wheelers, three-wheelers, e-buses, e-ambulances, and e-trucks**.
- Also supports the expansion of **public EV charging infrastructure** across India.

2. PM e-Bus Sewa–Payment Security Mechanism (PSM) Scheme

- Aims to facilitate the deployment of **over 38,000 electric buses** in urban transport.
- Provides a **payment security mechanism** to encourage private investment and ensure timely payments to bus operators.

- Promotes clean, efficient, and sustainable public transport.

3. **Production Linked Incentive (PLI) Scheme for Advanced Chemistry Cell (ACC) Batteries**

- Outlay of **₹18,100 crore** to promote domestic manufacturing of advanced battery cells.
- Reduces dependence on battery imports and strengthens the EV supply chain.

Q. With reference to the Battery Management System (BMS) used in Electric Vehicles (EVs), consider the following statements:

1. It monitors battery voltage, current, and temperature.
2. It helps balance individual battery cells to improve efficiency.
3. It is primarily responsible for controlling the vehicle's braking system.

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

The correct answer is A. 1 and 2 only.

Explanation:

- **Statement 1 is correct:** A Battery Management System (BMS) continuously monitors the critical operating parameters of a rechargeable battery pack. This includes tracking individual cell and pack voltages (protecting against overvoltage and undervoltage conditions), monitoring current flow, and regulating temperature to ensure the battery operates within a safe environment.
- **Statement 2 is correct:** To maximize the lifespan, capacity, and overall efficiency of a multi-cell lithium-ion battery pack, a BMS performs cell balancing. This process ensures that all individual cells are charged and discharged uniformly, preventing any single cell from becoming a bottleneck or safety hazard.
- **Statement 3 is incorrect:** The BMS is dedicated exclusively to managing the electronic parameters and health of the battery pack. Controlling the vehicle's mechanical or regenerative braking systems is the responsibility of other dedicated electronic control units (ECUs), such as the Electronic Braking System (EBS) or the central vehicle control unit, not the BMS.

4.4. INS MAHENDRAGIRI AND INDIA'S NAVAL STEALTH LEAP

Context

- The Indian Navy is set to commission its sixth indigenous **Project 17A** stealth frigate, **INS Mahendragiri (F38)**, at Visakhapatnam on July 11. Designed to enhance advanced multi-role operational capabilities across the Indo-Pacific, this advanced frigate marks a major milestone in India's indigenous warship-building program and the *Atmanirbhar Bharat* initiative.



What is INS Mahendragiri (F38)?

- **Class :** It is the sixth advanced stealth frigate of the **Nilgiri Class** under Project 17A.
- **About frigate :** A high-speed, maneuverable warship that is smaller than a destroyer but larger than a corvette. It operates as a multi-role combatant designed for anti-air, anti-surface, and anti-submarine warfare while escorting larger fleets.
- **Design Architecture:** The ship was designed entirely by the Indian Navy's in-house **Warship Design Bureau (WDB)**.
- **Shipbuilding Partner:** It was built by the premier defense public sector undertaking, **Mazagon Dock Shipbuilders Limited (MDSL)**, in Mumbai.
- **Geographical Naming:** It is named after a prominent mountain peak in the Eastern Ghats located in Odisha.

What are its Key Features and Core Technologies?

- **Stealth & Automation:** The frigate is structurally engineered with advanced stealth features, a significantly **reduced radar signature**, and a very high degree of operational automation.
- **Propulsion Configuration:** It is equipped with a **Combined Diesel or Gas (CODOG)** propulsion plant configuration. This system comprises a diesel engine and a gas turbine driving a Controllable Pitch Propeller (CPP) on each shaft.
- **Platform Management:** The entire platform architecture is managed by a state-of-the-art **Integrated Platform Management System (IPMS)**.
- **Versatile Operational Spectrum:** It is a multi-mission platform capable of simultaneously undertaking anti-air, anti-surface, and anti-submarine operations. It is equally suited for power projection, Humanitarian Assistance and Disaster Relief (HADR), and Search and Rescue (SAR) missions.

What is Project 17A?

- **The Objective:** Project 17A frigates are a follow-on class of the older Project 17 (Shivalik Class) frigates, designed with better stealth features, advanced weaponry, and high-tech sensors.
- **The Fleet Lineup:** A total of seven ships are being constructed under this project. The five precursors already delivered to the Indian Navy include:
 1. **INS Nilgiri**
 2. **INS Himgiri**
 3. **INS Udaygiri**
 4. **INS Taragiri**
 5. **INS Vindhyagiri**
- **Potent Weaponry & Sensors:** P17A vessels are heavily integrated with cutting-edge defense suites, including:
 - **MF-STAR:** Active phased array radar for tracking multi-domain threats.
 - **BrahMos:** Supersonic cruise missiles for potent anti-surface warfare.

- **Barak-8:** Long-range surface-to-air missiles (LRSAM) for comprehensive anti-air defense.

Q. With respect to the newly commissioned stealth frigate 'INS Mahendragiri' and Project 17A, consider the following statements:

- INS Mahendragiri is the final seventh ship of the Nilgiri Class designed independently by the Warship Design Bureau.
- These frigates are configured with Combined Diesel or Gas (CODOG) propulsion plants managed by an Integrated Platform Management System.
- The primary anti-surface weapon suite integrated onto Project 17A platforms is the BrahMos supersonic cruise missile.

How many of the statements given above are correct?

- Only one
- Only two
- All three
- None

Answer: B

Explanation:

Statement I is incorrect: INS Mahendragiri is the **sixth** ship of the Nilgiri Class under Project 17A, not the seventh and final ship. However, it is correct that it was designed by the Warship Design Bureau.

Statement II is correct: Project 17A stealth frigates utilize a **Combined Diesel or Gas (CODOG)** propulsion plant configuration that drives a Controllable Pitch Propeller on each shaft, controlled via an Integrated Platform Management System (IPMS).

Statement III is correct: The potent weapon and sensor suite of P17A ships explicitly integrates the **BrahMos supersonic cruise missile** for anti-surface warfare alongside Barak-8 missiles for anti-air operations.

4.5. DRDO SUCCESSFULLY FLIGHT-TESTS PINAKA LONG RANGE GUIDED ROCKET

Context

- Recently, the **Defence Research and Development Organisation (DRDO)** successfully conducted a flight test of the **Pinaka Long Range Guided Rocket (LRGR)** from the **Integrated Test Range (ITR), Chandipur, Odisha**.

What is the Pinaka Rocket System?

- Pinaka** is an **indigenously developed Multi-Barrel Rocket Launcher (MBRL)** system.
- Developed by **DRDO** with production support from Indian defence industries.
- Designed to provide **rapid, high-volume artillery fire** against enemy positions.
- Named after "**Pinaka**", the divine bow of **Lord Shiva**.



- Replaces older Soviet-origin **Grad rocket systems** in the Indian Army.

What is the Pinaka Long Range Guided Rocket (LRGR)?

- The **Long Range Guided Rocket (LRGR)** is the latest precision-guided member of the Pinaka family.
- **Features**
 - **Guided artillery rocket** with improved accuracy.
 - Equipped with an advanced **navigation and guidance system**.
 - Capable of **precision strikes** against strategic targets.
 - Can be launched from the **existing Pinaka launcher** without major modifications.
 - Currently tested minimum operational range: **60 km**.
 - Future upgraded version is expected to have a range of **up to 120 km**

Pinaka Variants

Variant	Approximate Range
Pinaka Mk-I	37–40 km
Pinaka Enhanced Range (ER)	~45 km
Guided Pinaka	~75 km
Pinaka LRGR	60 km (minimum tested); future versions up to 120 km

DRDO at a Glance:

- **Full Form:** Defence Research and Development Organisation (DRDO)
- **Established:** 1 January 1958
- **Ministry:** Ministry of Defence
- **Headquarters:** New Delhi
- **Role:** India's premier defence R&D agency, responsible for developing indigenous defence technologies, missiles, weapons systems, combat vehicles, aircraft, naval systems, and electronic warfare technologies.

Q. With reference to the Pinaka Long Range Guided Rocket (LRGR), consider the following statements:

1. The Pinaka Long Range Guided Rocket (LRGR) is a surface-to-surface ballistic missile developed by DRDO.
2. It can be launched from the existing in-service Pinaka launcher without major modifications.
3. The recent flight test of the Pinaka LRGR was conducted at the Integrated Test Range (ITR), Chandipur, Odisha.

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) 2 and 3 only

Explanation:

- **Statement 1 is Incorrect:** The Pinaka LRGR is a precision-guided artillery rocket, not a surface-to-surface ballistic missile.
- **Statement 2 is Correct:** It can be fired from the existing in-service Pinaka launcher, demonstrating compatibility with current launcher platforms.
- **Statement 3 is Correct:** The flight test was conducted at the Integrated Test Range (ITR), Chandipur, Odisha.

4.6. NAVY ORDERS PROBE INTO CRASH OF DRISHTI-10 UAV NEAR PORBANDAR

Context

- Recently, the **Indian Navy** ordered a **Board of Inquiry (BoI)** after a **Drishti-10 Unmanned Aerial Vehicle (UAV)** crashed near **Dharampur village in Porbandar district, Gujarat**, during a routine training sortie.
- This is the **second reported crash** involving the **Hermes-900/Drishti-10 platform** in recent months, raising concerns regarding its reliability during pre-induction trials.



What is the Drishti-10 UAV?

- **Drishti-10** is an **Indigenous Medium Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV)**.
- It is manufactured in India by **Adani Defence & Aerospace** under a partnership with **Israel's Elbit Systems**.
- The Indian Navy procured **two Drishti-10 UAVs** under emergency procurement in 2023.
- Approximate cost: **₹140 crore per aircraft**.

Key Features

- Category: **MALE UAV**
- Capable of:
 - Intelligence, Surveillance and Reconnaissance (ISR)
 - Maritime surveillance.
 - Border monitoring.
 - Target tracking.
 - Disaster monitoring.
- Operates beyond visual line of sight.

- Equipped with electro-optical and infrared sensors for day-and-night surveillance.
- Can remain airborne for over **30 hours** (platform capability).
- Suitable for surveillance over the Indian Ocean Region (IOR).

What is a MALE UAV?

MALE (Medium Altitude Long Endurance) UAVs are unmanned aircraft designed to operate for long durations at medium altitudes.

Characteristics

- Altitude: Approximately **10,000–30,000 feet**
- Endurance: More than **24 hours**
- They are primarily utilized for continuous intelligence, surveillance, and reconnaissance (ISR) missions over large geographic areas, allowing militaries to maintain persistent situational awareness.

Examples

- Drishti-10 (India)
- Hermes-900 (Israel)
- MQ-9 Reaper (USA)

Major Indigenous UAVs

UAV	Developed by	Purpose
Drishti-10	Adani Defence & Elbit Systems	Maritime Surveillance
TAPAS BH-201	DRDO	MALE Surveillance UAV
Rustom-I	DRDO	Surveillance
Nishant	DRDO	Battlefield reconnaissance
Archer-NG	HAL	Tactical surveillance

Q. With reference to the Drishti-10 Unmanned Aerial Vehicle (UAV), recently seen in the news, consider the following statements:

1. Drishti-10 is a **Medium Altitude Long Endurance (MALE)** UAV.
2. It is manufactured by **Adani Defence & Aerospace** in collaboration with **USA's Elbit Systems**.
3. It is primarily designed for **maritime surveillance and intelligence gathering**.
4. It is an armed **Unmanned Combat Aerial Vehicle (UCAV)** capable of carrying missiles.

Which of the statements given above are correct?

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

Answer: (a) 1 and 3 only

Explanation

- **Statement 1 is Correct:** Drishti-10 belongs to the **MALE** category of UAVs.
- **Statement 2 is incorrect:** It is manufactured by **Adani Defence & Aerospace** under partnership with **Israel's Elbit Systems**.
- **Statement 3 is Correct:** It is intended mainly for **ISR and maritime surveillance** missions.
- **Statement 4 is Incorrect:** Drishti-10 is primarily a **surveillance UAV**, not an armed UCAV.

4.7. INDIAN NAVY TO INDUCT INDIGENOUS STEALTH FRIGATE MAHENDRAGIRI

Context

- The Indian Navy is set to induct **Mahendragiri (F38)**, the sixth Project 17A indigenous stealth frigate, into its Eastern Fleet at Visakhapatnam on 11 July 2026.

About Mahendragiri

- **Mahendragiri (F38)** is the **sixth Project 17A indigenous stealth frigate** of the Indian Navy.
- Named after the majestic **Mahendragiri mountain range** in the Eastern Ghats, the ship symbolises strength, resilience, and steadfast resolve.
- The ship has been designed in-house by the Indian Navy's **Warship Design Bureau (WDB)**.
- It has been built by **Mazagon Dock Shipbuilders Limited (MDL), Mumbai**.
- The frigate represents the latest evolution of India's frontline stealth warships.
- It is equipped with an advanced suite of indigenous and state-of-the-art weapons, sensors, and electronic warfare systems.
- The ship is fully prepared to join the Fleet as a Mission Primed combat platform.
- Guided by its motto, **"Mighty–Majestic–Matchless"**, Mahendragiri is set to serve the nation and further enrich the Indian Navy's illustrious legacy.
- With over **75% indigenous content**, the ship embodies the success of the Government of India's Aatmanirbhar Bharat initiative.



About Project 17A

- **Project 17A** is the follow-on programme of the **Project 17 (Shivalik-class frigates)**.
- The project envisages the construction of advanced stealth frigates equipped with modern weapons and sensors.
- **Under Project 17A:**
 - **Mazagon Dock Shipbuilders Limited (MDL), Mumbai** is constructing four frigates.
 - **Garden Reach Shipbuilders & Engineers (GRSE), Kolkata** is constructing three frigates.

- **Project 17A Frigates**

- INS Nilgiri
- INS Himgiri
- INS Udaygiri
- INS Dunagiri
- INS Taragiri
- **Mahendragiri (F38)**
- INS Vindhyagiri

Q. With reference to Mahendragiri (F38) and Project 17A, consider the following statements:

1. Mahendragiri is the sixth Project 17A indigenous stealth frigate of the Indian Navy.
2. Mahendragiri has been designed by the Warship Design Bureau (WDB) and built by Mazagon Dock Shipbuilders Limited (MDL).
3. The ship has more than 75 percent indigenous content.
4. Mahendragiri is capable only of anti-submarine operations.

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

The correct answer is (a) 1, 2 and 3 only.

Detailed Analysis of the Statements:

- **Statement 1 is correct:** Mahendragiri (F38) is officially commissioned into the Indian Navy as the **sixth Project 17A** indigenous stealth frigate. *(Note: While it was originally planned as the seventh hull in the sequence of construction, it is the sixth ship of the class to be formally commissioned and inducted into active naval fleet operations).*
- **Statement 2 is correct:** The vessel has been designed in-house by the Indian Navy's **Warship Design Bureau (WDB)** and constructed by **Mazagon Dock Shipbuilders Limited (MDL)** in Mumbai.
- **Statement 3 is correct:** Reflecting the government's focus on self-reliance (*Aatmanirbhar Bharat*), the stealth frigate boasts **more than 75% indigenous content**, leveraging equipment from a massive network of domestic industries and MSMEs.
- **Statement 4 is incorrect:** Mahendragiri is **not** restricted exclusively to anti-submarine operations. It is a versatile, multi-mission frontline warship capable of undertaking a full spectrum of tasks across all dimensions of maritime warfare, including **anti-air, anti-surface, and anti-submarine operations**.

HISTORY & CULTURE

5.1. PRESERVING ORAL EPICS: THE CULTURAL SIGNIFICANCE OF PANDAVANI

Context

- Legendary artist Teejan Bai, who globally popularized Chhattisgarh's Pandavani folk tradition by breaking male-dominated cultural stereotypes, recently passed away. She was honored with the Padma Vibhushan for her lifelong contributions to Indian folk arts.



What is the Pandavani Tradition?

- **Definition:** Pandavani is a traditional lyrical folk ballad and performance art primarily belonging to **Chhattisgarh**.
- **Core Theme:** The term literally translates to "the story of the Pandavas," as the performance narrates episodes exclusively from the epic **Mahabharata**.
- **Historical Origin:** The tradition evolved between the 16th and 17th centuries as a regional extension of the **Bhakti movement** to make the Sanskrit epic accessible to rural masses.

What are the Key Performance Elements?

- **Performance Format:** It is a solo narrative act that seamlessly combines *gayan* (singing) and *vadan* (playing an instrument), accompanied by supporting musicians.
- **Linguistic Medium:** The narration is delivered in the highly rhythmic and expressive **Chhattisgarhi dialect**.
- **Role of the Tambura:** The lead performer holds a *tambura* (or *ektara*), which provides the musical rhythm and uniquely acts as a **symbolic prop** (transforming into Bhima's mace or Arjuna's bow during the act).

What are the Principal Styles of Narration?

Pandavani is strictly categorized into two distinct performance styles:

- **Vedamati Style:** The traditional, restrained form. The lead artist **sits on the floor** throughout the performance, delivering the story in a composed, devotional manner without theatrical acting.
- **Kapalik Style:** A highly energetic and theatrical form. The performer **stands, moves around the stage**, and actively enacts the dialogues and characters. This lively style, originally restricted to men, became Teejan Bai's signature identity.

Who are the Prominent Exponents?

- **Teejan Bai:** The most celebrated artist who brought the Kapalik form to international fame, winning the Padma Shri, Padma Bhushan, and Padma Vibhushan.
- **Other Notable Artists:** Ritu Verma, Usha Barle, and Shanti Bai continue to preserve and spread the tradition.

Famous Folk Arts of India

State	Famous Folk Art	Key Characteristics
Maharashtra	Tamasha	A vibrant traditional form of Marathi theatre, heavily incorporating singing and spontaneous dancing.
Gujarat	Bhavai	A traditional theatre form that heavily relies on humour, subtle romance, and social commentary.
Uttar Pradesh	Nautanki	Rich musical compositions intertwined with humorous, mythological, and contemporary storytelling.
West Bengal	Jatra	A famous musical theatre traditionally performed on open-air stages without raised platforms.
Karnataka	Yakshagana	A traditional dance-drama combining intricate costumes, vigorous music, and spontaneous spoken dialogue.
Assam	Ankia Nat	Traditional one-act plays focused primarily on Lord Krishna.
Jammu & Kashmir	Bhand Pather	A traditional satirical theatre combining play, dance, and music, often performed by agricultural communities.
Kerala	Mudiyettu	A ritualistic dance-drama based on the mythological tale of a battle between Goddess Kali and Darika.
Tamil Nadu	Therukoothu	A popular form of street theatre performed predominantly during village temple festivals.
Madhya Pradesh	Maach	A traditional lyrical theatre form focused heavily on melodic dialogues rather than acting.

Q. With respect to the traditional folk arts of India, consider the following statements:

- I. Pandavani is a lyrical folk ballad form native to Chhattisgarh that primarily narrates the epic Mahabharata.
- II. Ankia Nat is a traditional one-act play native to Assam, pioneered historically by Srimanta Sankardev.
- III. Yakshagana is a traditional street theatre performed exclusively during village temple festivals in Uttar Pradesh.

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: Pandavani is a traditional folk-narrative and musical performance art from Chhattisgarh based fundamentally on the epic Mahabharata.

Statement II is correct: Ankia Nat is a traditional, one-act play form native to Assam, pioneered by the medieval saint and social reformer Srimanta Sankardev.

Statement III is incorrect: Yakshagana is a traditional theatre form native to **Karnataka**, combining dance, music, and dialogue. The traditional street theatre prominent in Uttar Pradesh is **Nautanki**.

5.2. INDIA-INDONESIA JOINT RESTORATION PROJECT AT PRAMBANAN TEMPLE

Context

- Recently, the Prime Minister of India and Indonesian President jointly inaugurated an **India-Indonesia conservation and restoration project** at the **Prambanan Temple Complex** in **Yogyakarta, Indonesia**, a UNESCO World Heritage Site.
- The project highlights the strong cultural and civilizational ties between India and Indonesia.



What is the Prambanan Temple?

- Prambanan** is the **largest Hindu temple complex in Indonesia** and one of the finest examples of Hindu temple architecture in Southeast Asia.
- It is located near **Yogyakarta** in **Central Java, Indonesia**.
- The temple was built during the **9th century CE** under the **Sanjaya Dynasty** of the **Mataram Kingdom**.
- It is dedicated to the **Trimurti**:
 - Lord Shiva** (main temple)
 - Lord Vishnu**
 - Lord Brahma**
- The central Shiva temple rises to about **47 metres**, making it the tallest structure within the complex.
- The temple walls depict scenes from the **Ramayana** and **Bhagavata Purana**, highlighting the spread of Indian culture across Southeast Asia.
- In **1991**, Prambanan was designated as a **UNESCO World Heritage Site**.
- Engineering Technique:** Constructed using an indigenous **interlocking stone engineering** method (mortarless dry masonry) that grants flexibility to the spires during seismic activities

India's Role in the Restoration Project

- The conservation project is being undertaken jointly by:
 - Archaeological Survey of India (ASI)**
 - Indonesian conservation authorities.
- The project focuses on:
 - Structural conservation
 - Preservation of stone carvings
 - Restoration using scientific archaeological techniques
 - Capacity building and exchange of conservation expertise

India–Indonesia Cultural Relations

- Spread of **Hinduism and Buddhism** from India to Southeast Asia.
- Influence of Indian epics such as the **Ramayana** and **Mahabharata**.
- Sanskrit inscriptions found across Indonesia.
- The national airline of Indonesia is named **Garuda**, inspired by Hindu mythology.
- Indonesia's national motto, "**Bhinneka Tunggal Ika**" (**Unity in Diversity**), originates from an Old Javanese text influenced by Indian philosophy.

About Archaeological Survey of India (ASI)

- Established in 1861; founder – **Alexander Cunningham**.
- Functions under the **Ministry of Culture**.
- Conducts archaeological excavations, conservation, and research.

Q. With reference to the Prambanan Temple Complex, recently seen in the news, consider the following statements:

1. Prambanan is the largest Hindu temple complex in Indonesia.
2. It is dedicated to the Hindu Trimurti—Brahma, Vishnu and Shiva.
3. It was designated as a UNESCO World Heritage Site in 1991.
4. The temple complex is located in Bali.

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

Answer: (a) 1, 2 and 3 only

Explanation

- **Statement 1 is** Correct. Prambanan is the largest Hindu temple complex in Indonesia.
- **Statement 2 is** Correct. It is dedicated to the Trimurti—Shiva, Vishnu and Brahma.
- **Statement 3 is** Correct. UNESCO inscribed it as a World Heritage Site in **1991**.
- **Statement 4 is** Incorrect. The temple is located in **Yogyakarta (Central Java)**, not Bali.

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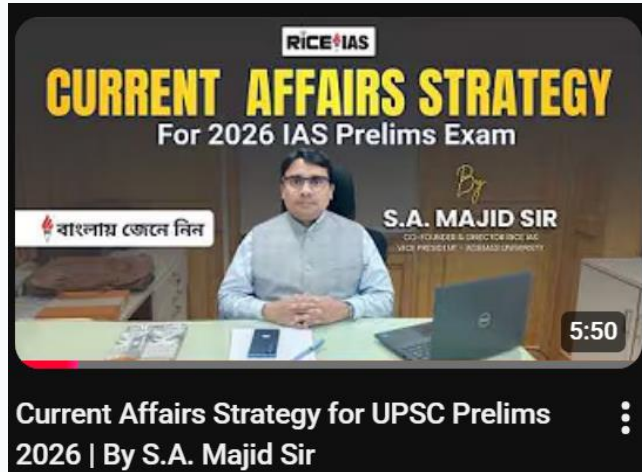
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