

THE DAILY UPSC BRIEF

HIGH-YIELD DAILY SOURCES & ANALYSIS | 6 OCTOBER 2026

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PRELIMS POINTERS — TODAY IN ONE LINE EACH

1. **Kuno National Park (Madhya Pradesh)** — an India-born cheetah gave birth to five cubs, taking India's cheetah population to 60 under Project Cheetah.
2. **Mountain Guardian 2026** — India–UAE joint military exercise that began in Uttarakhand.
3. **Jaspal Rana & Raja Randhir Singh Awards** — new Indian Olympic Association honours; first won by archer Kumkum Mohod and wrestler Sujeet Kalkal.
4. **Sanchar Saathi** — Department of Telecommunications' anti-fraud citizen portal; has crossed 30 crore visits.
5. **Brazil** — Lula and Flávio Bolsonaro go to a 25 October run-off, as no candidate crossed 50% in the first round of the presidential vote.

HOW TO READ THIS BRIEF

☐ Why in News ☐ Target Prelims MCQ ☒ How to Use in UPSC Mains ☐ Mains Practice / Case Study Question

GS PAPER 1: SOCIETY & POPULATION

The Looming Jobs Gap: Can the Demographic Dividend Still Pay Off?

Why in news: A World Bank warning says about 1.2 billion young people in the Global South will reach working age over the next decade, while economies may create only about 400 million viable jobs.

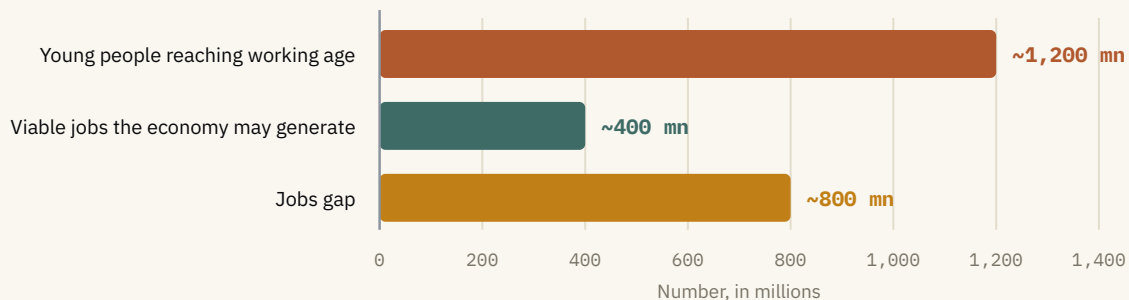
Key Details:

- **Broken ladder:** Light manufacturing once moved low-income workers off farms; automation and robotics now cut its labour intensity, causing premature deindustrialisation.
- **Skills mismatch:** Global demand rewards high-skilled, tech-driven labour, leaving youth without digital infrastructure or vocational training behind.
- **Job engines:** Agri-tech and food processing, the care economy (nurses, elder care), tourism and green manufacturing can absorb labour at scale.
- **India's challenge:** Nearly half the workforce is still in agriculture, which produced only about 16% of GDP in FY24; the median age is under 30.

Data/Facts/Example:

- **Policy levers:** Simpler regulation for small firms, reliable power and logistics, and skills tied to industry demand.
- **Risk:** Prolonged youth joblessness erodes trust, fuels unrest and pushes distress migration towards the Global North (Shashi Tharoor).

Global South: Young Entrants vs Jobs in the Coming Decade



Demographic Dividend

- **Meaning:** The growth boost possible when the working-age share (15–64) rises faster than the dependent young and old.
- **Key ratio:** Dependency ratio = dependants per 100 working-age persons; a falling ratio opens the 'window'.
- **India's window:** Per UNFPA, it opened around 2005–06 and may last till about 2055–56 — one of the longest anywhere.
- **Peak:** The Economic Survey 2018–19 projected India's working-age share to peak around 2041.
- **Not automatic:** The dividend pays only with jobs, skills, health and female labour-force participation; otherwise it becomes a 'demographic disaster'.
- **Not to confuse:** Demographic dividend (age structure) is different from demographic transition (the shift from high to low birth and death rates).

How to use in UPSC Mains: Use in GS1 (population and associated issues) and GS3 (employment, inclusive growth) to argue that job-rich sectors, not GDP growth alone, decide whether youth becomes an asset.

Mains value-add: The East Asian 'miracle' economies used their demographic window to grow fast through labour-intensive manufacturing exports — cite this contrast to show that India must find new labour-absorbing sectors because the old manufacturing ladder is narrowing.

TARGET PRELIMS MCQ

Q. With reference to the demographic dividend, consider the following statements:

1. It refers to the growth potential created when the working-age share of the population rises relative to dependants.
 2. Once the working-age share rises, the dividend accrues automatically, irrespective of employment generation.
 3. According to UNFPA, India's demographic dividend window opened around 2005–06 and is expected to last till about 2055–56.
- Which of the statements given above is/are correct?

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

Answer: (c) 1 and 3 only

Explanation: Statement 1 is correct: this is the standard definition. Statement 2 is incorrect: the dividend is only a potential — without jobs, skills and health it can turn into a burden. Statement 3 is correct: UNFPA puts India's window at roughly 2005–06 to 2055–56.

Related PYQ: UPSC Mains 2023, GS-III: "Most of the unemployment in India is structural in nature. Examine the methodology adopted to compute unemployment in the country and suggest improvements." (15 marks)

■ **[Abbreviations & Terminology]:** GDP: Gross Domestic Product | FY24: financial year 2023–24 | mn: million | UNFPA: United Nations Population Fund

GS PAPER 2: POLITY, GOVERNANCE & IR

SIR: SC Notice on Form 6 Changes and the Question of Lifelong Immunity

Why in news: The SC issued notice to the EC on pleas seeking the CEC's suspension, saying it had not approved changes to Form 6 made during the SIR, and noted the post-retirement immunity given to poll officials.

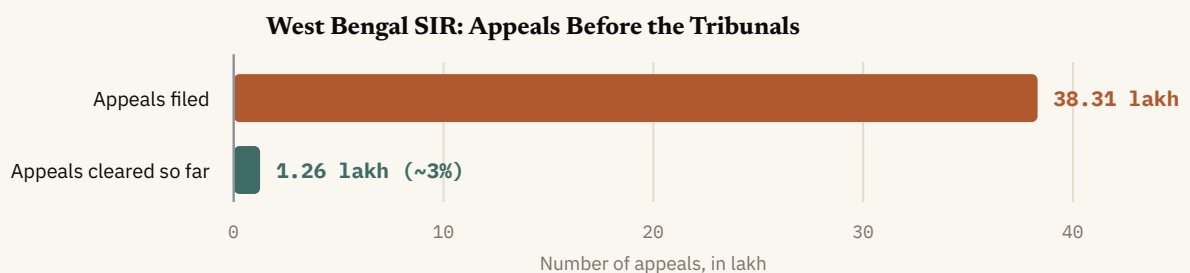
Story so far: The 1 Oct Brief covered the CEC Act's S.16 immunity; the 5 Oct Brief covered Art 326 and the SIR's legal basis. New today: the SC distanced itself from the Form 6 changes, questioned immunity after leaving office, and West Bengal's appeal backlog came to light.

Key Details:

- **Form 6:** Form 6 is the application for first-time inclusion in the roll; the CJI said 'any modifications to Form 6 have not been made by us'.
- **Immunity questioned:** S.16 of the CEC Act, 2023 bars proceedings against a serving or former CEC/EC; Justice Bagchi said protection 'when in office' is normal, but the word 'was' extends it after office.
- **Appeal backlog:** In West Bengal, only 1.26 lakh of 38.31 lakh appeals have been cleared; 16 of 19 Appellate Tribunals are working.
- **Real cost:** About 19,000 deleted voters in Nandigram and Rejinagar miss Tuesday's bypolls; the Calcutta HC said clearing cases at this pace would take 21 years.

Data/Facts/Example:

- **Removal push:** A 14-member group of retired officials sent a 'chargesheet' listing six allegations of 'proved misbehaviour' under Art 324(5).
- **Petitioners' claim:** About 30% of Delhi's and 25% of West Bengal's electorate deleted during the SIR.



Immunities of High Constitutional Functionaries

- **President and Governors:** Art 361: not answerable to any court for official acts; no criminal case can be started or continued during the term.
- **Civil cases:** Civil suits for personal acts against the President or a Governor need two months' prior written notice during the term.
- **Legislators:** Arts 105 and 194: no court proceedings for anything said or any vote given in the House.
- **Judges:** The Judges (Protection) Act, 1985 shields judges from suits for acts in discharge of judicial duty.
- **CEC and ECs:** S.16 of the CEC Act, 2023 bars civil or criminal proceedings for official acts against a serving or former CEC/EC.
- **Not to confuse:** Immunity from lawsuits is different from protection against removal — the CEC can still be removed under Art 324(5).

How to use in UPSC Mains: Use in GS2 (ECI independence vs accountability, electoral reforms) to show that independence needs protection from removal, but immunity should not shield illegal acts — and that delayed appeals defeat the right to vote.

Mains value-add: Justice Krishna Iyer in Mohinder Singh Gill (1978): 'Democracy is government by the people... a continual participative operation, not a cataclysmic, periodic exercise' — cite it to argue that delayed roll appeals deny real participation.

TARGET PRELIMS MCQ

Q. With reference to immunities under the Constitution of India, consider the following statements:

1. No criminal proceedings can be instituted against the President or a Governor in any court during their term of office.
2. Civil proceedings in respect of personal acts can be instituted against the President during the term only after two months' written notice.
3. The Chief Election Commissioner can be removed by the President on the advice of the Union Council of Ministers.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Explanation: Statement 1 is correct: Art 361(2) bars criminal proceedings during the term. Statement 2 is correct: Art 361(4) allows civil suits for personal acts after two months' notice. Statement 3 is incorrect: Art 324(5) lets the CEC be removed only like an SC judge — on proved misbehaviour or incapacity, through Parliament — not on executive advice.

Related PYQ: UPSC Prelims 2018: "Consider the following statements: 1. No criminal proceedings shall be instituted against the Governor of a State in any court during his term of office. 2. The emoluments and allowances of the Governor of a State shall not be diminished during his term of office. Which of the statements given above is/are correct?" — Answer: (c) Both 1 and 2.

■ **[Abbreviations & Terminology]:** SC: Supreme Court | EC/ECs: Election Commission / Election Commissioners | CEC: Chief Election Commissioner | SIR: Special Intensive Revision | CJI: Chief Justice of India | HC: High Court | ECI: Election Commission of India | Art/Arts: Article(s)

India–Switzerland: A Migration and Mobility Partnership on TEPA's First Anniversary

Why in news: During Swiss President Guy Parmelin's state visit, marking a year of the India–EFTA TEPA, the two sides signed a Migration and Mobility Partnership and four other agreements, and agreed to deepen defence and nuclear-energy ties.

Story so far: The 1 Oct Brief covered TEPA's first year in force. New today: a mobility pact on visas and young professionals, and an agreed push on defence production and nuclear energy.

Key Details:

- **Visas:** Multiple-entry visas of up to 5 years, with stays of up to 6 months per visit, and renewable one-year student permits.
- **Young professionals:** An exchange of 300 people a year from each side, which may rise to 500, with time-bound verification of nationality and residency.
- **Safeguards:** The pact also commits both sides to fight irregular migration and human trafficking.
- **Other outcomes:** MoUs on transport (EVs, ropeways, tunnels) and research (DST–SNSF); Switzerland seeks an investment protection agreement.

Data/Facts/Example:

- **Wider pattern:** EAM S. Jaishankar said in June 2026 that India has signed 28 migration and mobility agreements with 26 countries.
- **TEPA:** In force since 1 Oct 2025 between India and Switzerland, Norway, Iceland and Liechtenstein.

Migration and Mobility Partnership Agreements (MMPAs)

- **What they are:** Government-to-government deals that open legal routes for students and workers while committing both sides to curb illegal migration.
- **Early examples:** France (2018), the U.K. (2021), Germany (2022), and Austria and Italy (2023).
- **Typical tools:** Post-study work visas, young professional schemes, recognition of skills and faster return of irregular migrants.
- **Domestic law:** Emigration from India is governed by the Emigration Act, 1983; the e-Migrate portal handles emigration clearance.
- **Why they matter:** Help India's young workforce reach ageing economies, while remittances support the economy.
- **Not to confuse:** Social Security Agreements are separate; they spare workers from paying pension contributions in both countries.

How to use in UPSC Mains: Use in GS2 (India and its neighbours/Europe, diaspora, bilateral agreements) to show how India links trade deals with people-mobility to use its demographic strength.

Mains value-add: TEPA was the first Indian FTA with a binding investment pledge — USD 100 billion and 1 million direct jobs over 15 years from the EFTA states — cite it to show how mobility pacts now accompany investment-linked trade deals.

TARGET PRELIMS MCQ

Q. With reference to the European Free Trade Association (EFTA), consider the following statements:

1. Its members are Switzerland, Norway, Iceland and Liechtenstein.
2. All EFTA members are part of the European Economic Area (EEA).
3. The India–EFTA Trade and Economic Partnership Agreement came into force on 1 October 2025.

Which of the statements given above is/are correct?

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

Answer: (d) 1 and 3 only

Explanation: Statement 1 is correct: EFTA has these four members. Statement 2 is incorrect: Switzerland is not in the EEA; it deals with the EU through bilateral agreements. Statement 3 is correct: TEPA entered into force on 1 October 2025.

■ **[Abbreviations & Terminology]:** EFTA: European Free Trade Association | TEPA: Trade and Economic Partnership Agreement | MoUs: Memoranda of Understanding | EVs: electric vehicles | DST: Department of Science and Technology | SNSF: Swiss National Science Foundation | EAM: External Affairs Minister | FTA: free trade agreement | EEA: European Economic Area | EU: European Union

QUICK FACTS & EXAMPLES — GS PAPER 2

The Centre elevated the Chief Justices of the Gujarat, Delhi and Telangana High Courts to the Supreme Court, taking its working strength to 37 against a sanctioned strength of 38 (Chief Justice included).

How to use: GS2 (judiciary) — use the latest figures (37 working, 38 sanctioned) when discussing vacancies and the appointment process.

The Supreme Court asked Delhi Police to set up 24-hour monitoring cells and step up patrolling near schools and colleges, noting that CCTV cameras without live monitoring do little to prevent sexual offences.

How to use: GS2 (women's safety, police reforms) — an example that technology needs institutional follow-through; pair with the Nirbhaya Fund debate.

The Supreme Court agreed to hear a plea on whether States can redraw ward boundaries during the Census, given Rule 8(iv) of the Census Rules, 1990, which freezes administrative boundaries from a date fixed by the Census Commissioner.

How to use: GS2 (local government, Census 2027) — shows how the Census boundary freeze limits ward delimitation before urban local body polls.

DMK MP P. Wilson defended a Joint Parliamentary Committee's plan to consult the CJI on simultaneous polls, citing the 1948 consultation of judges on the Draft Constitution and Article 143 (the President's power to seek the SC's advisory opinion).

How to use: GS2 (separation of powers, One Nation One Election) — illustrates the line between seeking views and asking courts to pre-judge a Bill.

GS PAPER 3: ECONOMY, ENVIRONMENT, INFRASTRUCTURE & S&T

MMDR Amendment Act, 2026: Why States Are Divided Over Mineral Taxation

Why in news: The MMDR Amendment Act, 2026 lets the Centre curb State taxes on mineral rights and mineral-bearing land and cancels uncollected past levies, setting up a Centre–State fiscal contest.

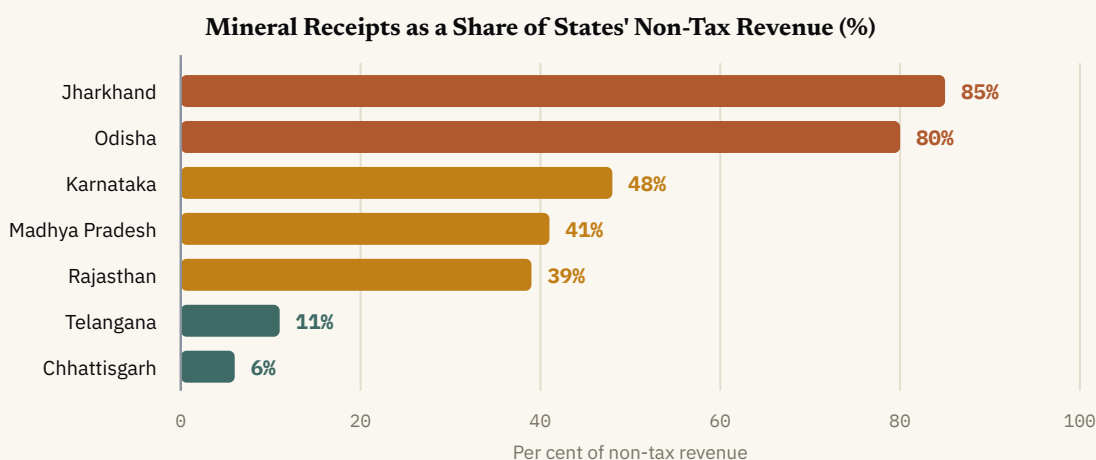
Story so far: The 29 Sept Brief carried the 2024 SC ruling on States' mineral-taxation power as a quick fact. New today: the Act's provisions and the uneven response of mineral-rich States.

Key Details:

- **What the Act does:** Extends Union control to mineral-bearing land identified by the Centre and bars new State levies except on Union-prescribed conditions.
- **Past dues:** Taxes imposed but not collected before the Act are invalidated, though amounts already recovered are not refunded.
- **Clash with the SC:** In 2024 the SC held that States can tax mineral rights (State List Entry 50), subject to Parliament's limits; the Act uses that power to narrow State revenue.
- **Divided States:** Karnataka, Telangana, Himachal Pradesh and Kerala plan to challenge it; BJP-ruled Odisha, despite heavy dependence, has rejected an Assembly session.

Data/Facts/Example:

- **Centre's case:** Uneven, multiple State levies raise the cost of domestic minerals and push industry towards imports.
- **Federal pattern:** Rising dependence on Central transfers and borrowing approval limits States' fiscal autonomy (Safira Hussain and Sanjay Kumar, Lokniti-CSDS).



Who Can Tax Minerals? The Constitutional Scheme

- **Union power:** Union List Entry 54: Parliament may regulate mines and mineral development in the public interest, by law.
- **State power:** State List Entry 23 covers mines and minerals, subject to Entry 54; Entries 49 and 50 let States tax land and mineral rights.
- **Parent law:** The MMDR Act, 1957 is Parliament's Entry 54 law; royalty is fixed by the Centre under it.
- **2024 ruling:** Mineral Area Development Authority v. SAIL (9 judges, 8:1): royalty is not a tax, and States can tax mineral rights.
- **Overruled:** The ruling set aside India Cement (1989), which had treated royalty as a tax.
- **Not to confuse:** Royalty is a payment to the owner for extracting a mineral; a tax is a compulsory levy imposed by a legislature.

How to use in UPSC Mains: Use in GS2 (fiscal federalism, Centre–State relations) and GS3 (mineral resources, ease of doing business) to argue that national market integration must not hollow out State revenue in mineral-dependent States.

Mains value-add: Justice B.V. Nagarathna's lone dissent (2024) warned that letting States tax mineral rights could set off unhealthy competition and hurt the national market — cite it to show the Act echoes a view the SC once rejected.

TARGET PRELIMS MCQ

Q. With reference to the taxation and regulation of minerals in India, consider the following statements:

1. In Mineral Area Development Authority v. Steel Authority of India (2024), the Supreme Court held that royalty is not a tax.
2. Taxes on mineral rights fall under Entry 50 of the State List, subject to limitations imposed by Parliament by law relating to mineral development.
3. Regulation of mines and mineral development is exclusively a State List subject.

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: (b) 1 and 2 only

Explanation: Statement 1 is correct: the nine-judge Bench held by 8:1 that royalty is not a tax. Statement 2 is correct: this is the text of State List Entry 50. Statement 3 is incorrect: State List Entry 23 is expressly subject to Union List Entry 54, under which Parliament enacted the MMDR Act, 1957.

■ **[Abbreviations & Terminology]:** MMDR: Mines and Minerals (Development and Regulation) | SC: Supreme Court | BJP: Bharatiya Janata Party | CSDS: Centre for the Study of Developing Societies | SAIL: Steel Authority of India Ltd.

Coal Stocks Critically Low as Power Demand Hits Record Highs

Why in news: CEA data show 85 of 191 thermal power plants had critically low coal stocks at the start of October 2026, even as the Coal Ministry says supply is not short and demand has surged.

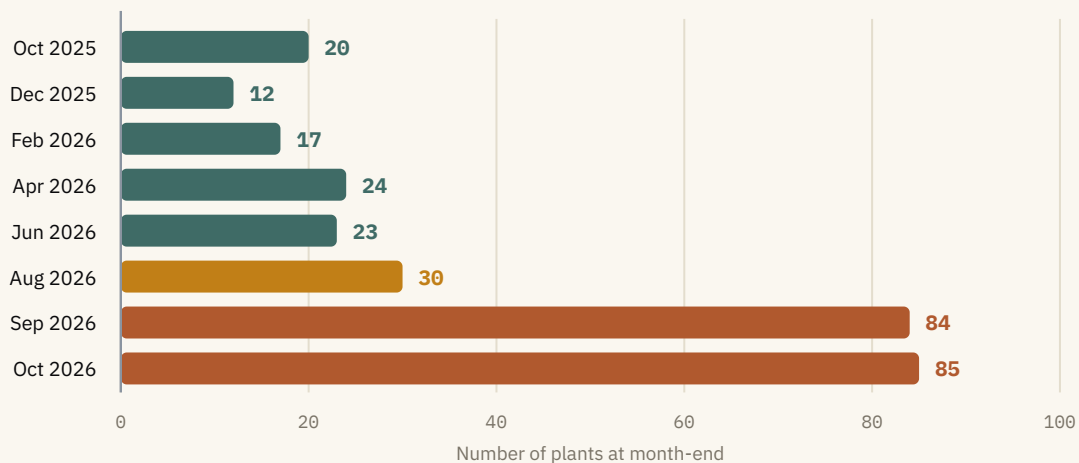
Key Details:

- **Critical stock:** A plant is 'critical' when its coal falls below 25% of the required normative stock; such plants jumped from 30 in August to 84 in September.
- **Demand side:** Power demand rose about 10% in 2026, the sharpest in a decade; all-time peak demand hit 270.8 GW on 21 May 2026.
- **Weather link:** A strong El Niño, India's hottest summer on record and weak monsoons cut hydro output and raised cooling load.
- **Supply side:** CIL's H1 FY27 offtake rose 7.6% to 384.2 MT, with 302.8 MT to the power sector; coal power output rose 9.9% to 640.05 BU.

Data/Facts/Example:

- **Coal's weight:** Coal was the source of about 79% of India's energy generation in 2024–25 (Energy Statistics India 2026).
- **Shortfalls:** Peak power shortages in September 2026 were the highest since August 2023 (Reuters).

Thermal Plants with Critically Low Coal Stock (of ~191 plants)



The Central Electricity Authority (CEA)

- **Status:** A statutory body, now constituted under S.70 of the Electricity Act, 2003 (first set up in 1951).
- **Ministry:** Works under the Ministry of Power as its technical adviser.
- **Key roles:** Prepares the National Electricity Plan, sets technical standards and publishes generation and fuel-stock data.
- **Coal stock norms:** Sets how many days of coal each plant must hold, based on its distance from the mine; below 25% of that is 'critical'.
- **Coal supply:** CIL, a Maharatna PSU under the Ministry of Coal, produces most of India's coal.
- **Not to confuse:** The CEA plans and advises; tariffs are set by the CERC and State regulators (SERCs).

How to use in UPSC Mains: Use in GS3 (energy security, infrastructure and the climate–development trade-off) — rising demand, El Niño years and heavy coal dependence all point to the need for storage, renewables and smarter coal logistics.

Mains value-add: The Glasgow Climate Pact (COP26, 2021) adopted 'phase-down', not 'phase-out', of unabated coal power after India's intervention — cite it to explain why India defends coal for energy security while scaling up renewables.

TARGET PRELIMS MCQ

Q. With reference to coal and electricity in India, consider the following statements:

1. The Central Electricity Authority is a statutory body under the Electricity Act, 2003.
2. The Glasgow Climate Pact (COP26) called for the 'phase-out' of unabated coal power.
3. A thermal power plant's coal stock is treated as critical when it falls below 25% of the normative stock.

Which of the statements given above is/are correct?

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

Answer: (c) 1 and 3 only

Explanation: Statement 1 is correct: S.70 of the Electricity Act, 2003 constitutes the CEA. Statement 2 is incorrect: the final text says 'phase-down', a change pressed by India. Statement 3 is correct: this is the CEA's threshold for a critical stock.

■ **[Abbreviations & Terminology]:** CEA: Central Electricity Authority | GW: gigawatt | CIL: Coal India Ltd. | H1 FY27: April–September 2026 | MT: million tonnes | BU: billion units | PSU: public sector undertaking | CERC: Central Electricity Regulatory Commission | SERCs: State Electricity Regulatory Commissions | COP26: 26th Conference of the Parties (UNFCCC)

First International Cargo From Upper Assam Since 1947 Sails Down the Brahmaputra

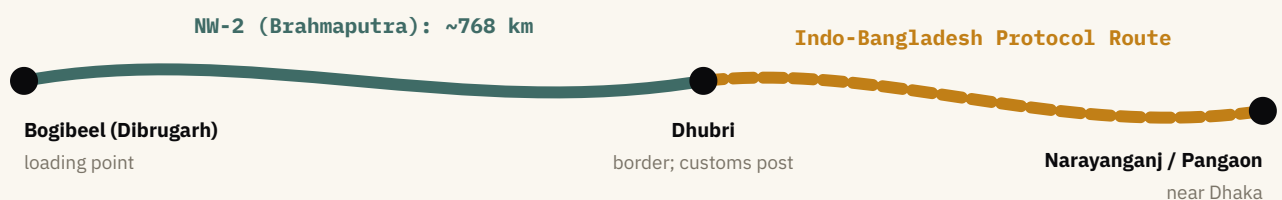
Why in news: A barge carrying 540 tonnes of methanol left Bogibeel in Dibrugarh for Bangladesh — the first international cargo shipment from upper Assam since Independence.

Key Details:

- **The voyage:** The barge sails 768 km down NW-2 to the border and then along the Indo-Bangladesh Protocol Route to Pangaon port near Dhaka — about 1,300 km in all.
- **Enablers:** New customs and immigration posts at Bogibeel and Dhubri made the shipment possible; Bogibeel's terminal opened in 2024.
- **History:** Dibrugarh was a busy river port until Partition cut the route; trade stopped after the 1965 war and the Dibrugarh ghat closed in 1956.
- **Why it matters:** Tests the Brahmaputra as a commercial corridor for the landlocked Northeast; regular methanol shipments are planned.

Data/Facts/Example:

- **Scale-up:** Cargo on national waterways rose from 18 MMT in 2013–14 to 218 MMT in 2025–26 (PIB).
- **Cost logic:** Waterways move bulk cargo with less fuel and fewer trucks; India is linking routes with Bangladesh, Nepal, Bhutan and Myanmar.

Bogibeel to Narayanganj: The Route of the First Cargo

Total ~1,300 km · 540 tonnes of methanol · barge DLB Patkai pushed by tug Kushal Konwar

Schematic diagram, not to scale

National Waterways and the Iwai

- **Who declares:** Only Parliament can declare a National Waterway, by law (Union List Entry 24).
- **2016 law:** The National Waterways Act, 2016 added 106 waterways, taking the total to 111.
- **NW-1 and NW-2:** NW-1: Ganga–Bhagirathi–Hooghly (Haldia–Prayagraj); NW-2: Brahmaputra (Sadiya–Dhubri, 891 km).
- **Regulator:** The Iwai, set up in 1986 under the Iwai Act, 1985, develops and maintains NWs under the Ministry of Ports, Shipping and Waterways.
- **With Bangladesh:** The Protocol on Inland Water Transit and Trade, first signed in 1972, lets vessels of each country use set routes in the other.
- **Not to confuse:** NW-2 (Brahmaputra) is different from NW-16 (Barak river), which also links to the Protocol Route.

How to use in UPSC Mains: Use in GS1 (water transport geography), GS2 (India–Bangladesh, Act East) and GS3 (logistics, Northeast development) to show waterways as a low-cost, low-carbon freight option.

Mains value-add: The Maritime India Vision 2030 targets raising the share of inland waterways in India's modal freight mix to 5% — cite it to show the policy goal behind reviving river trade.

TARGET PRELIMS MCQ

Q. With reference to inland waterways in India, consider the following statements:

1. National Waterway-2 runs along the Brahmaputra from Sadiya to Dhubri.
2. The National Waterways Act, 2016 declared 106 new national waterways, taking the total to 111.
3. National waterways are declared by a notification of the Inland Waterways Authority of India.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Explanation: Statement 1 is correct: NW-2 covers the 891-km Sadiya–Dhubri stretch. Statement 2 is correct: the 2016 Act added 106 to the existing five. Statement 3 is incorrect: only Parliament can declare a National Waterway by law (Union List Entry 24); IWAI develops and regulates them.

Related PYQ: UPSC Mains 2016, GS-I: "Enumerate the problems and prospects of inland water transport in India." (12.5 marks)

■ **[Abbreviations & Terminology]:** NW/NWs: National Waterway(s) | MMT: million metric tonnes | PIB: Press Information Bureau | IWAI: Inland Waterways Authority of India

Great Nicobar Project: SC Refuses to Stay High Court Hearing on Tribal Rights

Why in news: The SC refused the Centre's plea to stay Calcutta HC proceedings on the ₹72,000-crore Great Nicobar project, asking the HC to decide quickly; Justice Bagchi said preservation of culture is a constitutionally protected fundamental right.

Story so far: The 30 Sept Brief carried the Great Nicobar Forest Rights Act challenge as a quick fact. New today: the SC let the HC case proceed and stressed cultural rights of tribes.

Key Details:

- **The challenge:** Former Environment Secretary Meena Gupta argues the project violates the FRA, 2006 and threatens the island's ecology and tribes.
- **Centre's case:** The AG called the ₹72,000-crore project of 'immense' strategic importance and said there is no loss of habitation for the Shompen.
- **Clearances:** The NGT twice disposed of challenges, upholding the environmental clearance with conditions and a high-powered committee; a review was rejected in April 2023.
- **Next:** The Calcutta HC, which in May rejected the Centre's objection on Gupta's standing, will hear the case on 25–26 November.

Data/Facts/Example:

- **Project parts:** A transshipment port at Galathea Bay, a greenfield airport, a township and a power plant, proposed on forest land in Great Nicobar.
- **Island ecology:** Great Nicobar Biosphere Reserve (1989) has been in UNESCO's Man and the Biosphere network since 2013; Galathea Bay is a leatherback turtle nesting site.

Particularly Vulnerable Tribal Groups (PVTGs)

- **Origin:** Identified from 1975 on the Dhebar Commission's (1960–61) advice as the most vulnerable among STs; renamed PVTGs in 2006.
- **Criteria:** Pre-agricultural technology, low literacy, economic backwardness and a stagnant or declining population.
- **Number:** 75 PVTGs across 18 States and the Andaman and Nicobar Islands (UT).
- **A&N groups:** Shompen (Great Nicobar), Great Andamanese, Jarawa, Onge and Sentinelese.
- **Legal shield:** FRA S.3(1)(e) gives PVTGs community rights over their habitat and habitation; PM-JANMAN (2023) funds their development.
- **Not to confuse:** PVTG is an administrative sub-category of STs, not a separate constitutional schedule.

How to use in UPSC Mains: Use in GS3 (environment vs. strategic infrastructure, EIA) and GS2 (tribal rights, role of courts) to argue for consent-based, ecologically careful development in fragile islands.

Mains value-add: Orissa Mining Corporation v. MoEF (Niyamgiri, 2013): the SC let the Gram Sabhas decide on mining affecting the Dongria Kondh's religious and cultural rights — cite it as the precedent for consent under the FRA.

TARGET PRELIMS MCQ

Q. With reference to tribal communities and Great Nicobar, consider the following statements:

1. The Shompen are classified as a Particularly Vulnerable Tribal Group.
2. The Great Nicobar Biosphere Reserve is part of UNESCO's World Network of Biosphere Reserves.
3. PVTGs are notified under a separate Schedule of the Constitution, distinct from Scheduled Tribes.

Which of the statements given above is/are correct?

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

Answer: (d) 1 and 2 only

Explanation: Statement 1 is correct: the Shompen are one of the five PVTGs of the Andaman and Nicobar Islands. Statement 2 is correct: it joined UNESCO's network in 2013. Statement 3 is incorrect: PVTGs are an administrative sub-category of STs identified by the Union government; there is no separate constitutional schedule.

Related PYQ: UPSC Prelims 2019: "Consider the following statements about Particularly Vulnerable Tribal Groups (PVTGs) in India: 1. PVTGs reside in 18 States and one Union Territory. 2. A stagnant or declining population is one of the criteria for determining PVTG status. 3. There are 95 PVTGs officially notified in the country so far. 4. Irular and Konda Reddi tribes are included in the list of PVTGs. Which of the statements given above are correct?" — Answer: (c) 1, 2 and 4.

■ **[Abbreviations & Terminology]:** SC: Supreme Court | HC: High Court | FRA: Forest Rights Act | AG: Attorney-General | NGT: National Green Tribunal | UNESCO: United Nations Educational, Scientific and Cultural Organization | STs: Scheduled Tribes | UT: Union Territory | A&N: Andaman and Nicobar | PM-JANMAN: Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan | EIA: Environmental Impact Assessment | MoEF: Ministry of Environment and Forests

Medicine Nobel 2026: Optogenetics, or Controlling Neurons With Light

Why in news: Karl Deisseroth, Peter Hegemann and Georg Nagel won the 2026 Nobel Prize in Physiology or Medicine for optogenetics, which lets scientists switch chosen nerve cells on with light.

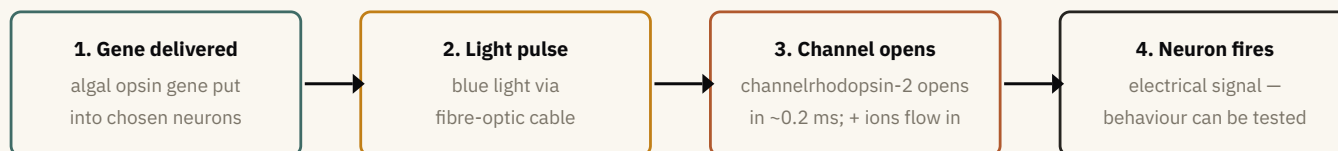
Key Details:

- **The discovery:** In the 1990s Hegemann found that shining light on the green alga *Chlamydomonas* triggered an electric signal within it.
- **The switch:** Hegemann and Nagel identified light-gated channel proteins — channelrhodopsin-1 and -2; channelrhodopsin-2 opens in about 0.2 ms, letting positive ions in.
- **Into the brain:** Deisseroth's Stanford team used it in rat neurons in 2005; by 2007 light through a fibre-optic cable moved a mouse's whiskers.
- **Uses:** Mapping circuits behind pain, attention, sleep and memory; studying schizophrenia, depression, Alzheimer's and Parkinson's, and restoring vision and hearing.

Data/Facts/Example:

- **The laureates:** Deisseroth (Stanford, U.S.), Hegemann (Humboldt University, Berlin) and Nagel (University of Würzburg, Germany).
- **Why it matters:** Optogenetics moved neuroscience beyond observing correlations to testing what specific neurons cause.

How Optogenetics Switches a Neuron On



Source of the switch: *Chlamydomonas*, a green alga whose light-sensitive proteins move it towards light

Schematic, simplified

Optogenetics

- **Meaning:** 'Opto' (light) + 'genetics': inserting genes for light-sensitive proteins into chosen cells so light can control them.
- **Key tool:** Channelrhodopsins (from algae) switch neurons on; other light-driven pumps such as halorhodopsin can switch them off.
- **Precision:** Works within milliseconds and only in the cell types that carry the gene — far more precise than drugs or electrodes.
- **Delivery:** The gene is usually carried into cells by a harmless viral vector.
- **Clinical step:** Partial vision has been restored in a patient with retinitis pigmentosa using optogenetic therapy (2021).
- **Not to confuse:** Optogenetics is different from photodynamic therapy, which uses light-activated drugs to kill cancer cells.

How to use in UPSC Mains: Use in GS3 (developments in biotechnology, applications in health) to show how basic research on a pond alga produced a tool for brain disorders — a case for funding curiosity-driven science.

Mains value-add: Hegemann and Deisseroth shared the 2021 Lasker Basic Medical Research Award with Dieter Oesterhelt for light-sensitive microbial proteins — cite it to show how recognition for basic science often comes decades after the discovery.

TARGET PRELIMS MCQ

Q. With reference to the Nobel Prize and optogenetics, consider the following statements:

1. The Nobel Prize in Physiology or Medicine is decided by the Nobel Assembly at the Karolinska Institutet.
2. The channelrhodopsins used in optogenetics were first discovered in a soil bacterium.
3. Optogenetics allows researchers to switch on specific neurons using light.

Which of the statements given above is/are correct?

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

Answer: (b) 1 and 3 only

Explanation: Statement 1 is correct: the Nobel Assembly at Karolinska Institutet picks the Medicine laureates (the Royal Swedish Academy of Sciences decides Physics and Chemistry). Statement 2 is incorrect: they come from the green alga *Chlamydomonas*. Statement 3 is correct: light-gated channels let chosen neurons be switched on.

■ [Abbreviations & Terminology]: ms: millisecond

India–Japan Joint Crediting Mechanism: Operational Manual Launched

Why in news: India and Japan have launched the Operational Manual for their JCM, setting out the full project cycle for issuing carbon credits under Art 6.2 of the Paris Agreement.

Key Details:

- **What it is:** A bilateral scheme under which Japanese low-carbon technology and finance support projects in India, and the emission cuts are shared as credits.
- **Steps so far:** MoC signed on 7 Aug 2025, Rules of Implementation adopted on 8 June 2026, Operational Manual launched on 30 Sept 2026.

- **Manual covers:** Every stage from the Project Idea Note to the issue and authorisation of JCM credits.
- **Why it matters:** Mobilises climate finance and advanced technology while making India's international carbon trading transparent.

Data/Facts/Example:

- **Japan's model:** Japan launched the JCM in 2013 and runs it with partner countries across Asia, Africa and Latin America.
- **India's market:** India also has a domestic CCTS, which will issue credits for emission-intensity cuts by industry.

How a JCM Project Turns Into Carbon Credits



Milestones: MoC 7 Aug 2025 · Rules of Implementation 8 Jun 2026 · Operational Manual 30 Sep 2026

Schematic, simplified

Article 6 of the Paris Agreement

- **Purpose:** Lets countries cooperate to meet their NDCs through market and non-market approaches.
- **Art 6.2:** Bilateral 'cooperative approaches': emission cuts are transferred as ITMOs, with 'corresponding adjustments' to avoid double counting.
- **Art 6.4:** A UN-supervised crediting mechanism (Paris Agreement Crediting Mechanism) that replaces the Kyoto-era CDM.
- **Art 6.8:** Non-market cooperation such as finance, technology transfer and capacity building.
- **India's set-up:** The NDAIAPA under the MoEFCC approves which activities India will offer for Art 6 trading.
- **Not to confuse:** The CCTS (notified 2023 under the Energy Conservation Act, 2001) is a domestic market; the JCM is international.

How to use in UPSC Mains: Use in GS3 (climate finance, carbon markets, India–Japan ties) to show how Art 6 can bring technology and money for India's 2070 net-zero path without double counting.

Mains value-add: Article 6 rules were finalised at COP29 in Baku (2024) after nearly a decade of talks — cite it to show why bilateral carbon deals like the JCM could only now become fully operational.

TARGET PRELIMS MCQ

Q. With reference to international and Indian carbon markets, consider the following statements:

1. Article 6.2 of the Paris Agreement allows countries to transfer mitigation outcomes through bilateral cooperative approaches.
2. The Joint Crediting Mechanism is a multilateral mechanism supervised by a UNFCCC body.
3. India's Carbon Credit Trading Scheme was notified under the Energy Conservation Act, 2001.

Which of the statements given above is/are correct?

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

Answer: (c) 1 and 3 only

Explanation: Statement 1 is correct: Art 6.2 covers cooperative approaches with transfer of ITMOs. Statement 2 is incorrect: the JCM is a bilateral, Japan-led mechanism — the UN-supervised one is under Art 6.4. Statement 3 is correct: the CCTS was notified in 2023 under the Energy Conservation Act, 2001 (as amended in 2022).

Related PYQ: UPSC Prelims 2025: "Statement I: Article 6 of the Paris Agreement on climate change is frequently discussed in global discussions on sustainable development and climate change. Statement II: Article 6 of the Paris Agreement on climate change sets out the principles of carbon markets. Statement III: Article 6 of the Paris Agreement on climate change intends to promote inter-country non-market strategies to reach their climate targets." — Answer: (a) Both Statement II and Statement III are correct and both of them explain Statement I.

■ **[Abbreviations & Terminology]:** JCM: Joint Crediting Mechanism | Art: Article | MoC: Memorandum of Cooperation | CCTS: Carbon Credit Trading Scheme | NDCs: Nationally Determined Contributions | ITMOs: Internationally Transferred Mitigation Outcomes | CDM: Clean Development Mechanism | NDAIAPA: National Designated Authority for the Implementation of the Paris Agreement | MoEFCC: Ministry of Environment, Forest and Climate Change | COP29: 29th Conference of the Parties | UNFCCC: United Nations Framework Convention on Climate Change

QUICK FACTS & EXAMPLES — GS PAPER 3

The Delhi High Court directed the Municipal Corporation of Delhi and the New Delhi Municipal Council to step up stray-dog sterilisation, train staff with the Lucknow Municipal Corporation and follow the Animal Welfare Board of India's module, with affidavits within four weeks.

How to use: *GS3 (public health, One Health) — pair with the rabies elimination target of 2030 to show that dog-population management is an enforceable civic duty.*

The Commission for Air Quality Management deployed flying squads in 34 districts — 18 in Punjab and 16 in Haryana — from 1 October to 30 November to curb paddy stubble burning.

How to use: *GS3 (air pollution) — an example of field enforcement complementing crop-residue machinery and incentives.*

GS PAPER 4: ETHICS, INTEGRITY & APTITUDE

AI and Disabled Citizens: The Ethics of Building Technology for Everyone

Why in news: As AI enters government services, recruitment and healthcare, evidence shows that AI models perform worse for disabled users — raising questions of fairness, inclusion and accountability in technology design.

Key Details:

- **Built-in bias:** Tested on the AccessEval benchmark, 21 language models became more error-prone and more likely to stereotype once disability came up.
- **Missing data:** The image model CLIP was 15 percentage points less accurate on photos taken by blind users; objects like white canes appeared up to 17 times less often in training data.
- **Real-world test:** Of 1,313 NClude users who completed a task previously closed to them, only 543 managed it with AI alone; the rest needed staff help.
- **GS4 lens:** Illustrates justice and fairness, compassion towards the weaker sections, and the duty to design for the most vulnerable user, not the average one.

Data/Facts/Example:

- **Enforcement gap:** The Chief Commissioner for Persons with Disabilities has penalised 155 establishments, including ministries, for inaccessible websites.
- **Infrastructure risk:** Disabled people relying on powered wheelchairs or oxygen machines are among the first hit when data-centre load strains the grid.

Accessibility as a Right: Rajive Raturi (2024)

- **Judgment:** Rajive Raturi v. Union of India (Nov 2024): the SC held accessibility to be part of the right to life with dignity under Art 21.
- **What it found:** India's accessibility rules were mere guidelines, though the RPwD Act intended binding standards.
- **Direction:** The Centre was told to frame mandatory minimum accessibility standards within three months.
- **Key idea:** 'Universal design': building products and services usable by everyone from the start, not adding fixes later.
- **Related principle:** 'Reasonable accommodation' (Vikash Kumar v. UPSC, 2021): adjustments a person needs to exercise rights equally.
- **Not to confuse:** Accessibility (removing barriers for all) is different from reservation (a share of seats or jobs).

How to use in UPSC Mains: Use in GS4 (ethics in technology, justice and fairness, compassion towards the weaker sections) and GS2 (rights of PwDs) to argue that any AI the government deploys must be tested for disability bias.

Mains value-add: John Rawls's 'veil of ignorance' — design rules without knowing which position you will occupy — cite it to argue that technology should be judged by how it treats its most disadvantaged users.

MAINS PRACTICE QUESTION

Q. Artificial intelligence promises independence to persons with disabilities, but biased data can deepen their exclusion. Examine the ethical responsibilities of governments and technology firms in ensuring that AI-based public services are fair and accessible to all. (150 words)

■ **[Abbreviations & Terminology]:** AI: artificial intelligence | CLIP: Contrastive Language–Image Pre-training | SC: Supreme Court | RPwD: Rights of Persons with Disabilities | UPSC: Union Public Service Commission | PwDs: Persons with Disabilities | Art: Article