

THE DAILY UPSC BRIEF

HIGH-YIELD DAILY SOURCES & ANALYSIS | 8 OCTOBER 2026

TODAY'S COVERAGE

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PRELIMS POINTERS — TODAY IN ONE LINE EACH

- Veerangana Durgavati Tiger Reserve** (Sagar, M.P.) — third cheetah site after Kuno and Gandhi Sagar; two cheetahs released.
- Cervavac** — Serum Institute's quadrivalent HPV vaccine (types 6, 11, 16, 18) gets WHO prequalification.
- Asian Para Games 2026** — Aichi-Nagoya, Japan, 18–24 Oct; flag-bearers Pramod Bhagat and Bhavina Patel.
- Carbfix** — Icelandic technology that turns captured CO₂ into stone by mineralising it in basalt.
- Kayamkulam** (Alappuzha, Kerala) — site of a 2,000 MWh battery energy storage system with NTPC.

HOW TO READ THIS BRIEF

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

GS PAPER 2: POLITY, GOVERNANCE, SOCIAL JUSTICE & IR

Cauvery Allocation: Karnataka Invokes 'Changed Circumstances' and the Indus Waters Treaty

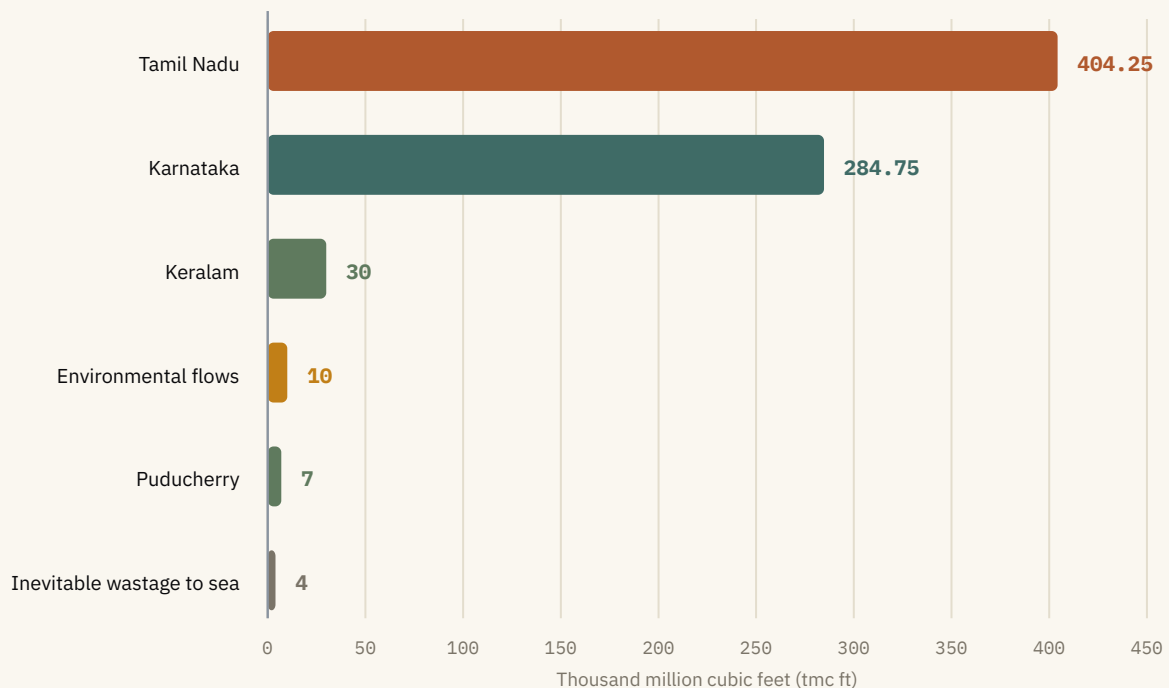
Why in news: Replying to Tamil Nadu in the SC, Karnataka said it may seek to reopen the Cauvery allocation on grounds of 'inequitable allocation' and 'changed circumstances', citing India's stand on the Indus Waters Treaty.

Key Details:

- **Karnataka's argument:** International practice lets States revisit water-sharing when circumstances change fundamentally (*rebus sic stantibus*); allocations should be periodically revisited.
- **Indus parallel:** The Centre has held the 1960 Indus Waters Treaty 'in abeyance' and sought its modification on the ground of changed circumstances.
- **Distress sharing:** In deficit years, States share distress pro rata; Karnataka says there is no scientific formula for this.
- **Trigger:** Karnataka's 2026 monsoon was the second lowest in 70 years — 551 mm against a normal of 852 mm (35% short).

Data/Facts/Example:

- **Total yield:** 740 tmc ft at 50% dependability, measured at the Lower Coleroon Anicut (Tribunal award as modified by the SC in 2018).
- **Tamil Nadu's complaint:** Backlog in releases from Karnataka; TN depends on Cauvery flows for its delta crops.

Cauvery water allocation after the SC's 2018 judgment (tmc ft)**The Cauvery Award & Rebus Sic Stantibus**

- **Tribunal:** The CWDT was set up in 1990 under the ISRWD Act, 1956; its final award came in 2007.
- **SC 2018:** In *State of Karnataka v. State of Tamil Nadu*, the SC raised Karnataka's share by 14.75 tmc ft, citing Bengaluru's drinking-water needs.
- **CWMA:** The CWMA and the CWRC were notified in 2018 to implement the award and monitor releases.
- **Rebus sic stantibus:** A treaty may be ended or suspended if circumstances change fundamentally; codified in Article 62 of the VCLT, 1969.
- **Not to confuse:** India has not signed the VCLT; it treats such rules as customary international law.

How to use in UPSC Mains: Use in GS2 (federalism, inter-State relations) to show why tribunal awards rarely end disputes — rainfall variability and growing demand keep reopening 'final' allocations; argue for distress-sharing formulas and basin-level bodies.

Mains value-add: Article 262 lets Parliament bar the jurisdiction of all courts, including the SC, over inter-State water disputes — yet in 2016 the SC held that appeals against tribunal awards lie before it under Article 136, and decided the Cauvery appeals on merits in 2018; cite this to show courts remain central despite the bar.

TARGET PRELIMS MCQ

Q. With reference to water-sharing law, consider the following statements:

1. The doctrine of rebus sic stantibus is codified in Article 62 of the Vienna Convention on the Law of Treaties, 1969.
2. India is a party to the Vienna Convention on the Law of Treaties, 1969.
3. The Cauvery Water Management Authority was constituted in 2018 to implement the Cauvery tribunal award as modified by the Supreme Court.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 3 only

Explanation: Article 62 of the VCLT deals with a fundamental change of circumstances (Statement 1 true). India has neither signed nor ratified the VCLT, though it accepts many of its rules as customary law (Statement 2 false, the trap). The CWMA was notified in June 2018 after the SC's February 2018 judgment (Statement 3 true).

Related PYQ: UPSC Mains 2013, GS Paper II: "Constitutional mechanisms to resolve the inter-state water disputes have failed to address and solve the problems. Is the failure due to structural or process inadequacy or both? Discuss."

■ **[Abbreviations & Terminology]:** SC: Supreme Court | TN: Tamil Nadu | tmc ft: thousand million cubic feet | CWDT: Cauvery Water Disputes Tribunal | ISRWD: Inter-State River Water Disputes | CWMA: Cauvery Water Management Authority | CWRC: Cauvery Water Regulation Committee | VCLT: Vienna Convention on the Law of Treaties

India's Stakes in the WHO Pandemic Agreement

Why in news: At the UN High-Level Meeting on pandemic preparedness (September 2026), India backed the WHO Pandemic Agreement while stressing national sovereignty and equitable access to vaccines and drugs.

Key Details:

- **Status:** The PA was adopted in 2025 by 124 member-states, including India, with none against and 11 abstaining; it is not yet open for ratification.
- **Missing piece:** Talks continue on the PABS annex, which decides how pathogen samples are shared and how benefits such as vaccines reach poorer countries.
- **Fault lines:** The Global South wants funding and technology transfer; the Global North resists binding transfer targets; the U.S. rejected the Declaration.
- **India's line:** Equitable access to medical countermeasures, respect for sovereignty, and lead the Global South in PABS talks.

Data/Facts/Example:

- **India's assets:** 'Pharmacy of the world' and a top vaccine producer by volume, but dependent on imports for APIs.
- **Platforms:** India launched the Global Initiative on Digital Health during its 2023 G20 presidency.

The WHO Pandemic Agreement & PABS

- **Legal basis:** Negotiated under Article 19 of the WHO Constitution, which lets the WHA adopt binding conventions.
- **Adoption:** Adopted at the 78th WHA in May 2025 — the second health treaty after the Framework Convention on Tobacco Control (2003).
- **Entry into force:** Opens for signature only after the PABS annex is adopted; enters into force after 60 ratifications.
- **PABS idea:** Countries share pathogen samples quickly; manufacturers set aside a share of vaccines and drugs for poorer countries in a pandemic.
- **Sovereignty clause:** WHO gets no power to order lockdowns, vaccine mandates or travel bans on any country.
- **Not to confuse:** The IHR (2005) are a separate binding instrument; their 2024 amendments added a 'pandemic emergency' alert level.

How to use in UPSC Mains: Use in GS2 (international institutions, health) to discuss global health equity, vaccine nationalism during COVID-19 and India's role as a voice of the Global South.

Mains value-add: During COVID-19, India and South Africa proposed (2020) a WTO waiver on TRIPS protections for COVID-19 vaccines and treatments — cite it to show that India has long linked pandemic preparedness to equitable access.

MAINS PRACTICE QUESTION

Q. The WHO Pandemic Agreement seeks to balance national sovereignty with global solidarity. Examine the major fault lines in the negotiations and suggest how India can use its position to make the regime more equitable for the Global South. (250 words)

Related PYQ: UPSC Mains 2020, GS Paper II: "Critically examine the role of WHO in providing global health security during the Covid-19 pandemic."

■ **[Abbreviations & Terminology]:** WHO: World Health Organization | PA: Pandemic Agreement | UN: United Nations | PABS: Pathogen Access and Benefit-Sharing | APIs: Active Pharmaceutical Ingredients | G20: Group of Twenty | WHA: World Health Assembly | IHR: International Health Regulations | WTO: World Trade Organization | TRIPS: Trade-Related Aspects of Intellectual Property Rights

FCRA Registration and Religious Conversion: Madras High Court Ruling

Why in news: The Madras HC (Madurai Bench) held that organisations engaged in religious conversion can be denied FCRA registration, upholding the rejection of a Kodaikanal trust's application.

Key Details:

- **The case:** Kanzeon Public Charitable Trust, founded by a Christian priest, said it ran a Zen meditation centre; the Centre found its work religious.
- **Holding:** Organisations whose work does not affect the nation's secular fabric and social amity may be registered; conversion-oriented bodies may be refused.
- **Law applied:** Section 12 bars only unregistered religious bodies from taking foreign funds; a body with a definite religious programme may apply under Sections 11 and 12.
- **Disclosure:** Rule 9 of the FCRA Rules, 2011 requires applicants to disclose their nature in Form FC-3A; the trust failed to do so honestly.

Data/Facts/Example:

- **Court's view:** 'We are a pluralist nation... not a melting pot but a beautiful salad bowl' — a metaphor the Bench credited to Justice Ruma Pal.
- **Bench:** Justices G.R. Swaminathan and M.D. Sumathi decided the civil appeal.

The FCRA, 2010

- **Purpose:** Regulates the receipt and use of foreign contributions so they do not harm national interest; replaced the FCRA, 1976.
- **Administered by:** The MHA grants registration or prior permission.
- **Who cannot receive:** Election candidates, MPs/MLAs, political parties, judges, government servants and media persons, among others (Section 3).
- **2020 amendment:** Admin expenses capped at 20% (from 50%); no transfer of funds to other organisations; account must be at SBI, New Delhi Main Branch.
- **Validity:** A registration certificate is valid for five years and must then be renewed.
- **Not to confuse:** FCRA regulates donations; FEMA regulates foreign exchange and trade transactions.

How to use in UPSC Mains: Use in GS2 (role of NGOs, Article 25) to weigh the freedom to propagate religion against the State's power to regulate foreign funding for security and social harmony.

Mains value-add: In Noel Harper v. Union of India (2022), the SC upheld the 2020 FCRA amendments, holding that no one has a fundamental right to receive foreign contributions — cite it to show the wide latitude Parliament has in this field.

TARGET PRELIMS MCQ

Q. With reference to the Foreign Contribution (Regulation) Act, 2010, consider the following statements:

1. The Act is administered by the Ministry of Home Affairs.
2. An organisation having a definite religious programme can never be registered under the Act.
3. After the 2020 amendment, not more than 20% of foreign contribution received can be spent on administrative expenses.

Which of the statements given above is/are correct?

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

Answer: (b) 1 and 3 only

Explanation: The MHA administers the FCRA (Statement 1 true). Section 11 expressly lets organisations with a definite cultural, economic, educational, religious or social programme register — what is barred is unregistered receipt, and conversion activity can be a ground to refuse (Statement 2 false, the trap). The 2020 amendment cut the administrative-expense cap from 50% to 20% (Statement 3 true).

Related PYQ: UPSC Mains 2015, GS Paper II: "Examine critically the recent changes in the rules governing foreign funding of NGOs under the Foreign Contribution (Regulation) Act (FCRA), 1976."

■ **[Abbreviations & Terminology]:** FCRA: Foreign Contribution (Regulation) Act | HC: High Court | SC: Supreme Court | MHA: Ministry of Home Affairs | MPs/MLAs: Members of Parliament/Legislative Assemblies | SBI: State Bank of India | FEMA: Foreign Exchange Management Act | NGOs: Non-Governmental Organisations

Mercy Petitions and Delay: The Rajoana Case Before the Supreme Court

Why in news: The Centre opposed death-row convict Balwant Singh Rajoana's plea to commute his sentence over the delay in deciding his mercy petition, pending with the President since 2012; the SC will hear it on merits on October 28.

Key Details:

- **The case:** Rajoana was sentenced to death for the 1995 assassination of Punjab CM Beant Singh; he has been in custody for over 30 years.
- **His plea:** The long, unexplained delay in deciding his mercy petition makes execution cruel and violates Article 21.
- **Centre's stand:** Considering the 'prevailing situation' in Punjab, it will not be 'conducive' to take a decision now.
- **Bench:** Justices Vikram Nath, Sandeep Mehta and Aparesh Kumar Singh said that since the Centre opposes, they will decide on merits.

Data/Facts/Example:

- **Pendency:** The mercy petition has been pending for about 14 years.

- **Pattern:** Delayed mercy decisions have earlier led the SC to commute death sentences, including in the Rajiv Gandhi assassination case (2014).

President vs Governor: pardoning powers

Point	President (Article 72)	Governor (Article 161)
Death sentence	Can pardon, commute, remit, respite or reprieve	Cannot pardon; may suspend, remit or commute
Court-martial sentences	Yes	No
Offences covered	Against Union laws	Against State laws
Advice	Acts on advice of Union Council of Ministers	Acts on advice of State Council of Ministers

Pardoning Powers: Articles 72 & 161

- **Five forms:** Pardon (wipes out sentence and conviction), commutation, remission, respite and reprieve.
- **Advice:** The President acts on the advice of the Union Council of Ministers (Maru Ram, 1980).
- **Hearing:** The convict has no right to an oral hearing before the President (Kehar Singh, 1989).
- **Judicial review:** Limited: courts can check for mala fides, arbitrariness or irrelevant considerations (Epuru Sudhakar, 2006).
- **No time limit:** The Constitution sets no deadline for deciding mercy petitions.
- **Not to confuse:** Commutation substitutes a lighter form of punishment; remission reduces the period without changing its character.

How to use in UPSC Mains: Use in GS2 (executive powers, Article 21) to discuss how executive delay converts a legal sentence into prolonged mental torture, and why time-bound disposal of mercy petitions is needed.

Mains value-add: In Shatrughan Chauhan v. Union of India (2014), the SC held that undue, unexplained delay in deciding mercy petitions is a valid ground to commute a death sentence — cite it as the controlling precedent on delay.

TARGET PRELIMS MCQ

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

1. The Governor of a State can pardon a death sentence for an offence against a State law.
2. The President's pardoning power extends to sentences passed by a court martial.
3. Undue delay in deciding a mercy petition can be a ground for commuting a death sentence.

Which of the statements given above is/are correct?

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

Answer: (c) 2 and 3 only

Explanation: Only the President can pardon a death sentence; the Governor can suspend, remit or commute it but not pardon it (Statement 1 false, the trap). Article 72(1)(a) covers court-martial sentences, which the Governor cannot touch (Statement 2 true). The SC in Shatrughan Chauhan (2014) accepted undue delay as a ground for commutation (Statement 3 true).

Related PYQ: UPSC Prelims 2025: "Consider the following statements with regard to pardoning power of the President of India: I. The exercise of this power by the President can be subjected to limited judicial review. II. The President can exercise this power without the advice of the Central Government. Which of the statements given above is/are correct?" — Answer: (a) I only.

■ **[Abbreviations & Terminology]:** SC: Supreme Court | CM: Chief Minister

NCSC Pushes Banks to Report the SC Share in Loan and Subsidy Schemes

Why in news: On the NCSC's prompting, the Finance Ministry directed State- and UT-level bankers' committees to report the share of SC beneficiaries in flagship schemes, scheme-wise and bank-wise, by October 9.

Key Details:

- **The gap:** SLBC reviews did not show the percentage of SC beneficiaries, hindering the NCSC's ability to perform its constitutional duties.
- **Schemes covered:** PMMY, Stand-Up India, PMEGP, PM SVANidhi and the Credit Guarantee Fund Trust for Micro and Small Enterprises.
- **The benchmark:** The NCSC checks whether SCs' share in schemes is close to their share in the population — about 16.6% (Census 2011).
- **Process:** The DFS wrote to all SLBCs and UTLBCs on October 5; data must also be shared regularly with the NCSC.

Data/Facts/Example:

- **Stand-Up India:** Each bank branch must lend ₹10 lakh–₹1 crore to at least one SC/ST and one woman borrower for a greenfield enterprise.
- **Why data matters:** Without disaggregated data, inclusion targets in credit cannot be audited.

National Commission for Scheduled Castes (Article 338)

- **Status:** A constitutional body under Article 338; its Chairperson and members are appointed by the President.
- **Split:** The 89th Amendment, 2003 created a separate NCST under Article 338A.
- **Powers:** Has the powers of a civil court while investigating complaints — it can summon people and call for records.
- **Reports:** Reports to the President, who lays them before Parliament with an action-taken memorandum.
- **Consultation:** The Union and every State must consult it on major policy matters affecting SCs (Article 338(9)).
- **Not to confuse:** OBC grievances go to the NCBC (Article 338B, added by the 102nd Amendment, 2018), not the NCSC.

How to use in UPSC Mains: Use in GS2 (welfare of vulnerable sections, financial inclusion) to argue that inclusion in credit must be measured, not assumed — disaggregated, published data is the first step to accountability.

Mains value-add: The Lead Bank Scheme (1969), based on the Gadgil Study Group's report, made one bank responsible for credit planning in each district and is the origin of today's SLBCs — cite it as the institutional basis for targeted financial inclusion.

TARGET PRELIMS MCQ

Q. With reference to the National Commission for Scheduled Castes (NCSC), consider the following statements:

1. It is a constitutional body under Article 338 of the Constitution.
2. It also looks into complaints regarding the rights of Other Backward Classes.
3. A separate National Commission for Scheduled Tribes was created by the 89th Constitutional Amendment, 2003.

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: The NCSC is constituted under Article 338 (Statement 1 true). Since the 102nd Amendment (2018) gave the NCBC constitutional status under Article 338B, the NCSC no longer covers OBCs (Statement 2 false, the trap). The 89th Amendment bifurcated the combined commission and created the NCST under Article 338A (Statement 3 true).

Related PYQ: UPSC Mains 2018, GS Paper II: "Whether National Commission for Scheduled Castes (NCSC) can enforce the implementation of constitutional reservation for the Scheduled Castes in the religious minority institutions? Examine."

■ **[Abbreviations & Terminology]:** NCSC: National Commission for Scheduled Castes | UT: Union Territory | SC: Scheduled Caste | SLBC: State-Level Bankers' Committee | UTLBC: Union Territory-Level Bankers' Committee | PMMY: Pradhan Mantri Mudra Yojana | PMEGP: Prime Minister's Employment Generation Programme | PM SVANidhi: PM Street Vendor's AtmaNirbhar Nidhi | DFS: Department of Financial Services | ST: Scheduled Tribe | NCST: National Commission for Scheduled Tribes | OBC: Other Backward Classes | NCBC: National Commission for Backward Classes

QUICK FACTS & EXAMPLES — GS PAPER 2

ST status is religion-neutral: the Arunachal Christian Forum alleged that SBI's software disables the 'ST' option when an applicant selects Christianity. The Constitution (Scheduled Tribes) Order, 1950 does not link tribal status to religion, unlike the Scheduled Castes Order, 1950, which limits SC status to Hindus, Sikhs and Buddhists.

How to use: *GS2 (vulnerable sections): use to show how design flaws in digital systems can exclude citizens — and the SC/ST religion distinction is a classic Prelims trap.*

Accessibility in aviation: the SC issued notice to the Civil Aviation Ministry, DGCA, AAI, CISF and the Digi Yatra Foundation on a plea that persons with disabilities face barriers, broken equipment and digital exclusion; a 2.21% disability prevalence (Census 2011) implies over 7 million disabled air passengers a year.

How to use: *GS2 (rights of persons with disabilities): example of the gap between the RPwD Act, 2016 and service delivery.*

Property tax is under-used: India's property tax collection is only 0.15–0.2% of GDP, against about 0.6% in middle-income countries. Studies of Chennai, Bengaluru, Pune and Ghaziabad link poor collection to staff shortages, irregular base-rate revisions and delayed municipal elections.

How to use: *GS2 (local self-government, 74th Amendment): cite to argue that fiscal autonomy of cities needs structural reform, not just technology.*

Sri Lanka's anti-graft drive: the CIABOC arrested former First Lady Shiranthi Rajapaksa over alleged misuse of funds at a charity; her son Namal Rajapaksa is also in custody.

How to use: *GS2 (India and its neighbourhood): example of the NPP government's anti-corruption push and political churn in Sri Lanka.*

Child safety and AI companions: California enacted a 2026 law on AI companion chatbots requiring crisis-detection protocols, parental controls and independent safety audits. India's IT Act, 2000, DPDP Act, 2023 and POCSO Act, 2012 do not specifically cover the psychological risks of AI companions.

How to use: *GS2/GS3 (child rights, technology regulation): use to argue for age-appropriate design duties under Article 21 and Article 39(f).*

GS PAPER 3: ECONOMY, ENVIRONMENT, S&T & ENERGY**RBI Raises the Repo Rate to 5.5%, Shifts to 'Calibrated Tightening'**

Why in news: The MPC raised the repo rate by 25 basis points to 5.5% and changed its stance from neutral to calibrated tightening, signalling that rate cuts are off the table.

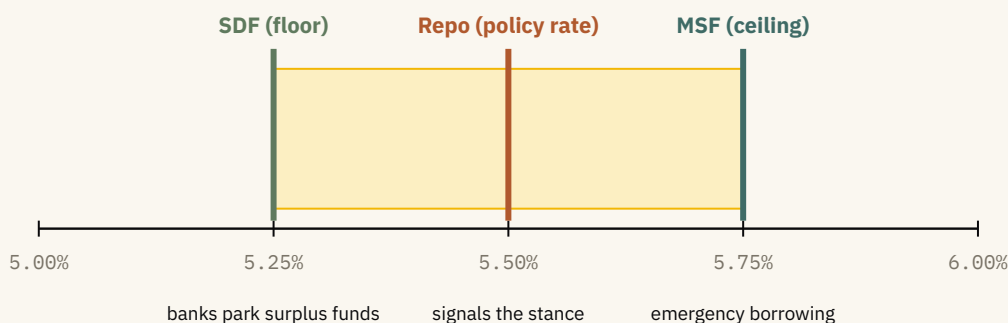
Key Details:

- **Why:** Rising crude prices after the West Asia conflict re-escalated, a deficient monsoon and El Niño are pushing up fuel and food inflation.
- **Inflation path:** Headline CPI inflation is projected to average about 5.8% over the next three quarters, near the 6% upper band in Q3; core inflation is projected at 4.4%.
- **Growth:** GDP growth for 2026-27 was revised up to 7.1% from 6.7%, giving room to tighten.
- **Signal:** Future action 'can only be a rate hike or a pause', said Governor Sanjay Malhotra.

Data/Facts/Example:

- **Rate path:** The repo was cut in phases by 125 bps from 6.5% to 5.25% by December 2025 and held for four meetings before this hike.
- **External pressure:** FPIs have pulled out about \$24.3 billion from Indian markets in 2026, weakening the rupee.

The policy-rate corridor after the October 2026 hike



The overnight call rate is steered to stay inside this 50-basis-point band; a repo hike shifts the whole band up.

Schematic diagram, not to scale.

The MPC & Monetary Policy Stances

- **Legal basis:** Set up in 2016 under Section 45ZB of the RBI Act, 1934, following the Urjit Patel Committee (2014).
- **Composition:** Six members — three from RBI including the Governor, and three external members appointed by the Centre for four years.
- **Voting:** Decisions by majority; each member has one vote and the Governor has a casting vote in a tie.
- **Target:** The Centre sets the inflation target in consultation with RBI every five years; since 2016 it has been 4% CPI with a 2–6% band.
- **Stances:** Accommodative (ready to cut), neutral (either way), calibrated tightening (no cuts; hikes possible).
- **Not to confuse:** Repo is the rate at which RBI lends to banks; reverse repo/SDF is what RBI pays banks for parking funds.

How to use in UPSC Mains: Use in GS3 (monetary policy, inflation) to explain the limits of rate hikes against supply shocks — fuel and food prices need fiscal and supply-side action alongside RBI's move.

Mains value-add: The MPC first used the 'calibrated tightening' stance in October 2018, when it held rates but ruled out cuts — cite it to show the stance is a signalling tool that can move independently of the rate itself.

TARGET PRELIMS MCQ

Q. With reference to monetary policy in India, consider the following statements:

1. The Standing Deposit Facility rate forms the floor of the policy-rate corridor.
2. Decisions of the Monetary Policy Committee must be unanimous, and the RBI Governor has a veto.
3. 'Calibrated tightening' was adopted as a policy stance for the first time in 2026.

Which of the statements given above is/are correct?

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

Answer: (a) 1 only

Explanation: Since April 2022 the SDF (repo minus 25 bps) is the corridor's floor, with the MSF (repo plus 25 bps) as its ceiling (Statement 1 true). MPC decisions are by majority vote, the Governor having only a casting vote in a tie (Statement 2 false). The stance was first used in October 2018 (Statement 3 false — the 'first time' trap).

Related PYQ: UPSC Prelims 2017: "Which of the following statements is/are correct regarding the Monetary Policy Committee (MPC)? 1. It decides the RBI's benchmark interest rates. 2. It is a 12-member body including the Governor of RBI and is reconstituted every year. 3. It functions under the chairmanship of the Union Finance Minister." — Answer: (a) 1 only.

■ **[Abbreviations & Terminology]:** RBI: Reserve Bank of India | MPC: Monetary Policy Committee | CPI: Consumer Price Index | GDP: Gross Domestic Product | bps: basis points | FPIs: Foreign Portfolio Investors | SDF: Standing Deposit Facility | MSF: Marginal Standing Facility

Cement: The Hard-to-Abate Sector Standing in the Way of Net Zero

Why in news: Cement accounts for 7–11% of global emissions, and India's rising construction demand makes the sector central to its 2070 net-zero goal.

Key Details:

- **Two sources:** Heating limestone to about 1,450 °C needs fossil fuel, but 53–65% of emissions come from calcination itself — the chemical release of CO₂ from limestone.
- **Scale:** Output is projected to rise from 334 MT in 2019-20 to 1,546 MT by 2070; India emits about 0.62 t CO₂ per tonne of cement.
- **Levers:** Lower clinker share, more refuse-derived fuel, CCUS and green public procurement; India's clinker ratio (~67.5%) is already below the 77% world average.
- **Hidden costs:** Limestone mining clears forests and fertile topsoil; transport and lost carbon sinks are rarely counted.

Data/Facts/Example:

- **Targets:** A GCCA-TERI roadmap seeks 0.56 t CO₂/t by 2030 and 0.51 t by 2047; NITI Aayog seeks 20% thermal substitution with RDF by 2030.
- **Compliance:** Cement was among the first four sectors given binding emission-intensity targets under the CCTS (final rules, October 2025).

Common cement types and their clinker content

Type	Clinker share	Blended with
Ordinary Portland Cement (OPC)	Over 95%	Gypsum
Portland Pozzolana Cement (PPC)	65–80%	Fly ash and gypsum
Portland Slag Cement (PSC)	35–64%	Granulated blast-furnace slag and gypsum

Cement, Clinker & the CCTS

- **Clinker:** Nodules formed when limestone and clay are heated in a kiln; ground with gypsum to make cement.
- **Why hard to abate:** CO₂ released in calcination comes from the raw material, so clean energy alone cannot remove it.
- **CCTS:** India's carbon market under the Energy Conservation Act, 2001 (as amended in 2022), notified in 2023.
- **How it works:** Units that beat their emission-intensity target earn carbon credit certificates; those that miss must buy them.
- **Agencies:** BEE is the administrator; Grid-India is the registry; CERC regulates trading.
- **Not to confuse:** The PAT scheme trades energy-saving certificates; the CCTS trades carbon credit certificates.

How to use in UPSC Mains: Use in GS3 (climate change, industry) to explain 'hard-to-abate' sectors and why net zero needs material efficiency and CCUS, not just renewable power.

Mains value-add: Per the International Energy Agency, replacing one tonne of clinker avoids about 0.83 tonnes of CO₂ — cite it to show why blended cements are the cheapest near-term decarbonisation lever.

TARGET PRELIMS MCQ

Q. With reference to the cement industry and emissions, consider the following statements:

1. Calcination of limestone releases carbon dioxide even if the kiln is heated with renewable energy.
2. Portland Slag Cement uses granulated slag from blast furnaces in steelmaking.
3. The cement sector is outside the scope of India's Carbon Credit Trading Scheme.

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: CO₂ is released from limestone (CaCO₃) itself during calcination, whatever the fuel (Statement 1 true). PSC blends clinker with granulated blast-furnace slag (Statement 2 true). Cement was among the first sectors given binding emission-intensity targets under the CCTS in 2025 (Statement 3 false, the trap).

Related PYQ: UPSC Prelims 2015: "With reference to fly ash produced by the power plants using coal as fuel, which of the following statements is/are correct? 1. Fly ash can be used in the production of bricks for building construction. 2. Fly ash can be used as a replacement for some of the Portland cement contents of concrete. 3. Fly ash is made up of silicon dioxide and calcium oxide only, and does not contain any toxic elements." — Answer: (a) 1 and 2.

■ **[Abbreviations & Terminology]:** CO₂: carbon dioxide | MT: million tonnes | t: tonne | CCUS: Carbon Capture, Utilisation and Storage | GCCA: Global Cement and Concrete Association | TERI: The Energy and Resources Institute | RDF: Refuse-Derived Fuel | CCTS: Carbon Credit Trading Scheme | BEE: Bureau of Energy Efficiency | CERC: Central Electricity Regulatory Commission | PAT: Perform, Achieve and Trade

From the Brink to a Comeback: Species Recovery in India

Why in news: During Wildlife Week (October 2–8), new data show recoveries in lions, vultures, tahr and dugongs, as India prepares a National Red List of its species.

Story so far: The 4 Oct Brief covered the first release of captive-bred Great Indian Bustards. New today: a GIB chick hatched in Kutch after a decade, and wider recovery data across species.

Key Details:

- **Scheme:** The IDWH supports recovery plans for 24 identified species, from the GIB and Sangai to the dugong and the hangul.
- **Red List:** India launched its National Red List Roadmap at the IUCN World Conservation Congress (Abu Dhabi, 2025), targeting National Red Data Books by 2030.
- **Knowledge gap:** Of 7,516 Indian animal species assessed for the IUCN Red List, 1,012 are threatened — but this covers only 7.2% of documented animal species.
- **What works:** Conservation breeding, habitat protection, community stewardship and steady funding across budgets.

Data/Facts/Example:

- **Biodiversity share:** India has 2.4% of the world's land but about 8% of its flora and 7.5% of its fauna, and parts of 4 of the 36 biodiversity hotspots.
- **Community role:** In Kibber (Himachal), women help forest staff with camera traps to monitor snow leopards.

Recovery snapshots

Species	Before	Latest
Asiatic lion (Gujarat)	674 (2020)	891 (2025)
Vultures (Madhya Pradesh census)	8,397 (2019)	12,981 (2025)
Nilgiri tahr (TN & Keralam)	1,303 (2025)	1,364 (2026)
Dugong (Palk Bay + Gulf of Mannar)	—	270 (WII, 2026)
Snow leopard (first national estimate)	—	718 (2024)

The IUCN Red List & India's Species Recovery Programme

- **IUCN:** A union of governments and NGOs founded in 1948; headquarters at Gland, Switzerland.
- **Categories:** Extinct, Extinct in the Wild, Critically Endangered, Endangered, Vulnerable, Near Threatened, Least Concern.
- **Threatened:** Only CR, EN and VU count as 'threatened'.
- **IDWH:** A Centrally Sponsored Scheme of the MoEFCC; funds protected areas and the species recovery programme.
- **Breeding centres:** The Jatayu Conservation Breeding Centre at Pinjore (Haryana) is run with the BNHS.
- **Not to confuse:** IUCN categories are assessments; legal protection in India comes from the Schedules of the Wild Life (Protection) Act, 1972.

How to use in UPSC Mains: Use in GS3 (conservation) to show that species recovery is possible but slow — it needs science, communities and multi-year funding, not one-off projects.

Mains value-add: Tamil Nadu notified India's first dugong conservation reserve, 448.34 sq km in the Palk Bay, in 2022 — cite it as an example of State-level, habitat-based protection for a marine species.

TARGET PRELIMS MCQ

Q. With reference to wildlife conservation in India, consider the following statements:

1. India's first dugong conservation reserve has been notified in the Gulf of Kutch.
2. The Nilgiri tahr is the State animal of Tamil Nadu.
3. The Jatayu Conservation Breeding Centre for vultures is located at Pinjore in Haryana.

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: (c) 2 and 3 only

Explanation: The first dugong conservation reserve is in the Palk Bay off Tamil Nadu, not the Gulf of Kutch (Statement 1 false, the trap — dugongs are found in both). The Nilgiri tahr is Tamil Nadu's State animal (Statement 2 true). The Jatayu centre is at Pinjore, run by the Haryana Forest Department and the BNHS (Statement 3 true).

Related PYQ: UPSC Prelims 2012: "Vultures which used to be very common in Indian countryside some years ago are rarely seen nowadays. This is attributed to (a) the destruction of their nesting sites by new invasive species (b) a drug used by cattle owners for treating their diseased cattle (c) scarcity of food available to them (d) a widespread, persistent and fatal disease among them" — Answer: (b).

■ **[Abbreviations & Terminology]:** GIB: Great Indian Bustard | IDWH: Integrated Development of Wildlife Habitats | IUCN: International Union for Conservation of Nature | TN: Tamil Nadu | WII: Wildlife Institute of India | NGOs: Non-Governmental Organisations | CR/EN/VU: Critically Endangered/Endangered/Vulnerable | MoEFCC: Ministry of Environment, Forest and Climate Change | BNHS: Bombay Natural History Society

Chemistry Nobel 2026: Mirror-Image Molecules and How Life Picked a 'Hand'

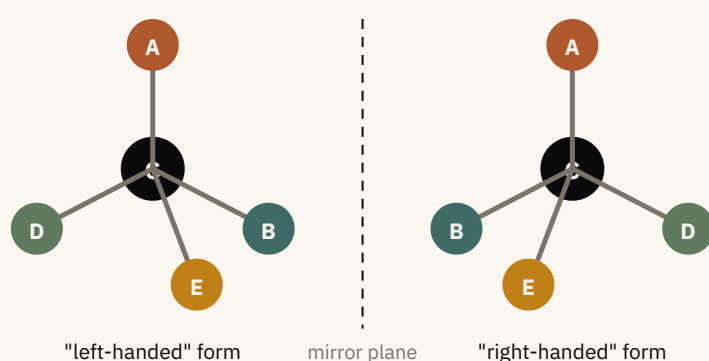
Why in news: French chemist Henri Kagan and Japanese chemist Kenso Soai won the 2026 Nobel Prize in Chemistry for showing how small imbalances in chiral molecules can be amplified in chemical reactions.

Key Details:

- **Chirality:** Many molecules exist in two mirror-image forms, like left and right hands; life overwhelmingly uses only one of the two.
- **Kagan (1986):** Showed that a small imbalance in the 'handedness' of a catalyst can disproportionately bias the end products of a reaction.
- **Soai (1990s):** Showed that a chiral molecule can speed up the formation of more molecules of its own handedness — a self-amplifying reaction.
- **Uses:** These ideas help chemists make the desired form of drugs, agrochemicals and fragrances efficiently.

Data/Facts/Example:

- **Why it matters:** Proteins are built from one form of amino acids; a drug's mirror form may be useless or harmful.
- **Classic warning:** Thalidomide, a chiral drug sold in the 1950s–60s, caused severe birth defects and pushed regulators to scrutinise each mirror form.

Chirality: same atoms, mirror-image arrangement

Like left and right hands:
mirror images that cannot be superimposed on each other.

Same melting/boiling point;
rotate polarised light in opposite directions.

Body's receptors are chiral, so
one form may heal and the other may harm.

Schematic diagram, not to scale. A carbon atom bonded to four different groups is a common source of chirality.

Chirality & Enantiomers

- **Definition:** A chiral molecule cannot be superimposed on its mirror image; the two forms are called enantiomers.
- **Discovery:** Louis Pasteur discovered molecular chirality in 1848 by separating mirror-image tartaric acid crystals.
- **Properties:** Enantiomers share melting point and boiling point but rotate plane-polarised light in opposite directions.
- **In life:** Proteins use L-amino acids; DNA and RNA use D-sugars — called homochirality.
- **Not to confuse:** The 2001 Nobel (Knowles, Noyori, Sharpless) and the 2021 Nobel (List, MacMillan) were also for asymmetric catalysis — different tools.

How to use in UPSC Mains: Use in GS3 (S&T, pharmaceuticals) to show how basic chemistry shapes drug safety and cost — and why India's pharma industry needs strong research in asymmetric synthesis.

Mains value-add: The U.S. FDA's 1992 policy on stereoisomeric drugs asks developers to study each mirror form of a chiral drug separately — cite it to link basic chemistry with drug regulation.

TARGET PRELIMS MCQ

Q. With reference to chirality in molecules, consider the following statements:

1. The two mirror-image forms of a chiral molecule have identical melting and boiling points.
2. Proteins in the human body are built almost entirely from D-amino acids.
3. Louis Pasteur discovered molecular chirality while studying tartaric acid crystals.

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: Enantiomers have identical physical properties except their effect on plane-polarised light (Statement 1 true). Proteins use L-amino acids; it is sugars in DNA/RNA that are D-form — mixing up L and D is the trap (Statement 2 false). Pasteur separated tartaric acid crystals in 1848 (Statement 3 true).

■ **[Abbreviations & Terminology]:** DNA: Deoxyribonucleic Acid | RNA: Ribonucleic Acid

UCIL Plans to Double Uranium Output, Including From Copper Waste

Why in news: Uranium Corporation of India Ltd. plans to double domestic uranium output by 2036 through four greenfield projects and by recovering uranium from copper-mine residue.

Key Details:

- **Copper residue:** From 2029-30, UCIL will process tailings from Hindustan Copper Ltd. mines — about 95% of what HCL rejects — to recover uranium.
- **Greenfield mines:** Rohil (Rajasthan) is the most advanced, with capacity to mine/process 2,500 tonnes of ore a day; Gogi (Karnataka) is at an early stage.
- **Why now:** Opening of nuclear power generation to private players will raise demand for domestic uranium.
- **Circular economy:** Using copper waste avoids new mining and reduces tailings.

Data/Facts/Example:

- **Other projects:** Two more greenfield projects are planned in Andhra Pradesh and Chhattisgarh.
- **National goal:** The Nuclear Energy Mission (Budget 2025-26) targets 100 GW of nuclear capacity by 2047.

India's Three-Stage Nuclear Power Programme

- **Architect:** Formulated by Homi J. Bhabha in the 1950s to make use of India's large thorium reserves.
- **Stage 1:** PHWRs use natural uranium as fuel and heavy water as moderator, producing plutonium.
- **Stage 2:** Fast breeder reactors use plutonium to produce more fissile material; the PFBR is at Kalpakkam.
- **Stage 3:** Thorium-based reactors using uranium-233 bred from thorium.
- **UCIL:** A CPSU under the DAE, set up in 1967; India's first uranium mine is at Jaduguda in Jharkhand.
- **Not to confuse:** India has modest uranium but among the world's largest thorium reserves, mainly in monazite beach sands.

How to use in UPSC Mains: Use in GS3 (energy security) to show how domestic fuel supply, circular-economy mining and private participation fit into India's nuclear expansion.

Mains value-add: The India–U.S. civil nuclear agreement (2008) and the NSG waiver let India import uranium for safeguarded reactors — cite it to show why domestic output still matters for unsafeguarded and strategic needs.

TARGET PRELIMS MCQ

Q. With reference to India's nuclear energy programme, consider the following statements:

1. Uranium Corporation of India Limited functions under the Department of Atomic Energy.
2. The first stage of India's three-stage programme is based on thorium-fuelled reactors.
3. Jaduguda, India's first uranium mine, is located in Jharkhand.

Which of the statements given above is/are correct?

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

Answer: (b) 1 and 3 only

Explanation: UCIL is a CPSU under the DAE (Statement 1 true). The first stage uses natural-uranium PHWRs; thorium comes only in the third stage (Statement 2 false, the trap). Jaduguda in East Singhbhum, Jharkhand, has been mined since 1968 (Statement 3 true).

Related PYQ: UPSC Prelims 2023: "Statement-I: India, despite having uranium deposits, depends on coal for most of its electricity production. Statement-II: Uranium, enriched to the extent of at least 60%, is required for the production of electricity." — Answer: (c) Statement-I is correct but Statement-II is incorrect.

■ **[Abbreviations & Terminology]:** UCIL: Uranium Corporation of India Ltd. | HCL: Hindustan Copper Ltd. | GW: gigawatt | PHWRs: Pressurised Heavy Water Reactors | PFBR: Prototype Fast Breeder Reactor | CPSU: Central Public Sector Undertaking | DAE: Department of Atomic Energy | NSG: Nuclear Suppliers Group

QUICK FACTS & EXAMPLES — GS PAPER 3

India's trade squeeze: India's net exports with the U.S. were about \$33.9 billion in 2025-26, while its deficit with China reached about \$112.1 billion; a heavy U.S. tariff could shrink the surplus that offsets the China deficit and pressure the rupee.

How to use: *GS3 (external sector): cite when arguing for export diversification toward new FTAs and the Global South.*

Account Aggregators: RBI will make NBFC-AAAs interoperable by December 31, 2026, so a customer can see all financial assets in one place; about 15 AAs exist today. Individuals' personal forex transactions are spared from new FEMA reporting.

How to use: *GS3 (financial inclusion, digital public infrastructure): example of consent-based data sharing in finance.*

Satellite spectrum: Elon Musk blamed 'oligarchs' for delaying Starlink's India launch. The government has chosen administrative assignment of satellite spectrum, which telecom operators opposed by citing the 2012 2G judgment favouring auctions.

How to use: *GS3 (telecom, natural resources): use for the auction vs administrative allocation debate.*

Iceland's offer: Iceland gets about 70% of its electricity from hydropower and 30% from geothermal and is offering CCUS and Carbfix 'carbon-to-stone' technology; India's estimated geothermal potential is about 10.6 GW.

How to use: *GS3 (renewable energy): example of untapped geothermal potential and mineralisation-based carbon storage.*

Elephant tracking: a five-year GPS study by the Assam Forest Department and WWF-India in Udalguri, Sonitpur and Biswanath produced 38,000+ location points; Assam has 4,149 elephants (2025 synchronised census).

How to use: *GS3 (human-wildlife conflict): use to show data-driven corridor planning.*

Defence testing: the Defence Ministry's revised SOP waives proof and testing charges for iDEX, TDF and Make projects and replaces arbitration with conciliation.

How to use: *GS3 (defence indigenisation): example of easing access to State infrastructure for start-ups.*

GS PAPER 4: ETHICS

'Students, Not Antisocial Elements': Bombay HC on Restoring Trust in Recruitment

Why in news: The Bombay HC said students protesting alleged malpractices in MPSC recruitment are not antisocial elements and asked the Maharashtra government to restore their trust.

Key Details:

- **The court:** A Division Bench led by Chief Justice Mahesh Chandra Tripathi asked the protesters to return to studies and the State to take trust-building steps.
- **State's response:** It accepted demands to set the exam fee at ₹100 and hold exams offline; it has not filed cases against the agitators.
- **Accountability:** The State must give, within three weeks, a road map on recruitment and vacancies; next hearing on November 25.
- **GS4 concept:** This illustrates empathy in governance and institutional trust — treating dissent as a signal of a service-delivery failure, not a law-and-order problem.

Data/Facts/Example:

- **Demand pending:** The demand for the MPSC Chairman's resignation was forwarded to the Governor.
- **Why trust matters:** Recruitment bodies run on legitimacy; repeated leaks and delays erode faith in merit itself.

State Public Service Commissions (Articles 315–323)

- **Appointment:** The Chairman and members of a State PSC are appointed by the Governor.
- **Removal:** Only the President can remove them; for misbehaviour, after an inquiry by the SC (Article 317).
- **Tenure:** Six years or until age 62, whichever is earlier (65 for UPSC members).
- **Functions:** Conducts exams and advises on recruitment, promotions and disciplinary matters (Article 320).
- **Reporting:** Presents an annual report to the Governor, which is laid before the State legislature (Article 323).
- **Not to confuse:** A Joint State PSC is set up by an Act of Parliament on request of the States; it is statutory, not constitutional.

How to use in UPSC Mains: Use in GS4 (probity, trust in institutions, empathy) and GS2 (constitutional bodies) to show that transparent, time-bound recruitment is itself a public service.

Mains value-add: The Nolan Committee (U.K., 1995) listed seven principles of public life — selflessness, integrity, objectivity, accountability, openness, honesty and leadership; cite 'openness' and 'accountability' to frame what restores trust in recruitment bodies.

MAINS PRACTICE QUESTION

Q. Repeated irregularities in public recruitment examinations erode citizens' trust in the State. Discuss the ethical responsibilities of recruitment bodies and the government in restoring this trust, with reference to empathy and accountability. (150 words)

■ **[Abbreviations & Terminology]:** HC: High Court | MPSC: Maharashtra Public Service Commission | PSC: Public Service Commission | SC: Supreme Court | UPSC: Union Public Service Commission