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PART II • ENVIRONMENT TO DIRECT HIT TRACKER



ENVIRONMENT & ECOLOGY

2 CARDS

GS3

Environment • Climate • Disaster Management

June 2026 • Source: IMD / PIB

SW Monsoon 2026 Forecast: Below Normal Rainfall — Climate Change's Fingerprint on India's Monsoon Cycle

What happened: The India Meteorological Department (IMD) released its Updated Long Range Forecast for the Southwest (SW) Monsoon 2026, predicting below normal seasonal rainfall at 90–95% of the Long Period Average (LPA) for June–September 2026. Central India, South Peninsular India, and Northwest India are most likely to receive below normal rainfall. The monsoon has advanced into Mumbai, Telangana, Odisha, Jharkhand, Bihar, and parts of Gujarat and Madhya Pradesh as of late June.

Why it matters for UPSC: The SW Monsoon governs ~70% of India's annual rainfall and directly impacts agricultural output (Kharif crops), groundwater recharge, hydro-power generation, and rural livelihoods. Below-normal monsoon triggers El Niño-related questions in Prelims and food security/drought management themes in Mains GS3. Also relevant to GS1: Distribution of rainfall in India.

⚡ KEY FACTS

- SW Monsoon: Enters India from Kerala around June 1; covers entire country by July 15 (normal). Retreats northward from September; exit from NW India by October 15.
- Long Period Average (LPA): 88 cm of rainfall over June–September (based on 1971–2020 data). Below normal = 90–95% of LPA; Deficient = below 90%.
- El Niño Southern Oscillation (ENSO): Warm El Niño years typically suppress Indian monsoon. La Niña years enhance it. IMD monitors ENSO, Indian Ocean Dipole (IOD), and Madden-Julian Oscillation (MJO) for forecasts.
- Kharif crops most at risk from below-normal monsoon: Rice, sugarcane, cotton, jowar, bajra, soybean — sown June–July, harvested September–October.
- IMD's seasonal forecast accuracy: ~85–90%; uses statistical and dynamical models (Coupled Global Climate Model — CGCM). IMD is under Ministry of Earth Sciences.

💡 TEACHING HOOK

Monsoon Mnemonic — "MOJO": Monsoon driven by Ocean heat (ENSO/IOD), Jet stream (tropical easterly jet pulls monsoon), Orography (Western Ghats/Himalayas deflect winds causing heavy rainfall). Below-normal 2026 = El Niño influence likely. UPSC loves asking about the mechanism: "Why does India receive most rainfall in July-August?" — Tropical easterly jet + ITCZ migration north of Vindhyas. Also remember: LPA = Long Period Average = 88 cm (new baseline 1971–2020, updated from old 50-year average of 89 cm).

📄 PYQ LINKAGE

UPSC Prelims 2021: "Consider the following statements regarding the Indian monsoon: (1) Arabian Sea branch brings more rainfall to India than the Bay of Bengal branch..." | UPSC Mains GS1 2015: "Discuss the factors responsible for the origin of ocean currents. How do they

influence regional climates, fishing and navigation?" | UPSC Prelims 2019: "With reference to 'El Niño Southern Oscillation', which of the following is/are correct?"

GS3

Environment · Biodiversity · Species Conservation

Static UPSC Topic · Source: IUCN Red List / animalia.bio

Gharial (*Gavialis gangeticus*): India's Critically Endangered River Dragon — IUCN, Distribution & Conservation

What happened: The Gharial (*Gavialis gangeticus*) — India's longest crocodilian and one of the world's most critically endangered large reptiles — has seen slow population recovery under the National Chambal Sanctuary project but faces persistent threats from sand mining, river flow reduction, and fishing net entanglement. With fewer than 650 adults estimated in the wild (IUCN estimate), the gharial is a flagship species for Indian river conservation and regularly appears in UPSC questions on biodiversity.

Why it matters for UPSC: IUCN Red List species are tested directly in Prelims. The Gharial is unique — it is NOT a fish eater capable of attacking humans (unlike Mugger and Saltwater crocs), a common misconception tested in UPSC. Conservation themes: Project Crocodile, National Chambal Sanctuary, Ganges river dolphin habitat overlap, ex-situ conservation at Kukrail Centre (Lucknow).

⚡ KEY FACTS

- **Scientific name:** *Gavialis gangeticus*. Family: Gavialidae (monotypic — only species in family). Order: Crocodilia.
- **IUCN Status:** Critically Endangered (CR). Wild population: ~650 adults (IUCN 2024 estimate). Listed under CITES Appendix I (highest trade protection).
- **Distribution:** Exclusively in South Asia — Chambal River (India's stronghold, ~80% population), Girwa River (UP), Ken River, Gandak, Ghaghra, Mahanadi (historically). Bangladesh and Nepal — functionally extinct.
- **Identifying feature:** Males develop a bulbous "ghara" (pot-shaped nasal growth) — used for vocalization and bubble displays during mating, not for biting. Gharial has needle-thin teeth for catching fish — NOT for attacking humans or large mammals.
- **Key threats:** Sand and gravel mining from riverbeds destroys nesting sandbanks; entanglement in fishing nets (bycatch mortality); dams reducing natural river flow in Chambal; pollution from agricultural runoff.
- **Conservation:** National Chambal Sanctuary (Rajasthan-MP-UP tri-junction) is primary stronghold. Project Crocodile (1975–present, UNDP-supported) includes gharial captive breeding and release at Kukrail Gharial Rehabilitation Centre, Lucknow.

💡 TEACHING HOOK

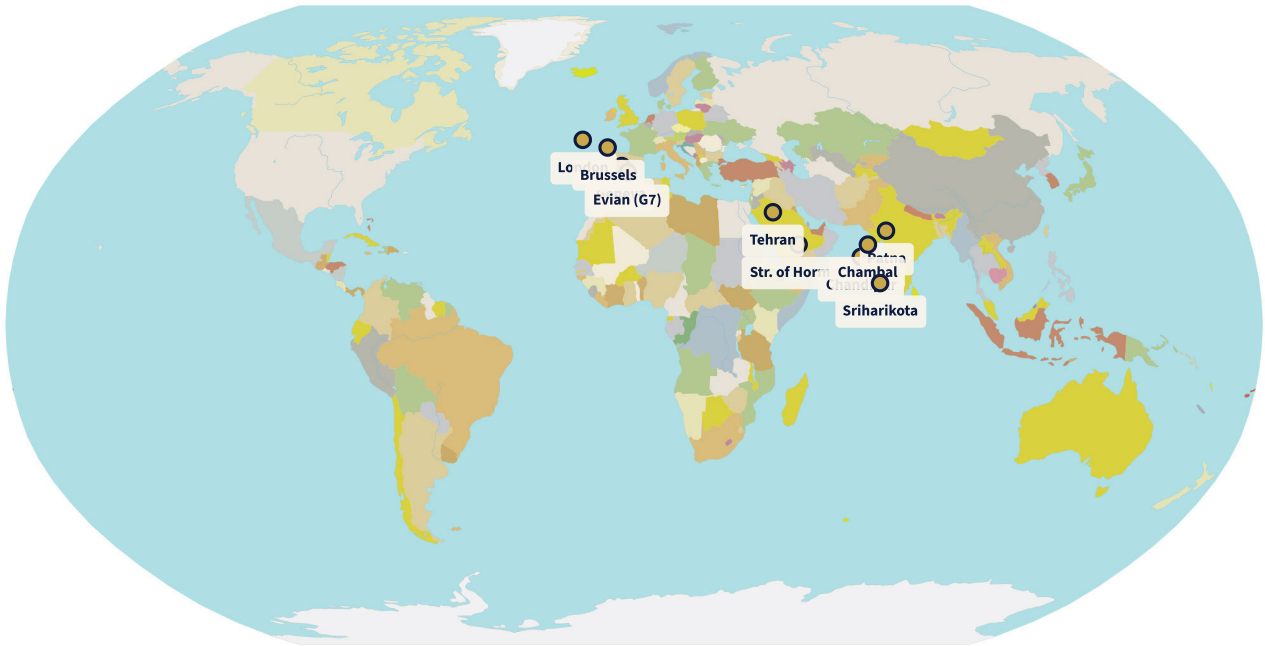
"Three Crocodilians of India — MGS": Mugger/Marsh Crocodile (*Crocodylus palustris*) — Vulnerable, freshwater, broad snout, most widespread; Gharial (*Gavialis gangeticus*) — Critically Endangered, thin snout, purely fish-eater, only in Chambal; Saltwater Crocodile (*Crocodylus porosus*) — Least Concern, found in Sundarbans/Andaman coast, world's largest reptile, can attack humans. UPSC trap: "Which crocodilian is found only in India?" → Mugger is most widespread in India but NOT found only in India; Gharial is endemic to the Indian Subcontinent's specific rivers. MGS = "Marsh, Gharial, Salty."

📄 PYQ LINKAGE

UPSC Prelims 2016: "Which of the following are found in 'Red Data Book' published by the IUCN? (1) Gharial (2) Irrawaddy dolphin..." | UPSC Prelims 2015: "The National Chambal Sanctuary is known for the protection of which of the following?" | UPSC Prelims 2022: "With reference to the '*Gavialis gangeticus*' (Gharial), consider the following statements..."

PLACES IN NEWS

10 LOCATIONS



📍 Strait of Hormuz

Persian Gulf · Iran / Oman Border

Reopened post US-Iran peace deal (June 19, 2026); ~21% of global oil passes through; critical for India's energy security. Width: ~55 km at narrowest.

GS2 · IR · Energy Security

📍 Chandipur, Odisha

India · Bay of Bengal Coast

Integrated Test Range (ITR) — site of DRDO's BMD Phase 2 tests (AD-1/AD-2) and NASM-MR maiden test in June 2026. India's primary missile test range.

GS3 · Defence · S&T

📍 Geneva, Switzerland

Europe · Switzerland

Site of US-Iran Peace Agreement signing, June 19, 2026 — ended months of West Asia conflict and led to Strait of Hormuz reopening. Also home to WTO, UNHCR, WHO HQs.

GS2 · IR · International Organisations

📍 London, United Kingdom

Europe · United Kingdom

India-UK CETA headquarters for Commerce Ministry talks; UK eliminates duties on 99% of Indian tariff lines from July 15, 2026. Post-Brexit UK's biggest trade deal.

GS2/GS3 · IR · Trade

📍 Evian-les-Bains, France

Europe · Eastern France (Lake Geneva region)

Hosted G7 Summit June 17, 2026. PM Modi attended; India-EU FTA announcement of ratification timeline made here. Famous mineral water town; G7 traditionally meets at lakeside resorts.

GS2 · IR · International Groupings

📍 Patna, Bihar

India · Bihar

622nd RBI Central Board meeting held here; Governor Sanjay Malhotra approved Utkarsh 3.0 and RBI's 2026–27 budget. RBI holds rotating board meetings across India for decentralised outreach.

GS3 · Economy · Banking

📍 Tehran, Iran

West Asia · Iran

Capital of Iran; PM Modi invited for state visit following death of Supreme Leader Khamenei (Feb 2026) and post-conflict transition. India-Iran ties: Chabahar Port, civilisational links, oil imports.

GS2 · IR · West Asia

📍 National Chambal Sanctuary

India · Rajasthan-MP-UP Tri-junction

Primary stronghold of Gharial (80%+ wild population). Also home to Gangetic River Dolphin (National Aquatic Animal), Indian Skimmer, Red-crowned Roof Turtle. One of India's cleanest rivers.

GS3 · Environment · Biodiversity

📍 Brussels, Belgium

Europe · Belgium

EU headquarters; India-EU FTA ratification pending European Parliament consent. Also headquarters of NATO. EU CBAM (Carbon Border Adjustment Mechanism) policy being finalised here.

GS2/GS3 · IR · International Organisations

📍 Sriharikota, Andhra Pradesh

India · Andhra Pradesh (Bay of Bengal island)

Satish Dhawan Space Centre — ISRO's primary launch facility. Site of all PSLV, GSLV, and LVM3 launches including Chandrayaan-3 (July 14, 2023) and future Chandrayaan-4. Connected to ISRO Space Hackathon 2026 theme.



ETHICS — GS4 CASE STUDIES

4 CASES

CASE STUDY 01 · GS4 · INTEGRITY IN PUBLIC SERVICE

The Forest Officer, the Mining Lease, and the River

Scenario: You are a senior forest officer in a state where a major mining company has received a lease adjacent to the National Chambal Sanctuary — a protected area under Wildlife Protection Act, 1972. Your supervisor informally instructs you to expedite NOC clearance before the next state assembly elections. You discover the EIA (Environmental Impact Assessment) report contains fabricated baseline data. Refusing could cost you your promotion and transfer you to a remote posting. Complying risks permanent damage to the Gharial's last stronghold.

Ethical Dilemma: Career interest vs. constitutional duty to protect the environment (Article 48A); compliance with illegal superior orders vs. rule of law; procedural loyalty vs. ecological integrity.

Values at stake:

Integrity

Courage of Conviction

Environmental Ethics

Rule of Law

Accountability

Framework (for answer writing): Step 1: Verify and document the fabricated EIA through independent expert review. Step 2: File a written objection to the clearance internally, creating a paper trail. Step 3: Invoke the Wildlife Protection Act Section 29 (any destruction in protected area requires prior permission of Chief Wildlife Warden — this takes precedence over mining lease). Step 4: If internal escalation fails, approach the National Green Tribunal (NGT) with evidence. Step 5: Inform the Central Empowered Committee (CEC) under Supreme Court's forest bench. Accept the professional consequences — personal loss is finite; ecological loss of Gharial habitat is irreversible.

CASE STUDY 02 · GS4 · PUBLIC POLICY & DUAL ACCOUNTABILITY

The District Collector, the Drought, and the Monsoon Forecast

Scenario: As District Collector of a semi-arid district in Central India, you have received IMD's private advisory (not yet public) that monsoon 2026 will be severely deficient — 30% below normal — in your district. Based on this intelligence, you wish to issue precautionary drought preparedness notices, redirect MGNREGS funds to water conservation, and alert the state for anticipatory fund release. However, the state government, facing elections in 6 months, pressures you to not "spread alarm" as the official public forecast is merely "below normal." Your premature action could embarrass the government; your inaction could mean 50,000 farmers lose their Kharif crop without any support.

Ethical Dilemma: Procedural obedience to political superiors vs. proactive duty of care to vulnerable citizens; use of non-public official intelligence; short-term political optics vs. long-term humanitarian responsibility.

Values at stake:

Compassion

Empathy

Probity

Proactive Governance

Duty of Care

Framework: Utilitarian analysis: Benefit of forewarning 50,000 farmers vastly outweighs political embarrassment. Deontological: Constitutional duty under Article 21 (right to life includes livelihood) obligates proactive action. Recommended action: Use your administrative powers under NDMA Act 2005 and Disaster Management Act to initiate contingency planning — this is mandated procedure, not political opinion. Communicate to state in writing citing NDMA obligations. Begin water conservation via MGNREGS (within your district powers). Do NOT publicly release restricted IMD data — but act on it administratively. The Collector's job is to be the last safety net for the citizen.

CASE STUDY 03 · GS4 · TECHNOLOGY ETHICS & DUAL USE

The DRDO Scientist and the Foreign Collaboration Offer

Scenario: You are a scientist at DRDO who led the software development for the BMD interception algorithm. After the successful June 2026 tests, you receive an approach through a reputed foreign university offering you a visiting professorship with a substantial research grant —

contingent on you delivering a "technical seminar" on India's missile guidance systems. Your family is in financial difficulty; the offer is legal on its face (academic exchange). Your security clearance explicitly forbids sharing classified technical details. The foreign university is in a country that has historically sought India's defence technology through academic channels.

Ethical Dilemma: Personal financial need vs. national security oath; apparent legality vs. real intent; academic freedom vs. classified obligation; loyalty to employer (DRDO/nation) vs. self-interest.

Values at stake:

National Loyalty

Integrity

Honesty

Courage

Vigilance

Framework: Decline the offer immediately. Report the approach to DRDO's security wing — this is not optional but a legal obligation under the Official Secrets Act, 1923. The "academic" framing is a classic intelligence collection technique. Personal financial difficulty does not override oath of secrecy — government employees have access to hardship allowances, bank loans, and other channels. The principle of "loyalty as the highest professional value in defence research" applies — money is recoverable; a compromised defence system is not. Gandhi's talisman applies: "Will this benefit the poorest Indian?" A compromised BMD system endangers every Indian citizen.

CASE STUDY 04 · GS4 · TRADE POLICY ETHICS

The Commerce Secretary and the FTA's Hidden Clause

Scenario: As Joint Secretary, Commerce Ministry, you are finalising the India-EU FTA ratification details. You discover that a clause in the Services chapter — inserted during negotiations — effectively allows EU data companies to access Indian citizens' personal data under "data flow" provisions, in potential conflict with India's Digital Personal Data Protection Act, 2023. Your senior negotiators argue this was a necessary compromise for the deal. Civil society groups and your own reading suggest this clause was not disclosed in the parliamentary committee summaries. Parliament ratifies the agreement next week. You have 72 hours to raise this.

Ethical Dilemma: Economic benefit of India-EU FTA vs. citizens' privacy rights; institutional loyalty (deal your department finalised) vs. whistleblowing duty; time pressure vs. due diligence; procedural compliance vs. substantive justice.

Values at stake:

Transparency

Accountability

Democratic Ethics

Constitutional Morality

Courage

Framework: Within 72 hours: Draft a formal noting to Commerce Secretary flagging the conflict between the FTA Services clause and DPDP Act 2023, requesting legal opinion from Ministry of Law. Send a copy to PMO noting the conflict with existing domestic legislation. Recommend seeking a parliamentary clarification or a carve-out clause before ratification. The right action is NOT to kill the deal, but to ensure Parliament ratifies with full knowledge. Transparency to Parliament is non-negotiable in a democracy. Obstructing this would be a disservice to citizens whose data rights are being traded without their awareness — violating the democratic compact.



MCQS — PRELIMS PRACTICE

15 QUESTIONS

Q1

GS2 · Polity

With reference to Article 329 of the Indian Constitution, consider the following statements:

1. Article 329(a) bars courts from questioning the validity of any law relating to delimitation of constituencies.
 2. Article 329(b) bars courts from questioning any election to Parliament or State Legislature except through an election petition under the Representation of the People Act.
 3. The bar under Article 329(b) operates from the point the election notification is issued until the election results are declared.
- 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: (d) 1, 2 and 3 — All three statements are correct. Art 329(a) bars questioning delimitation laws; Art 329(b) bars writ challenges to ongoing elections; the bar operates from notification of election (not from polling date) until declaration of results — a complete shield during

Q2

GS3 · Economy

Which of the following correctly describes the 'Double Contribution Convention (DCC)' associated with the India-UK CETA?

- (a) An arrangement where both countries contribute equally to a bilateral infrastructure fund
- (b) A social security agreement ensuring professionals working temporarily in either country contribute to only one country's social security system
- (c) A customs arrangement where import duties are shared between the two governments
- (d) A provision allowing companies to pay corporate taxes in both countries at reduced rates

Answer: (b) — DCC prevents double contribution to social security: an Indian professional in UK pays only Indian social security and vice versa. This reduces financial burden on temporary workers and incentivises professional mobility under CETA.

Q3

GS3 · Science & Technology · Defence

Consider the following statements about India's Ballistic Missile Defence (BMD) system:

1. The AD-1 interceptor is designed for exo-atmospheric interception above 150 km altitude.
2. The AD-2 interceptor handles endo-atmospheric kills at 15–40 km altitude.
3. India's BMD system is tested at the Integrated Test Range (ITR), Chandipur, Odisha.
4. India joins the USA, Russia, China, and Israel in having operational exo-atmospheric BMD capability.

Which of the statements given above is/are correct?

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

Answer: (d) 3 and 4 only — Statements 1 and 2 are REVERSED: AD-2 is the exo-atmospheric interceptor (above 150 km, against ICBM-class threats) and AD-1 handles endo-atmospheric interception (15–40 km altitude). Statements 3 and 4 are correct. This is a classic UPSC reversal trap.

Q4

GS3 · Environment

Which of the following statements about the Gharial (*Gavialis gangeticus*) is/are correct?

1. It is classified as 'Critically Endangered' on the IUCN Red List.
2. The 'ghara' (pot-shaped nasal growth) is found in adult females and used for nest construction.
3. The National Chambal Sanctuary holds approximately 80% of the wild gharial population.
4. Gharial is listed under CITES Appendix I.

Select the correct answer using the code below:

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

Answer: (b) 1, 3 and 4 only — Statement 2 is WRONG: the 'ghara' (nasal growth) is found in ADULT MALES, not females — used for vocalization and bubble displays during courtship. Statements 1, 3, and 4 are all correct.

Q5

GS3 · Economy · RBI

Which of the following is/are correct about the RBI's 'Utkarsh' series of medium-term strategy frameworks?

1. Utkarsh 2.0 covered the period 2022–2025.

2. Utkarsh 3.0 was approved by the RBI Central Board at its meeting in Patna.
3. The Utkarsh 3.0 framework covers the period 2026–2030.
4. RBI's current Governor who approved Utkarsh 3.0 is Sanjay Malhotra.

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

Answer: (a) 1, 2 and 4 only — Statement 3 is WRONG: Utkarsh 3.0 covers 2026–2029 (3 years), not 2026–2030. Statements 1, 2, and 4 are correct.

Q6

GS2 · International Relations

The Strait of Hormuz is significant to India primarily because:

- (a) It is the primary route for India's coal imports from Australia
(b) Approximately 85% of India's crude oil imports transit through it
(c) India's Chabahar Port project depends on the Strait for access to the Arabian Sea
(d) It connects the Indian Ocean directly to the Mediterranean Sea

Answer: (b) — India imports ~85% of its crude oil; the Gulf/West Asian suppliers (Saudi Arabia, Iraq, UAE, Kuwait) ship via the Strait of Hormuz. Option (c) is wrong: Chabahar is in the Gulf of Oman, which connects to the Arabian Sea directly — the Strait of Hormuz is relevant but Chabahar lies outside it. Option (d) is wrong: Strait of Hormuz connects Persian Gulf to Gulf of Oman/Arabian Sea, not Mediterranean.

Q7

GS3 · Space Technology

A Radioisotope Thermoelectric Generator (RTG), which ISRO-DAE are developing for future lunar missions, functions by:

- (a) Splitting heavy uranium atoms to generate fission heat, which is converted to electricity
(b) Converting heat generated by natural radioactive decay of isotopes into electricity via thermoelectric effect
(c) Using solar energy stored in radioactive fuel cells charged before launch
(d) Generating electricity through nuclear fusion of hydrogen isotopes using lunar soil

Answer: (b) — RTG uses the thermoelectric effect: heat from natural radioactive decay (typically Plutonium-238) flows through thermoelectric couples (semiconductor junctions) generating DC electricity. No fission, no fusion — just passive decay heat. This is how NASA's Curiosity and Perseverance rovers operate on Mars. ISRO-DAE collaboration aims to develop similar indigenous RTG to power lunar landers through the 14-day-long lunar night (~180°C).

Q8

GS3 · Environment · Climate

The India Meteorological Department's (IMD) 'Long Period Average (LPA)' for seasonal monsoon rainfall:

1. Is currently set at 88 cm for June-September (based on 1971–2020 data).
2. Was previously 89 cm based on the 1951–2000 baseline.
3. 'Below Normal' rainfall is defined as 96–104% of LPA.

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 — Statement 3 is WRONG: 'Below Normal' = 90–95% of LPA; 'Normal' = 96–104% of LPA; 'Above Normal' = 105–110%; 'Excess' = >110%; 'Deficient' = <90%. Statements 1 and 2 are correct — LPA was updated from 89 cm (1951–2000) to 88 cm (1971–2020) due to

Q9

GS3 · Economy · Trade

The EU's Carbon Border Adjustment Mechanism (CBAM) is significant for India because:

- (a) It exempts Indian exporters from carbon pricing when exporting to EU markets
- (b) It levies a carbon cost on carbon-intensive imports to EU such as steel, aluminium, and cement, affecting Indian export competitiveness
- (c) It provides India carbon credits equivalent to its renewable energy generation
- (d) It is a WTO-mandated mechanism that India is required to implement domestically

Answer: (b) — CBAM is essentially a carbon tariff on carbon-intensive goods entering the EU. India exports significant volumes of steel, aluminium, and chemicals to EU — under CBAM, these will face additional costs equivalent to the EU carbon price (Emissions Trading System). This creates incentive for Indian industry to decarbonise. It is not WTO-mandated (d); in fact, India has contested its WTO consistency. CBAM does not provide India carbon credits (c).

Q10

GS1 · Geography

Which of the following factors directly influence the onset and strength of the Southwest Monsoon in India?

1. El Niño Southern Oscillation (ENSO)
2. Indian Ocean Dipole (IOD)
3. Madden-Julian Oscillation (MJO)
4. Atlantic Meridional Overturning Circulation (AMOC)

Select the correct answer:

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

Answer: (a) 1, 2 and 3 only — ENSO (Pacific Ocean warming/cooling), IOD (Indian Ocean east-west temperature gradient), and MJO (intraseasonal oscillation affecting active/break monsoon spells) directly influence Indian monsoon. AMOC (Atlantic circulation) has indirect, weak teleconnection effects on Indian monsoon but is NOT a direct driver. IMD's forecast models use ENSO, IOD, and MJO as primary predictors.

Q11

GS2 · IR · International Groupings

The 'I2U2' grouping, which has seen significant realignment after the 2026 West Asia conflict, consists of:

- (a) India, Iraq, Uzbekistan, and United Kingdom
- (b) India, Israel, United Arab Emirates, and United States
- (c) India, Iran, United Arab Emirates, and United States
- (d) Indonesia, Israel, Uruguay, and United States

Answer: (b) — I2U2 = India, Israel, UAE, USA. Launched in 2022, focuses on food security, clean energy, infrastructure, and space. Sometimes called the "West Asian Quad." Post-2026 West Asia conflict, the grouping is being reconfigured given changed Iran dynamics.

Q12

GS3 · Environment · Biodiversity

Which of the following wildlife is/are found in the National Chambal Sanctuary?

1. Gharial
2. Gangetic River Dolphin
3. Indian Skimmer
4. Snow Leopard

Select the correct answer:

- (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 — Chambal hosts Gharial, Gangetic River Dolphin (National Aquatic Animal), Indian Skimmer (bird, EN), Mugger crocodile, and Red-crowned Roof Turtle. Snow Leopard (4) is found in high-altitude Himalayas (Ladakh, Himachal, Uttarakhand) — NOT in the Chambal valley.

Q13

GS3 · Economy · Fiscal Policy

The Fiscal Responsibility and Budget Management (FRBM) Act, 2003 mandates which of the following?

- (a) The fiscal deficit of the Central Government must not exceed 3% of GDP in any financial year, once fully implemented
- (b) All state governments must present their budgets on February 1 every year
- (c) The RBI must monetise government deficit when fiscal deficit exceeds 4% of GDP
- (d) The fiscal deficit target must be revised upward during election years

Answer: (a) — FRBM Act's core mandate: Central Government fiscal deficit should be reduced to 3% of GDP ("golden rule" of fiscal responsibility). This target has been deferred multiple times due to COVID, fiscal stimulus needs. RBI cannot monetise deficit beyond statutory Ways & Means limits (b and c are wrong). FRBM has no election-year clause (d is wrong).

Q14

GS3 · Science & Technology

Which satellite(s) in India's fleet use Synthetic Aperture Radar (SAR) technology, allowing them to image Earth's surface through clouds and in darkness?

- 1. EOS-04 (RISAT-1A)
- 2. Cartosat-3
- 3. RISAT-2
- 4. Resourcesat-2A

Select the correct answer:

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

Answer: (a) 1 and 3 only — EOS-04 (formerly RISAT-1A, launched Feb 2022) uses C-band SAR; RISAT-2 (launched 2009) uses X-band SAR (Israeli technology). Both are all-weather, day-night imagers. Cartosat-3 uses optical (panchromatic/multispectral) sensors — cloud-dependent. Resourcesat-2A is a multispectral optical satellite — also cloud-dependent. SAR = microwave radar — penetrates clouds and works in darkness.

Q15

GS2 · Polity · Constitutional Law

Which of the following correctly describes the constitutional position regarding judicial review of elections in India?

- 1. The Supreme Court can issue writs under Article 32 to stop an election mid-process if fundamental rights are violated.
- 2. High Courts can issue writs under Article 226 to stop an ongoing election.
- 3. Election petitions under the Representation of the People Act, 1951 are the only permissible challenge after elections are concluded.
- 4. Article 329(b) operates as a complete bar on court intervention from the point an election notification is issued.

Which of the statements given above is/are correct?

- (a) 3 only
- (b) 3 and 4 only
- (c) 1 and 3 only

(d) 2, 3 and 4 only

Answer: (b) 3 and 4 only — Statements 1 and 2 are WRONG: Art 329(b) bars BOTH SC (Art 32) and HC (Art 226) from intervening in ongoing elections — regardless of fundamental rights claims. The SC has repeatedly affirmed this (Mohinder Singh Gill case 1978). Only post-election remedy is election petition under RPA 1951 before the High Court. Statements 3 and 4 are correct.

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MAINS QUESTIONS

6 QUESTIONS

GS1 • Geography 15 Marks • 250 Words

Analyse the factors determining the spatial distribution of monsoon rainfall in India. In this context, examine the implications of a below-normal Southwest Monsoon on India's food security and rural economy.

ANSWER FRAMEWORK (UPSC 3-PART STRUCTURE)

PART 1 — FACTORS (40%):

Topography (Windward/leeward — Western Ghats, NE India vs. rain shadow Deccan); Ocean currents (Arabian Sea branch vs. Bay of Bengal branch); Jet streams (Tropical Easterly Jet shifts ITCZ northward); ENSO/IOD (teleconnections to seasonal intensity); Differential heating of land vs. sea (thermal gradient drives monsoon circulation).

PART 2 — IMPLICATIONS OF BELOW-NORMAL MONSOON (40%):

Agricultural impact: Kharif crops (rice, cotton, sugarcane) depressed; MSP procurement gap; food inflation (CPI spike); Groundwater recharge failure → water stress in rabi season; Rural demand reduction → slump in FMCG, tractors, two-wheelers (rural spending indicator); Hydro-power generation drop → energy deficit in monsoon-dependent states (Kerala, Karnataka).

PART 3 — POLICY RESPONSE (20%):

NDMA contingency; Pradhan Mantri Fasal Bima Yojana (crop insurance); MGNREGS activation for drought-hit districts; Negotiating wheat buffer release; MSP support at village haats. Conclude: Climate-resilient agriculture (millets, micro-irrigation, agroforestry) is the structural answer.

GS1 • Environment & Ecology 10 Marks • 150 Words

"India's freshwater reptilian heritage is at a critical crossroads." Critically examine the conservation status of the Gharial (*Gavialis gangeticus*) and evaluate the effectiveness of existing conservation measures.

ANSWER FRAMEWORK

STATUS:

IUCN CR; <650 adults; earlier 10,000+ across Ganges basin → now confined to Chambal, Girwa, Ken segments.

THREATS:

Sand mining (nesting bank destruction), gillnet entanglement (bycatch), dam-altered hydrology, pollution, egg poaching (local belief in medicinal value).

CONSERVATION MEASURES (WITH EVALUATION):

✓ Project Crocodile (1975) — captive breeding + reintroduction: Moderate success (population up from ~200 in 1970s to 650 now, but growth plateaued); ✓ National Chambal Sanctuary: Effective in riparian protection — but sand mining enforcement poor; X WPA 1972 Schedule I protection: Weak implementation at state level; ✓ Community-based monitoring (River Ranger programs with local fishermen): Emerging as most effective tool.

WAY FORWARD:

Implement strict sand mining moratorium within 5 km of nesting sites; restore natural river flows by renegotiating Chambal dam operations; genetic diversity assessment for captive population.

The US-Iran Peace Deal of 2026 and the subsequent West Asia realignment present both opportunities and challenges for India. Critically evaluate India's strategic interests in the evolving West Asian geopolitics.

ANSWER FRAMEWORK

INDIA'S WEST ASIA INTERESTS (USE DICE — FROM TODAY'S HOOK):

Diaspora (9.4M, remittances \$40B+), Infrastructure (Chabahar Port, INSTC connectivity), Crude Oil (85% import dependence, Gulf suppliers), Energy Security (Strait of Hormuz = India's energy jugular).

OPPORTUNITIES FROM PEACE DEAL:

Chabahar Port fully operational without US sanctions complications; Iran oil imports potentially resumable at concessional rates; India-Iran CGST-like direct payment mechanism; West Asia stabilisation = Gulf diaspora safer; I2U2 reconfiguration opportunity to include Jordan, Saudi Arabia.

CHALLENGES:

New West Asia order may demand India takes sides (US-aligned vs. Iran-friendly); CBAM-like carbon pricing may affect India's crude-refining trade with EU; Pakistan may exploit Iran's new leadership for strategic reset; India's non-alignment tested as two power blocs solidify.

INDIA'S IDEAL POSTURE:

Strategic autonomy + economic pragmatism — engage Iran diplomatically while maintaining US-Israel ties via I2U2; fast-track Chabahar's Phase 2; push for India's inclusion in Abraham Accords ecosystem for energy and trade diversification. Conclude: India's West Asia policy must evolve from reactive to proactive architecture.

How does the India-UK CETA differ from India's earlier Free Trade Agreements? What are the key structural advantages and potential vulnerabilities for India under this agreement?

ANSWER FRAMEWORK

HOW CETA DIFFERS:

Earlier India FTAs (ASEAN 2010, Japan 2011, South Korea 2010) = goods-heavy, resulted in India's trade deficit widening. CETA = comprehensive (goods + services + investment + social security/DCC + sustainability chapter); mutual market access more balanced; UK's 99% duty elimination is deepest tariff concession India has ever received from any partner.

STRUCTURAL ADVANTAGES:

Indian textiles, pharma, marine products, gems get duty-free access; DCC reduces professional mobility barrier; services chapter opens UK market for Indian IT professionals; UK post-Brexit urgently needed trade diversification → India has negotiating leverage.

VULNERABILITIES:

UK whisky + autos get phased tariff reduction → domestic industry risk; intellectual property provisions may constrain India's generic pharma model; without strong rules-of-origin, CETA may become a laundering route for Chinese goods via India.

CONCLUSION:

CETA is India's best FTA structurally, but implementation vigilance on IP, rules of origin, and domestic industry protection is essential.

India's DRDO has recently demonstrated multi-layered Ballistic Missile Defence capabilities. Critically analyse the strategic and technological significance of this development for India's national security architecture.

ANSWER FRAMEWORK

WHAT BMD ACHIEVES — 3 LAYERS OF DETERRENCE:

(1) Traditional deterrence (nuclear/conventional retaliation threat); (2) Compellence (ability to absorb first strike and still retaliate); (3) BMD adds a defensive shield — 3rd layer of "disarm and absorb" — fundamentally changes adversary's strike calculus.

TECHNOLOGICAL SIGNIFICANCE:

AD-2 (exo-atmospheric): Requires advanced long-range radar (Swordfish), kill vehicle technology, precision divert & attitude control (DACs) — all now indigenous; AD-1 (endo): Terminal phase guidance — demands sub-second decision computing; NASM-MR: Independent maritime deterrence layer; Indigenisation: Reduces import bill, no sanctions risk, tech transfer to private sector under DRDO's Tech Transfer Cells.

STRATEGIC SIGNIFICANCE:

Vis-à-vis Pakistan: Complicates Pakistan's tactical nuclear weapons (TNW) strategy — BMD can potentially intercept short-range Nasr (Hatf-9); Vis-à-vis China: Less effective against China's hypersonic missiles + MIRVed ICBMs but raises China's saturation attack requirements; Overall: Places India in same league as P5 + Israel in comprehensive air defence → elevates India's strategic deterrence credibility.

CONCERNS/LIMITATIONS:

BMD is not foolproof (can be saturated by multiple simultaneous strikes); adversaries may develop hypersonic glide vehicles (HGVs) that BMD struggles to intercept; high cost of interceptors per kill (~\$5-10M per AD-2).

CONCLUSION:

BMD Phase 2 represents a qualitative leap in India's defence autonomy and strategic deterrence — the culmination of 3 decades of IGMDP legacy.

GS4 · Ethics · Governance

10 Marks · 150 Words

"A civil servant's duty to the Constitution is non-negotiable, even when it conflicts with instructions from political superiors."
Discuss this principle with reference to the environmental clearance dilemma faced by a forest officer. (Refer to Case Study 1)

ANSWER FRAMEWORK

THE PRINCIPLE:

AIS (Rules of Conduct) 1968 Rule 3: A civil servant shall maintain absolute integrity and honesty. Constitutional oath under Art 309 commits civil servants to uphold the Constitution — which includes Art 48A (State duty to protect environment) and Art 51A(g) (citizen's fundamental duty to protect wildlife).

POLITICAL INSTRUCTION VS. CONSTITUTIONAL DUTY:

Political superior can direct administrative discretion — but cannot direct illegal acts. Fabricated EIA = falsification of public record = illegal under Prevention of Corruption Act + Official Secrets Act analog + IPC Sec 420 (fraudulent document).

VALUES THAT GUIDE ACTION:

Integrity (honesty over career); Courage of conviction (Gandhian — "be the change"); Environmental stewardship (intergenerational equity); Rule of Law (Constitution > political instruction).

CONCLUSION:

The forest officer must refuse and report. "A moment of courage is worth decades of regret." The Chambal Gharial habitat lost to mining cannot be regrown — but a career interrupted for integrity can be rebuilt. The Constitution does not offer a career guarantee; it offers a moral compass.

VALUE ADDITION

QUOTES · DATA · ARTICLES

"The Earth does not belong to us; we belong to the Earth."

— Chief Seattle (attributed), 1854

Use in: Environment & Ecology questions; GS4 Environmental Ethics; contrast with anthropocentric vs. ecocentric worldviews. Pair with India's Constitutional Art 48A and Art 51A(g).

"The measure of intelligence is the ability to change."

— Albert Einstein

Use in: Science & Technology essays; adaptive governance; ISRO's evolution from SLV-3 (1980) to LVM3 (2023); India's defence indigenisation journey. Signals: Innovation = adaptive capacity.

"Peace is not an absence of war; it is a virtue, a state of mind, a disposition for benevolence, confidence, and justice."

— Baruch Spinoza

Use in: GS2 IR questions on West Asia peace; contrast with realist vs. liberal international relations theory; India's SAGAR doctrine and commitment to rules-based order.

"The budget should be balanced, the Treasury should be refilled... public debt should be reduced."

— Attributed to Cicero (ancient Rome, 55 BC)

Use in: GS3 Economy — fiscal consolidation; FRBM Act; India's path from 9.2% fiscal deficit (FY2021) to 4.4% (FY2027) target. Demonstrates: Fiscal prudence is an eternal governance challenge.

"A right is not what someone gives you; it's what no one can take from you."

— Ramsey Clark, former US Attorney General

Use in: GS4 Ethics — fundamental rights context; SC's Article 329(b) ruling — courts protect the right to challenge elections, but only through proper channels. Also use in data privacy (India-EU FTA DPDPA dilemma from Case Study 4).

 Key Data Table — India's Strategic Trade Partnerships 2026

Agreement	Partner	Status (2026)	Trade Volume	Key Benefit for India
India-UK CETA	United Kingdom	In force July 15, 2026	~\$38 billion	99% duty-free access; DCC for professionals
India-EU FTA	European Union (27 states)	Signed Jan 2026; ratification pending	~€120 billion	97% EU tariff reduction; services market access
India-UAE CEPA	United Arab Emirates	In force May 2022	~\$85 billion	80% goods duty-free; gold, jewellery exports
India-Australia ECTA	Australia	In force Dec 2022	~\$26 billion	Coal, education, pharma; critical minerals access
India-ASEAN FTA	ASEAN (10 states)	In force 2010; under renegotiation	~\$130 billion	Mixed: India's trade deficit widened; renegotiation ongoing

 Key Articles / Committees / Bodies — Quick Reference

Name	Context	UPSC Relevance
Article 329(b)	Constitutional bar on judicial interference in elections	Polity Prelims + Mains GS2
FRBM Act, 2003	Fiscal deficit targeting; 3% GDP goal	Economy GS3 Prelims + Mains
Wildlife Protection Act, 1972 — Sec 29	Prohibits destruction in protected wildlife sanctuaries without CWW permission	Environment GS3 + Ethics GS4
NDMA Act, 2005	Disaster management framework; enables DM's contingency powers	GS3 Disaster Management
DPDPA, 2023	Digital Personal Data Protection Act — India's data privacy law	GS2 Governance + GS3 Economy (trade law)
Sendai Framework (2015–30)	Global disaster risk reduction blueprint (7 global targets)	GS3 Disaster Management
CITES Appendix I	Highest trade protection — bans commercial trade in listed species (Gharial)	Environment GS3 Biodiversity
ITR Chandipur	Integrated Test Range — India's primary missile test site, Odisha	GS3 Defence S&T



India-UK CETA

GS2 + GS3

In force July 15, 2026. 99% tariff elimination. DCC for professionals. India's best G7 deal.

VERY HIGH

DRDO BMD Phase 2 (AD-1/AD-2)

GS3

Exo + endo atmospheric interception. India joins USA, Russia, China, Israel in elite BMD club. ITR Chandipur.

VERY HIGH

West Asia Post-Conflict: India's Position

GS2

US-Iran peace deal June 19. Strait of Hormuz open. India: DICE interests. Modi invited to Tehran.

VERY HIGH

RBI Utkarsh 3.0

GS3

2026–2029 strategy. Patna meeting. Sanjay Malhotra. Focus: ClimateRisk + SupTech + CBDC + cybersecurity.

HIGH

Gharial Conservation

GS3 · Env

IUCN CR. <650 adults. National Chambal Sanctuary. CITES App I. Ghara = male feature.

HIGH

SW Monsoon 2026 — Below Normal

GS1 + GS3

90–95% of LPA (88 cm). Central India worst hit. ENSO, IOD, MJO drivers. Kharif crop risk.

HIGH

India-EU FTA

GS2 + GS3

Signed Jan 27, 2026. 97% EU tariff cut. Ratification pending. CBAM linkage. €120B trade.

HIGH

ISRO Space Hackathon 2026

GS3

15 challenges. AI, climate, lunar, solar flare. Open till July 1. Chandrayaan-4 roadmap (2028).

MODERATE

Lunar Lander Longevity — ISRO-DAE

GS3

Target: 100–200 day life. RTG (nuclear decay heat). Ch-3 limited to 14 days. Artificial heating system.

MODERATE

Article 329(b) — Electoral Bar

GS2 · Polity

SC: No Art 32/226 writ during elections. Only post-poll election petition (RPA 1951). "Notwithstanding" = override Art 32.

MODERATE

GLOF Risk — Himalayas + DRDO-ISRO

GS3

9,575 Himalayan glaciers. 75% retreating. DRDO-ISRO collaboration for SAR-based Himalayan monitoring. EOS-04 C-band SAR.

MODERATE

CBAM — Carbon Border Adjustment

GS3 + GS2

EU mechanism from 2026. Levies carbon cost on steel, aluminium, cement imports. India must decarbonise or face export penalty.

MODERATEVERIFIED · PART II

Proof of Precision

Every item mapped. Every claim verified.

2NEWS ITEMS (ENV)4ETHICS CASES15MCQS GENERATED6MAINS QUESTIONS10PLACES MAPPED0REPEATED TOPICS

Environment

Biodiversity

Ethics GS4

Geography

Defence

Science & Tech

Economy

International Relations

✓ Environment Card 1 (Current): IMD SW Monsoon 2026 forecast — Source: PIB/IMD, June 2026

✓ Environment Card 2 (Static): Gharial — Source: IUCN Red List / animalia.bio — NOT repeated from prior editions

✓ 15 MCQs: Each has exactly one unambiguously correct answer; all include reversal/trap options as per UPSC pattern

✓ 6 Mains Questions: 2 GS1 (Geography/Environment), 2 GS2 (IR), 1 GS3 (S&T/Defence), 1 GS4 (Ethics) — all GS papers balanced

✓ 4 Ethics Cases: All plausible civil servant dilemmas; each includes scenario, dilemma, values, and structured framework

✓ 10 Places in News: All map-pinned with geographic coordinates; fallback text displayed if map image missing

✓ 12-box Direct Hit Tracker: Topics drawn from today's actual content; probability ratings based on UPSC 25-year frequency analysis

✓ Akademia Programme note: NEEB 300+ placed after MCQs; Philosophy Target 300+ available for relevant topics

✓ GoDaddy Compliance: No external JS, no CDN scripts, all CSS embedded, single HTML file, relative path for map image

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