Prelims Exam Topics

INDIA'S UPDATED NDC

Context

The Indian government announced a bold update to its Nationally Determined Contributions (NDCs) for the 2031–2035 period, significantly raising its climate ambition ahead of its formal communication to the UNFCCC.

The New 2035 Targets vs. 2030 Commitments

The updated NDC is a response to the First Global Stocktake (GST), which concluded that the world is currently not on track to limit warming to 1.5°C.

Goal Category	2030 Target (Updated Aug 2022)	2035 Target (Announced Mar 2026)
Non-Fossil Fuel-Based Power Capacity	50% of installed electricity capacity from non-fossil sources	60% of installed electricity capacity from non-fossil sources
Emissions Intensity of GDP	Reduce by 44% from 2005 levels	Reduce by 47% from 2005 levels
Carbon Sink (Forests & Tree Cover)	Create additional sink of 2.5–3 billion tonnes of CO_2 equivalent	Enhance sink to 3.5–4 billion tonnes of CO_2 equivalent

Current Status & Progress Check

India is one of the few G20 nations consistently over-achieving its climate pledges:

- **Electricity Capacity:** Currently, **52%** of India's installed capacity is non-fossil (Solar, Wind, Hydro, Nuclear, Biomass), achieving the 2030 goal four years early. However, non-fossil sources currently account for only **25% of actual power generation**.
- **Emissions Intensity:** As of 2019, India had already achieved a 36% reduction. The move to a 47% target by 2035 balances **energy security** with decarbonization.
- **Forest Cover:** While forest cover rose from 21% (2005) to **24.6% (2021)**, it still trails the National Forest Policy goal of **33%**.

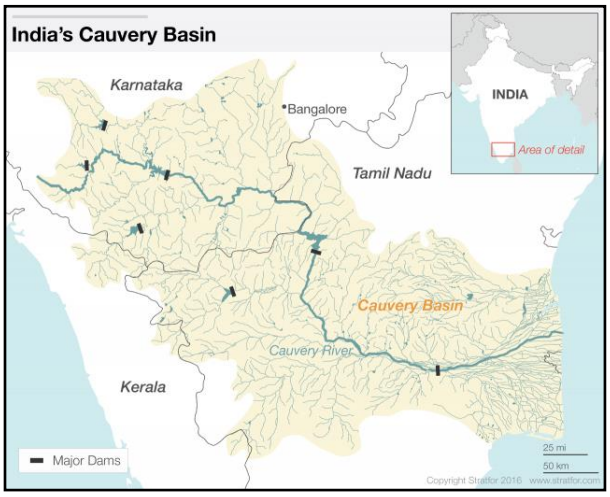
1. **Nationally Determined Contributions (NDCs):** These are voluntary climate action plans submitted by countries under the Paris Agreement to outline their specific targets for reducing greenhouse gas emissions and adapting to climate impacts.
2. **Global Stocktake (GST**): This is a fundamental process established under the Paris Agreement to periodically assess the world's collective progress toward limiting global warming to 1.5°C.
3. **Carbon Sink:** Natural or artificial reservoirs (like forests) that absorb more CO2 than they release.
4. **Emissions Intensity**: The total amount of greenhouse gases emitted per unit of GDP.

CAUVERY BASIN

Context

A study by IIT Gandhinagar in Earth's Future warns that while most Indian rivers will see increased flows from global warming, the Cauvery basin faces a unique 3.5% decline between 2026 and 2050.

About Cauvery



- **Origin:** Rises at **Talakaveri** in the **Brahmagiri Range** of the Western Ghats (Kodagu district, Karnataka) at an elevation of 1,341m.
- **Course:** Flows southeasterly for approximately **800 km** through Karnataka and Tamil Nadu before emptying into the Bay of Bengal at Poompuhar.
- **Drainage Basin:** Spans three States and one Union Territory: **Tamil Nadu (54%)**, **Karnataka (42%)**, **Kerala (3.3%)**, and **Puducherry (0.7%)**.
- **The "Twin Monsoon" Advantage:** Unlike other peninsular rivers, the Cauvery is nearly perennial. Its upper catchment (Karnataka) receives water from the **Southwest Monsoon** (June–Sept), while its lower catchment (Tamil Nadu) receives water from the **Northeast Monsoon** (Oct–Dec).
- **Left Bank Tributaries:** Harangi, Hemavati, Shimsha, and Arkavathy.
- **Right Bank Tributaries:** Lakshmana Tirtha, Kabbani, Suvarnavati, Bhavani, Noyyal, and Amaravati.
- **Famous Waterfalls: Shivasamudram Falls** (the second largest in India) and **Hogenakkal Falls** (often called the "Niagara of India").
- **Major Dams:**
    - **Krishna Raja Sagara (KRS):** Located in Karnataka, named after the Wadiyar king.
    - **Mettur Dam:** Located in Tamil Nadu, creating the Stanley Reservoir.
    - **Grand Anicut (Kallanai):** Built by the Chola King Karikala in the 2nd century AD; it is one of the oldest water-regulatory structures in the world still in use.
- **River Islands:** The river bifurcates to form three sacred islands: **Srirangapatna**, **Shivanasamudra** (in Karnataka), and **Srirangam** (in Tamil Nadu).
- **Protected Areas:** The basin hosts the **Cauvery Wildlife Sanctuary**, **Nagarhole National Park**, and **Bandipur National Park**.
- **Flagship Species:** The **Hump-backed Mahseer** (Critically Endangered), also known as the "Tiger of the Water," is endemic to this river system.

Cauvery water dispute

The Cauvery has been the center of a century-old dispute between **Karnataka and Tamil Nadu**.

- **The Legal Framework:** The **Cauvery Water Disputes Tribunal (CWDT)** final order (2007) and the **2018 Supreme Court verdict** allocated shares based on a "normal year" total of 740 tmcft. The SC designated the river a "national asset," allocating **404.25 tmcft to Tamil Nadu** and **284.75 tmcft to Karnataka**.
- In years of deficit rainfall, such as 2023, negotiations inevitably fail. Tamil Nadu's demand for water to save crops often clashes with Karnataka's refusal based on its own drinking water and

irrigation shortages.

- **The Proposed Solution:** Researchers suggest that with local decline inevitable, massive **river interlinking projects**, such as the **Godavari-Cauvery link**, may become a necessity rather than a choice to stabilize the basin.

PERSIAN GULF

Context

Beyond its role as a global oil corridor, the Persian Gulf is a fragile "natural laboratory" where resilient ecosystems face a "point of no return" due to rapid coastal urbanization, industrial brine discharge, and the toxic legacy of regional warfare.

About Persian Gulf

- It is an extension of the Indian Ocean, located between the Arabian Peninsula and southwestern Iran.
- **Connectivity:** It is connected to the **Gulf of Oman** in the east by the **Strait of Hormuz**.
- **Dimensions:** It is a shallow, semi-enclosed sea covering about 226,000 sq. km.
- **Depth:** It is remarkably shallow, with an average depth of only **30 meters** and a maximum depth of about 90 meters.
- **Primary Inflow**: Shatt al-Arab (formed by the confluence of the Euphrates and Tigris).
- **Major island: Qeshm Island** (Iran) — the largest island in the Gulf
- **Extreme Conditions:** Due to its shallowness and high evaporation, it is one of the saltiest (44-70 ppt) and warmest (exceeding 35°C in summer) marine bodies in the world.
- **Littoral States:** Eight countries border the Gulf: **Iran, Oman, United Arab Emirates, Saudi Arabia, Qatar, Bahrain, Kuwait, and Iraq.**
- **Strategic & Economic importance**
    - **Pearl Era:** Before the oil boom, the Gulf was the world's primary source of Basra Pearls, providing 80% of the global supply until the 1920s.
    - **The "Oil Chokepoint":** The Strait of Hormuz is the world's most important oil transit chokepoint. Approximately **one-fifth (20%) of global oil consumption** passes through this narrow strait.
    - **Energy Reserves:** The region contains the world's largest single source of crude oil and massive natural gas reserves (e.g., the **South Pars/North Dome field** shared by Iran and Qatar).
    - **Desalination Hub:** The Gulf hosts nearly **50% of the world's desalination capacity**, providing essential freshwater for the booming megacities of the Middle East.
- **Ecology**

- **Dugongs:** The region hosts the world's second-largest population (5,000–6,000 individuals) outside Australia. They depend entirely on the Gulf's vast **seagrass meadows**.
- **Sea Turtles:** Five of the world's seven species thrive here, including the critically endangered **Hawksbill turtle**, which nests along the coast.
- **Coral Reefs:** Covering an area roughly the size of Goa, these "heat-resistant" corals are vital for scientists studying how reefs might survive global climate change.
- **Mangroves & Mudflats:** These serve as carbon sinks, fish nurseries, and vital refuges for migratory birds.

- **Environmental Stressors**
  - **Land Reclamation:** In cities like Dubai, **60% of the natural coastline** has been modified. Mega-projects like **Palm Jumeirah** have disrupted natural sediment flows and buried seagrass beds.
  - **The Desalination Dilemma:** The Gulf hosts half the world's desalination plants. These facilities discharge **hot, toxic brine** back into the sea, further increasing salinity and temperature.
  - **Urban Concentration:** Over **85% of the region's population** now lives within 100 km of the coast, leading to chronic nutrient loading and frequent **algal blooms** (Red Tides).
  - **1991 Gulf War Spill:** One of the worst environmental disasters in history; clean-up efforts in Kuwait are still ongoing 35 years later.
  - **Ongoing Conflict:** Drones and missiles targeting oil infrastructure remain a constant threat, posing the risk of fresh catastrophic spills.

MICROPLASTICS CRISIS

Context

A study from V.O. Chidambaram College (Chennai) highlights a critical paradox: even in areas where microplastic abundance is low, the ecological risk can be severe due to the specific types of polymers involved.

About Microplastics

- Microplastics are plastic particles smaller than **5 mm** in diameter. They are categorized into two types:
  - **Primary Microplastics:** Purposefully manufactured small particles (e.g., microbeads in cosmetics, industrial pellets).
  - **Secondary Microplastics:** Result from the breakdown of larger plastic items (e.g., water bottles, fishing nets, synthetic clothing) due to UV exposure and mechanical wave action.
- **Lifecycle of Microplastics:** The lifecycle of a microplastic fiber is a closed loop that eventually leads back to human health.
  - **Sources of Entry:**
    - **Fishing Industry:** Abrasion of nylon nets and ropes sheds thousands of fragments.
    - **Synthetic Textiles:** Every laundry cycle releases minuscule plastic fibers (polyester, acrylic) through sewage and into the ocean.
    - **Urban Runoff:** Stormwater drains carry fragmented litter and tire wear particles from roads to the coast.

- **Bioaccumulation:** Small organisms like worms, crabs, and shellfish ingest these fibers. They cause physical blockages in digestive tracts and internal inflammation.
- **Impact on Humans:** When humans consume contaminated seafood, these microplastics can ferry pathogens and endocrine-disrupting chemicals into the body, potentially affecting the **hormonal and immune systems**.

Why Shape and Type of Polymer Matter

- Traditional monitoring often focuses purely on the *count* of plastic bits. However, researchers now argue that **polymer type** and **shape** are better indicators of danger.
    - **Nylon Dominance:** In many coastal sediments, nylon fibers (polyamides) are the most prevalent.
    - **Chemical Toxicity:** Polymers like nylon are highly persistent and contain chemical additives that can leach into the environment.
    - **Adsorption:** Microplastics act as "chemical sponges," adsorbing persistent organic pollutants (POPs) and heavy metals from the surrounding seawater, concentrating toxins before they enter the food chain.
    - **Habitat Alteration:** Fibrous microplastics can intertwine with sediment grains, altering the physical structure of the **benthic layer** (sea floor) and disrupting microbial communities.

Measures to combat microplastic pollution

- **Fishing Gear Recycling:** Implementing "Extended Producer Responsibility" (EPR) for fishing nets to ensure they are disposed of or recycled properly rather than abandoned at sea.
- **Laundry Filtration:** Promoting the use of micro-fiber filters in domestic and industrial washing machines.
- **Solid Waste Management:** Improving the collection of "single-use plastics" before they fragment into secondary microplastics.
- **Biodegradable Alternatives:** Shifting towards natural fibers (hemp, jute, cotton) in both the textile and fishing industries.

CALM-BRAIN

Context

- **National Institute of Mental Health and Neurosciences** and **National Centre for Biological Sciences** launched **CALM-Brain** to advance research on neuropsychiatric disorders.

About CALM-Brain

- **First national psychiatric database:** It is a digital **repository of brain structure and function data** from Indian patients with major psychiatric disorders.
- **Origin:** Initiated in **2016 under the Accelerator Program for Discovery in Brain Disorders using Stem Cells (ADBS)** supported by **DBT and Pratiksha Trust**.
- **Access: openly accessible to researchers and clinicians** to facilitate collaborative neuroscience research.
- **Types of Data Collected:** clinical, neuro-imaging, behavioural, genetic.
- **Large participant:** contains data from over 2,000 individuals belonging to about 900 families

Major Psychiatric Disorders Covered

Disorder	Description
Addiction	Compulsive dependence on substances or behaviours.
Bipolar disorder	Mood disorder with alternating mania and depression.
Dementia	Progressive loss of memory and cognitive abilities.
Obsessive-Compulsive Disorder (OCD)	Disorder involving repetitive intrusive thoughts and actions.
Schizophrenia	Severe mental illness affecting perception and thinking.

Significance of the Repository

- **Indian population data:** Provides **large-scale psychiatric datasets from Indian patients**, which were previously limited globally.
- **Early diagnosis through biomarkers:** Helps identify **neurocognitive biomarkers for early detection of mental disorders**.
- **Supports personalised treatment:** Large datasets can guide **targeted therapies based on biological and genetic factors**.
- **Advances biological research:** Linkage with **stem-cell repositories enables study of disease mechanisms at cellular level**.

STAKE AT 14TH WTO MINISTERIAL CONFERENCE (MC14)

Context:

- The **14th Ministerial Conference of the World Trade Organization will take** place from **26–29 March 2026 in Yaoundé, Cameroon**, amid rising trade tensions and weakening multilateral trade governance.

About WTO

- **Establishment:** Global body regulating **international trade rules**, established **1995 under Marrakesh Agreement**. It replaced the General Agreement on Tariffs and Trade (GATT).
- **Members:** Currently **166 member countries**, representing **~98% of global trade**.
- **Headquarters:** Geneva, Switzerland.
- **Objective:** Promote **rules-based, non-discriminatory global trade system**.
- **Principle: Most Favoured Nation (MFN)** rule gives equal trade treatment to all WTO members.

Ministerial Conference

- It is WTO's **highest decision-making body**, held **every two years**.
- **Function:** Decides **WTO rules, agreements, reforms and negotiation agenda**.
- **MC14:** Focus on **WTO reforms, dispute settlement revival, digital trade and plurilateral agreements**.

Key Issues to be discussed in MC14:

- **Plurilateralism:** Countries will discuss incorporating plurilateral agreements **(e.g., Investment Facilitation for Development and Agreement on Electronic Commerce)** into WTO framework.

  - It is included in **Annex 4 of the WTO treaty** and **requires consensus of all WTO members for inclusion.**
  - E.g. India opposes it as it will open a Pandora's box and lead to the fragmentation of the system.
- **E-commerce moratorium:** The moratorium was adopted in 1998 Geneva Ministerial Declaration and prohibits customs duties on electronic transmissions, renewed periodically at ministerial conferences. It set to expire on March 31.
  - **Developed countries:** Support **permanent extension**; promotes **free digital trade and global e-commerce growth**.
  - **Developing countries (e.g., India):** Oppose permanent extension; risk of **loss of tariff revenue and policy space in digital economy**.
- **SDT (Special and Differential Treatment):**
  - **Developed countries (e.g., U.S.):** Seek to **restrict SDT benefits** for large developing economies like **India, China, Brazil**.
  - **Developing countries:** Support **continuation of SDT** to ensure **policy flexibility and development support**.
- **Dispute Settlement:** Restoration of **Appellate Body**, paralysed since **2019 due to U.S. blocking judge appointments**.

India's Role at MC14

- **Leadership:** Reassert role as **voice of Global South**, defending **trade multilateralism and inclusive rule-making** within the WTO system.
- **Coalitions:** Build alliances with **developing and least-developed countries (LDCs)** to collectively safeguard **development-oriented trade policies**.
- **Dispute Settlement:** Strongly push for **restoration of the WTO Appellate Body** to revive the rules-based dispute resolution mechanism.
- **Reforms:** Support **institutional reforms** to modernise the WTO while preserving its **development-oriented mandate**.

TRANSPORT OF ANTIMATTER (ANTIPROTONS)

Context:

- Scientists at **CERN** successfully transported **antiprotons by road** using a **transportable antimatter trap**, marking the **first successful road transport of antimatter particles**.

About Antimatter

- **Definition:** Particles having **same mass as normal matter but opposite electric charge**, e.g., **antiproton (− charge) vs proton (+ charge)**.
- **Annihilation:** When **matter and antimatter meet**, they annihilate each other and **convert their mass into energy ($E = mc^2$)**.
  - **E.g.** Common antimatter particles include **positron (anti-electron), antiproton, and antineutron**.
- **Origin:** Antimatter forms naturally in **high-energy cosmic ray interactions** and artificially in

particle accelerators.

Matter vs Antimatter

Feature	Matter	Antimatter
Charge	Normal electric charge	Opposite electric charge
Example	Proton	Antiproton
Interaction	Stable with matter	Annihilates with matter
Energy release	None	Converts mass into energy

About the CERN Antimatter Transport Experiment

- **Objective:** Test whether **antiprotons can be safely transported outside particle accelerator facilities** for high-precision experiments.
- **Transport:** Around **100 antiprotons were transported by truck for about 30 minutes** during the test drive.
- **Outcome:** Approximately **91 antiprotons remained after the trip**, demonstrating that **controlled antimatter transport is feasible**.

Significance of the Experiment

- **Precision research:** Transport enables **experiments in quieter laboratories with minimal magnetic interference**.
- **Fundamental physics:** Allows scientists to test **symmetry between matter and antimatter particles**.
- **Cosmic mystery:** Helps investigate **why the universe is dominated by matter despite equal matter–antimatter creation in theory**.
- **Future experiments:** Scientists plan to transport antiprotons to **Heinrich Heine University (Germany)** for deeper studies.

CERN (European Organization for Nuclear Research)

- **Location:** Research organisation located near **Geneva on the France–Switzerland border**.
- **Establishment:** Founded in **1954** to promote **international collaboration in particle physics research**.
- **Objective:** Study **fundamental particles and forces** that make up the universe.
- **Major Facility:** Hosts the **Large Hadron Collider (LHC)** — the **world's largest and most powerful particle accelerator**.
- **Key Discovery:** Discovery of the **Higgs Boson (2012)** confirming the **Standard Model of particle physics**.
- **Antimatter Research:** Operates the **Antiproton Decelerator and Antimatter Factory** for studying **antimatter particles**.
- **Members:** Includes **23 member states**, mainly European countries, with global scientific collaboration.

India–CERN Collaboration

- **Membership:** India became **Associate Member of CERN in 2017**.
- **Participation:** Indian scientists contribute to **LHC experiments (CMS, ALICE, ATLAS)**.
- **Technology:** Indian institutions supply **detectors, superconducting magnets, and accelerator components**.
- **Institutions:** Participation from **TIFR, BARC, IISc, IITs and other research institutes**

PAKISTAN'S MEDIATION IN THE IRAN–US CONFLICT

Context:

- **Pakistan has offered to mediate between the US and Iran**, raising debates on its motivations, the challenges it faces, and the **strategic implications for India and regional geopolitics**

Why Pakistan Has Offered as Mediator

- **Diplomatic Access:** Pakistan maintains **working relations with both the US and Iran**, allowing it to act as a **backchannel communication channel**.
- **Strategic Positioning:** Mediation helps Pakistan **restore global diplomatic relevance and strengthen ties with Washington**.
- **Security spillover:** Iran instability may trigger refugee flows and militancy in Pakistan's Balochistan region.
- **Regional Influence:** By hosting negotiations, Pakistan seeks to project itself as a **major geopolitical player in West Asia diplomacy**.
- **Geography:** Shares **~900 km border with Iran**, making instability in Iran a **direct security concern for Pakistan**.
- **Energy Crisis:** Around **85% of Pakistan's energy trade passes through the Strait of Hormuz**, making closure of the strait economically disastrous.

Issues Pakistan Faces in Mediation

- **Credibility Concerns:** Pakistan's **historical ties with the US and Saudi Arabia** may raise doubts about its neutrality.
    - **Saudi Pact:** Pakistan's **mutual defence cooperation agreement with Saudi Arabia** complicating its neutrality toward Iran.
    - **US Linkages:** Although Pakistan **does not host US military bases**, its military uses **US-origin equipment** shaping perceptions of alignment.
- **Domestic Sectarian Sensitivity:** Pakistan hosts the **world's second-largest Shia population after Iran**, making the conflict politically sensitive.
- **Strategic Balancing:** Pakistan has to balance **ties with Iran, Saudi Arabia, China, and the US simultaneously**..
- **Economic Fragility:** IMF dependency limits foreign policy autonomy.

Strategic Implications for India

- **Perception of Diplomatic Absence:** Pakistan's mediation has increased its **visibility in West Asian diplomacy**, while India appears largely absent from direct negotiations.

- It **projects itself as a responsible diplomatic actor**, countering India's narrative of Pakistan as a destabilising state
- India's diminished **role in West Asia**, potentially challenging India's image as a **leading Global South actor**.

REGIONAL CONNECTIVITY SCHEME – MODIFIED UDAN

Context

The Union Cabinet has approved the Regional Connectivity Scheme – **Modified UDAN with an outlay of ₹28,840 crore for 2026–2036.**

Background

- Modified UDAN (Ude Desh ka Aam Nagrik) is the evolved second phase of India's flagship regional airport development program, designed to make air travel sustainable and accessible for the next decade.
- **Launched In:** While the **original scheme began in 2016,** the Modified UDAN was approved by the Union Cabinet on **March 25, 2026, for implementation starting from FY 2026-27.**

Aim:

- The scheme seeks to transform India into a globally competitive aviation ecosystem by connecting underserved regions, reducing travel costs for the common citizen, and supporting the vision of Viksit Bharat 2047.

Key Features:

- **Infrastructure Expansion (CAPEX):** An outlay of **₹12,159 crore to develop 100 airports** from existing unserved airstrips over the next eight years.
- **Modern Helipad Network:** Development of 200 modern helipads at a cost of ₹15 crore each to solve connectivity challenges in hilly, island, and remote areas.
- **Viability Gap Funding (VGF):** A dedicated fund of ₹10,043 crore to provide financial support to airline operators, ensuring routes remain profitable while keeping fares low for passengers.
- **O&M Support:** To ensure sustainability, the government will provide Operation & Maintenance support for three years (capped at ₹3.06 crore/year per airport) for around 441 aerodromes.
- **Atmanirbhar Aircraft Acquisition:** Focused on indigenous manufacturing by procuring HAL Dhruv helicopters and HAL Dornier aircraft for state-run carriers like Pawan Hans and Alliance Air.

About UDAN (Ude Desh ka Aam Nagrik) Scheme

- **Launch:** October 2016.
- **Implementation:** Ministry of Civil Aviation
- **Objective:** Making air travel affordable and accessible to all; strengthening connectivity to Tier-2 and Tier-3 cities.
- **Achievements:**
  - 663 routes have been operationalised across 95 airports, heliports and water aerodromes (as on March 2026).
  - More than 3.44 lakh flights have been operated, carrying over 163 lakh passengers.
  - Connectivity improved in remote, hilly and island regions, supported tourism and emergency services, encouraged the growth of regional airlines.

IMMIGRATION, VISA, FOREIGNERS REGISTRATION & TRACKING (IVFRT) SCHEME

Context

The Union Cabinet has approved the continuation of the **Immigration, Visa, Foreigners Registration & Tracking (IVFRT) Scheme for five years (2026–2031) with an outlay of ₹1,800 crore.**

Background

- The IVFRT is a mission-mode project designed to create a secure, integrated, and service-oriented framework for managing the lifecycle of travelers—from visa application and entry into India to their activities within the country and final exit.
- **Launched In:** The project was originally approved by the **Cabinet Committee on Economic Affairs (CCEA) on May 13, 2010.**
  - The newly approved phase will run from April 1, 2026, to March 31, 2031.
- **Implemented by:** Ministry of Home Affairs (MHA).

Aim:

- The primary objective is to modernize and interlink functions related to immigration, visa issuance, and foreigner registration to facilitate legitimate travelers while strengthening national security and curbing illegal migration.

Key Features:

- **Interlinked Digital Ecosystem:** Connects over 117 Immigration Check Posts (ICPs), 15 FRROs, and 854 Foreigners Registration Offices (FROs) across India into a single global database.
- **Contactless & Faceless Services:** Enables a 100% online visa process with automated appointments and payments; currently, over 91% of e-visas are cleared within 72 hours.
- **Fast Track Immigration (FTI-TTP):** Utilizes automated e-gates at 13 major airports to reduce passenger clearance time from 3 minutes to just 30 seconds for trusted travelers.
- **Technological Innovation:** Introduction of self-service kiosks and mobile-based services to ensure seamless movement without compromising the security architecture.

- **Biometric Integration:** Standardizes biometric capture at all entry points, reducing conventional manual clearance time by nearly 50%.

CORPORATE LAWS (AMENDMENT) BILL, 2026

Context

The Union Cabinet has moved the **Corporate Laws (Amendment) Bill, 2026, in the Lok Sabha, subsequently referring it to a 31-member Joint Parliamentary Committee (JPC)** for detailed scrutiny.

Background

- The Corporate Laws (Amendment) Bill, 2026, is a strategic legislative update designed to modernize the regulatory framework governing Indian businesses by amending the Companies Act, 2013, and the Limited Liability Partnership (LLP) Act, 2008.

Aim:

- The primary objective is to foster a more business-friendly environment in India by reducing the compliance burden and fear of imprisonment for minor mistakes. It seeks to align corporate governance with the current economic landscape and the vision of a Viksit Bharat.

Key Features:

- **Decriminalization of Offences:** Shifts 21 minor/technical offences from a criminal court-based system to an electronic e-adjudication platform where only monetary penalties are levied, removing the risk of imprisonment.
- **CSR Threshold Revision:** Increases the net profit threshold for mandatory Corporate Social Responsibility (CSR) from ₹5 crore to ₹10 crore, exempting many small companies from the 2% spending requirement.
- **Hybrid Meetings:** Enables companies to hold Annual General Meetings (AGM) and Extraordinary General Meetings (EGM) via video conferencing, with a mandatory physical meeting required only once every three years.
- **Extended Timelines:** Increases the time allowed to transfer unspent CSR funds for ongoing projects to a designated bank account from 30 days to 90 days.
- **Self-Declaration Framework:** Replaces several traditional affidavits required under the Acts with simple self-declarations, reducing paperwork and notarization costs.
- **LLP Conversion:** Introduces a new framework allowing specified trusts (registered under SEBI or IFSC) to convert into Limited Liability Partnerships (LLPs).

VARIABLE RATE REPO (VRR) AUCTIONS

Context

The **RBI injected ₹55,837 crore into the banking system via a 3-day VRR auction** to address tightening liquidity.

What is Variable Rate Repo (VRR) Auctions?

- A Variable Rate Repo (VRR) is a monetary policy tool used by the RBI to inject liquidity into the banking system when cash becomes scarce. Unlike the fixed-rate repo, the interest rate in a VRR is determined through a competitive bidding

How does it work?

- **Announcement:** The RBI notifies banks of its intent to lend a specific amount (e.g., ₹1 lakh crore) for a set duration (e.g., 3 days).
- **Bidding:** Commercial banks submit bids stating the amount they want to borrow and the interest rate they are willing to pay.
- **Allotment:** The RBI accepts bids starting from the highest rate offered down to a cut-off rate, which is the lowest rate at which funds are disbursed.
- **Collateral:** Banks provide government securities to the RBI as collateral, which they repurchase (Repo) at the end of the term.

Aim of VRR:

- The primary objective is liquidity management. By infusing cash, the RBI ensures that banks have enough funds to meet daily requirements, preventing the Call Money Rate (the rate at which banks lend to each other) from spiking far above the policy Repo rate.

Key Features of Short-Term VRR:

- **Flexibility:** It targets immediate, temporary deficits (usually 1 to 14 days) caused by seasonal factors like tax payments or festivals.
- **Market-Driven:** The Variable Rate allows the market to determine the cost of funds based on actual demand.
- **Short Duration:** These are tactical tools, unlike Open Market Operations (OMO), which provide long-term durable liquidity.
- **Collateralized:** Like all repo transactions, these are backed by high-quality government bonds.

REFORM EXPRESS INITIATIVE

Context

The Union Railway Minister has announced five new reforms under the Reform Express initiative to modernize cargo and passenger services.

What is it?

- The Reform Express is a comprehensive policy framework launched in 2026 to fast-track the transformation of Indian Railways into a more efficient, transparent, and passenger-friendly network.
- **Organisation Involved:** The initiative is spearheaded by the Ministry of Railways, Government of India.

Key Features:

- **Specialized Cargo Logistics:** Introduction of stainless steel, top-loading, and hydraulic side-discharge containers specifically for salt transportation to prevent wagon corrosion and leakage.
- **Infrastructure Quality Control:** Implementation of stricter contractor eligibility, fixed 2% bid security, and safeguards against predatory bidding (bids significantly below cost) to ensure project durability.
- **Ticketing Integrity:** Removal of nearly 3 crore fake IRCTC accounts and the introduction of Aadhaar-based OTP verification to prevent touts from cornering tickets.
- **Passenger Flexibility:** New rules allowing passengers to change boarding stations or upgrade travel classes digitally up to 30 minutes before departure.

- **Automobile Transport Optimization:** Introduction of flexible wagon designs tailored to specific rail routes to bypass constraints like low bridges and narrow tunnels, increasing the rail share of auto logistics.

Mains Exam Topics

NEED FOR UGC REFORM

Context

The proposed Viksit Bharat Shiksha Adhishthan (VBSA) Bill seeks to replace the existing higher education regulator. While reform of the current system is necessary, concerns have been raised that the new framework may worsen existing problems instead of solving them.

Need for UGC reforms

- **Weak institutional functioning:** The existing regulator has often been criticised for inefficiency and lack of expertise.
    - It struggles to effectively oversee a large number of universities and colleges.
- **Limited autonomy:** Academic bodies have functioned with restricted independence, often influenced by administrative control.
    - This has reduced innovation and flexibility in higher education.
- **Outdated regulatory approach**: The system relies heavily on approvals and inspections, leading to delays and excessive control.
    - Experts have recommended moving towards self-regulation and academic freedom.

Viksit Bharat Shiksha Adhishthan Bill, 2025

About the Bill

- The Bill seeks to establish a single, unified system for regulating higher education in India.
- It is based on Entry 66 of the Union List, which empowers the Centre to coordinate and set standards in higher education and research institutions.

Rationale Behind the Bill

- **Simplification of regulation**: Aims to replace the existing multiple regulatory bodies with a streamlined structure.
    - This is expected to reduce overlap, delays, and confusion in governance.
- **Alignment with National Education Policy (NEP), 2020**: The NEP calls for a complete overhaul of education governance, including regulation.
    - The Bill is intended to implement this vision in a structured manner.

Key features of the bill

- **Creation of a Central apex body:** Establishes the Viksit Bharat Shiksha Adhishthan (VBSA) as the top regulator for higher education.
    - It will provide overall direction and policy guidance, but will not handle funding.
- **The Bill creates specialised bodies for different roles:**
    - **Regulation Council:** Oversees compliance and functioning of institutions.
    - **Accreditation Council:** Assesses quality and performance of institutions.
    - **Academic standards Council:** Sets academic benchmarks and guidelines.
- **Repeal of Existing Laws:** Proposes to replace key existing legislations to mark a shift from the

current fragmented system to a unified structure.
    - University Grants Commission Act, 1956
    - AICTE Act, 1987
    - NCTE Act, 1993
- **Functions of VBSA**: Provide strategic direction for higher education and research.
    - Develop plans to convert institutions into multi-disciplinary universities.
    - Suggest measures to improve quality and outcomes in education.
- **Powers to penalise institutions:** The regulatory body can impose penalties on institutions that violate rules.
    - This is aimed at ensuring compliance and accountability.
- **Appeal mechanism:** Appeals against decisions of VBSA or its councils will lie with the Central Government.
    - This creates a centralised system for dispute resolution.
- **Exemptions**: Fields like medical and legal education are kept outside the scope of the Bill.
    - These will continue to be governed by their respective specialised laws.
- **Proposed professional body:** A Council of Architecture will function as a professional standards body under existing law.
    - It will oversee standards in the architecture field.

Concerns with the new bill

- **Centralisation of power:** The proposed body and its sub-units will be fully controlled by the Central government.
    - This may lead to concentration of authority in one place, reducing institutional independence.
- **Reduced academic autonomy:** Universities and faculty may lose the ability to make independent academic and administrative decisions.
    - This can limit creativity, research freedom, and quality of education.
- **Strong control powers:** The new authority will have powers to penalise institutions, cancel degrees, or even shut down universities.
    - Such wide powers may lead to over-regulation and fear among institutions.
- **Weak federal structure:** State governments, which run a majority of colleges, will have a very limited role in decision-making.
    - This goes against the idea of shared responsibility between Centre and States in education.
- **Lack of clarity on funding**: The Bill does not clearly state how higher education will be financially supported in the future.
    - This raises concerns about reduced public investment in education.
- **Risk of commercialisation:** With less focus on public funding and social responsibility, there is a risk that education may become profit-driven rather than service-oriented.

- **Neglect of equity and access:** The Bill does not adequately address issues of equal access, inclusion, and support for disadvantaged groups.
    - This is critical as many students are first-generation learners.

Existing regulatory framework in India

- **Shared responsibility**: Education falls under the Concurrent List, meaning both Centre and States have roles.
    - However, standards and technical education are largely guided by the Centre.
- **Current apex body**: The University Grants Commission (UGC) regulates funding, recognition, and standards in higher education.
- **Professional regulatory bodies**: Different sectors are governed by specialised bodies:
    - **AICTE**: Technical education (engineering, management)
    - **Other bodies:** National Medical Commission, Bar Council of India regulate specific professions.
- **Accreditation mechanisms**: NAAC and NBA ensure quality assurance in higher education.
    - NAAC evaluates overall institutional quality.
    - NBA accredits specific technical programmes.

Yashpal committee (2009) recommendations

- Suggested a single, independent body to reduce overlap and improve coordination.
- Emphasised upon academic autonomy, reduced bureaucratic control and a strong public funding

Conclusion

While reforming higher education governance is necessary, the proposed framework raises concerns about centralisation, reduced autonomy, and weakening of public purpose. A balanced approach is needed that ensures accountability without excessive control, protects academic freedom, and strengthens equity and public investment in education.

CORRUPTION PERCEPTIONS INDEX 2025

Context

As per the 2025 edition of the Corruption Perceptions Index published by Transparency International, perceptions of corruption in the public sector remain significantly high across the world.

Global corruption trends

- **About the Index:** The Corruption Perceptions Index (CPI) evaluates perceived levels of public-sector corruption using inputs from experts and business executives, rather than relying on officially recorded cases. It assesses nearly 180 countries, offering a comparative snapshot of governance standards and institutional integrity.
- **Methodology**: Countries are rated on a scale ranging from 0 (highly corrupt) to 100 (very clean).
- **Global decline:** The worldwide average score has fallen to a decade-low of 42, with 122 out of 180 countries scoring below 50. Merely five countries have crossed the 80 mark, reflecting a broader weakening of anti-corruption frameworks globally.

- **Underlying causes:** The report attributes rising corruption perceptions to declining democratic accountability, reduced civic freedoms, and the weakening of oversight bodies such as the police, judiciary, and regulatory authorities.

India's corruption paradox

- **Stagnant performance**: India ranks 91st in the 2025 CPI with a score of 39. Over the past decade, its score has hovered between 38 and 41, indicating minimal progress in improving perceptions of public-sector integrity.
- **Growth vs governance gap:** Despite being among the fastest-growing major economies, India continues to face challenges in governance quality. This disconnect highlights a paradox where economic expansion is not accompanied by stronger institutional accountability.
- **Regional position:** With a score of 39, India trails behind China (42) and is only slightly ahead of Sri Lanka (38), reflecting modest regional standing.

Concerns related to corruption

- **Global impact:** Corruption is estimated to cost nearly 5% of global GDP, i.e. around $2.6 trillion annually hampering efficiency and long-term development.
- **Impact on India:** In India, corruption leads to direct losses of approximately 0.5% of GDP and indirect losses of 1–1.5%.
- **Opportunity cost:** These financial losses represent misallocated public resources that could otherwise be invested in essential sectors like healthcare and education.
- **Effect on innovation:** Bureaucratic hurdles and rent-seeking practices deter entrepreneurship, as delays and bribery increase the cost and uncertainty of doing business.
- **"Soft State" concept:** Economist Gunnar Myrdal described countries like India as "soft states," where numerous regulations exist but enforcement is inconsistent and vulnerable to corruption.
- **Over-criminalisation:** India's legal framework includes over 26,000 provisions involving imprisonment for business-related violations, many of which pertain to minor procedural lapses.
- **Regulatory burden**: Even with initiatives like the SHAKTI programme (Union Budget 2026–27), a typical pharma start-up must navigate nearly 1,000 compliance requirements, with around 49% involving potential criminal liability.
- **Cycle of discretion**: Excessive criminalisation increases bureaucratic discretion, fosters uncertainty, and can incentivise bribery, thereby perpetuating corruption.

Reforms

- **JAM Trinity and DBT:** The JAM (Jan Dhan–Aadhaar–Mobile) framework has enabled Direct Benefit Transfers, significantly reducing leakages in schemes such as Mahatma Gandhi National Rural Employment Guarantee Act and the Public Distribution System.
- **Rise of Digital Payments:** As per the RBI Digital Payment Index, digital transactions have surged, reducing reliance on cash since 2018.
- **Digital Governance Platforms:** Systems like the Goods and Services Tax Network and Government e-Marketplace have enhanced transparency, improved traceability, and minimised human discretion in taxation and procurement processes.

Way forward

- **Address structural incentives**: Drawing from Chanakya, governance reforms must recognise that officials handling public resources face inherent temptations, requiring systemic safeguards.
- **Decriminalise minor offences**: Reducing imprisonment provisions for minor compliance violations can limit discretionary power and curb rent-seeking behaviour.
- **Strengthen enforcement**: Faster investigations and judicial processes are essential to ensure timely and credible punishment for corruption.
- **Enhance institutional independence**: Greater transparency and autonomy must be ensured for agencies like the Central Bureau of Investigation and the Enforcement Directorate.
- **Expand digital governance:** Scaling up e-governance and digital public infrastructure can further reduce human discretion, increase transparency, and improve accountability in public administration.