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## Prelims Exam Topics

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### INDIA-UK CETA TO BE ENFORCED FROM 15TH JULY

#### Context

India and the United Kingdom (UK) will implement the Comprehensive Economic and Trade Agreement (CETA) from 15th July, alongside the Double Contribution Convention (DCC) on social security.

#### About India-UK CETA

- **Background:** Groundwork was laid through the India-UK Roadmap 2030 (2021), which elevated bilateral ties to a Comprehensive Strategic Partnership and set a target of doubling trade to USD 100 billion by 2030. The agreement was signed in July 2025.
- **Key Features**
  - Provides India immediate duty-free access on 99% of tariff lines, strengthening competitiveness of Indian exports.
  - Covers all major services sectors and 137 sub-sectors of export interest to India, offering regulatory certainty in financial and professional services among others.
  - Exempts Indian workers and employers from dual social security contributions during temporary UK assignments, with the exemption period extended from 3 to 5 years.
  - Embeds provisions on innovation, sustainability, secure critical supply chains, and technological collaboration.
  - Designed to benefit farmers, fisherfolk, women entrepreneurs, startups, and MSMEs (Micro, Small and Medium Enterprises) through improved access to global value chains.

**Double Contribution Convention (DCC):** A Double Contribution Convention/Avoidance agreement prevents workers on temporary overseas assignments from paying social security contributions in both home and host countries.

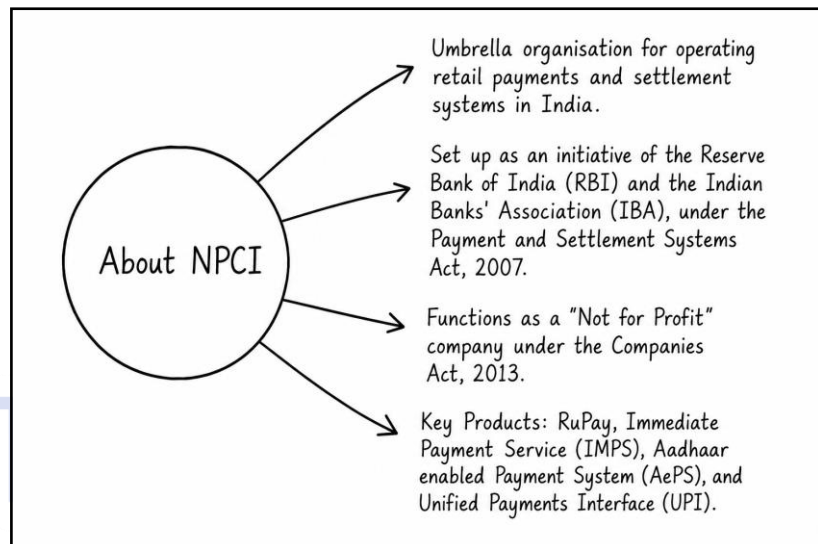
## NPCI ROLLS OUT DRUNIX

### Context

The National Payments Corporation of India (NPCI) has launched Drunix, its second major open-source contribution in the blockchain and tokenisation space. The first was Falcon, which had focused on production-grade blockchain network management and orchestration.

### About Drunix

- An enterprise-grade Distributed Ledger Technology (DLT) built to help organisations create and scale tokenisation platforms, digital asset systems, and networks involving multiple organisations.



- It is a private blockchain framework custom-built by re-engineering **Hyperledger Fabric**

- Hyperledger fabric is an open-source enterprise blockchain framework maintained by the Linux Foundation.

### About Blockchain Technology

- An advanced database mechanism enabling transparent information-sharing within a business network.
- Stores data in chronologically linked blocks; entries cannot be deleted or altered without network consensus.
- **Significance:** Creates an immutable ledger for tracking orders, payments, and accounts, while preventing unauthorised transaction entries.

## About Tokenisation

- Process of converting ownership rights of real-world assets (real estate, commodities, artworks, financial instruments) into digital tokens secured on blockchain networks.
- **Significance:** Democratises access to investment opportunities; enables fractional ownership, enhances liquidity, and streamlines transactions.

## CAG RELEASES STATE FINANCES 2024-25 REPORT

### Context

The Comptroller and Auditor General (CAG) of India has released the State Finances 2024-25 Report. It provides a consolidated fiscal overview of all 28 States with inter-State and intertemporal analysis spanning 10 years (2015-16 to 2024-25).

### Key Highlights of the Report

- **Public Debt and Liabilities:** Combined outstanding public debt of States stood at ₹75.52 lakh crore, amounting to 23.27% of Gross State Domestic Product (GSDP),
  - Total liabilities reached 27.89% of GSDP.
  - Public debt receipts made up over 99% of total capital receipts, reflecting heavy reliance on borrowings to finance expenditure.
- **Fiscal Deficit:** Against the Fifteenth Finance Commission's benchmark of 3% of GSDP, 18 States recorded fiscal deficits exceeding this threshold in FY 2024-25.
  - Fiscal responsibility indicators for 2015-16 to 2024-25 show that all States combined remained in both revenue deficit and fiscal deficit throughout the period.
- **Low Capital Expenditure:** Revenue expenditure accounted for 83.41% of total expenditure in FY 2024-25, while capital expenditure made up only 16.59%
- **Share in Union Taxes:** States' share in devolution of taxes and duties, as a percentage of total combined revenue receipts, rose from 27.73% in FY 2015-16 to 31.76% in FY 2024-25.

- **Subsidies:** Subsidy expenditure remained largely between 8-10% of total revenue expenditure of all States combined over the decade, directed mainly toward energy utilities and agriculture-related activities.

## **TELEGRAM BAN AND SECTION 69A OF THE IT ACT**

### **Context**

The Centre's temporary blocking of Telegram, aimed at curbing a paper leak during the NEET-UG retest, has renewed focus on Section 69A of the Information Technology (IT) Act, 2000.

### **About Content-Blocking Mechanisms in India**

- **Section 69A Route:** Empowers the Union government to direct intermediaries to block public access to any information through any computer resource, including applications and websites.
  - Blocking can be ordered if necessary in the interest of **India's sovereignty and integrity, defence of India, security of the State, friendly relations with foreign states, public order, or to prevent incitement to a cognizable offence.**
  - Orders under this provision must comply with procedural safeguards laid down in the Information Technology (Procedure and Safeguards for Blocking Access to Information by the Public) Rules, 2009.
- **Section 79(3)(b) Route:** Empowers various ministries to directly issue blocking orders to online platforms, most commonly operationalised through the Home Ministry-led **Sahyog portal**.
  - Section 79 of the IT Act provides safe harbour protection to intermediaries, exempting them from liability for third-party content.

### **Constitutional Dimensions associated with Blocking**

- Blocking orders may impinge upon **Article 19(1)(a)**, which protects freedom of speech and expression, and **Article 19(1)(g)**, which guarantees the right to practise any profession or

carry on any occupation, trade, or business.

- In **Anuradha Bhasin v Union of India**, while examining the indefinite blanket ban on internet services in the erstwhile State of Jammu and Kashmir, the Supreme Court held that freedom of speech and expression, and the freedom to practise any profession or trade over the internet, are protected under Articles 19(1)(a) and 19(1)(g).
  - It laid down a proportionality test for such restrictions: they must be necessary, adopt the least restrictive measure available, and remain subject to judicial review.

### PYQ Anchor

**Q. In India, it is legally mandatory for which of the following to report on cyber security incidents? (UPSC 2017)**

1. Service providers
2. Data centres
3. Body corporate

Select the correct answer using the code given below:

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

**Answer: D**

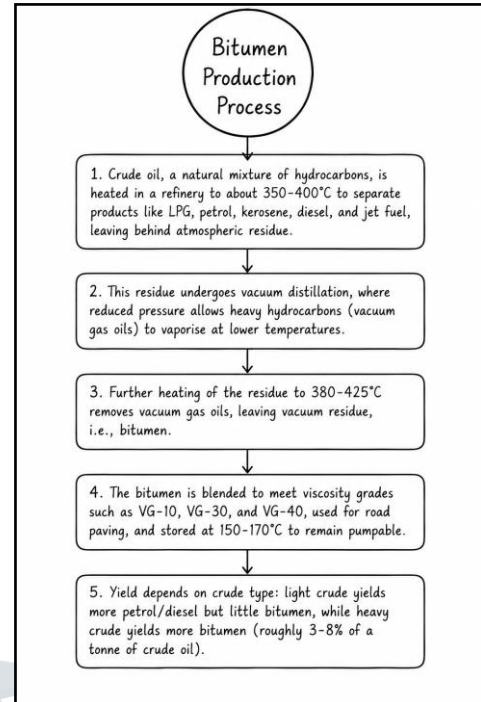
## **BITUMEN**

### **Context**

The ongoing conflict in West Asia has disrupted bitumen imports, raising concerns over supply and prices for India's road construction sector.

### About Bitumen

- A highly viscous, black, sticky mixture of organic liquids, fully soluble in Carbon Disulfide and composed mainly of highly condensed Polycyclic Aromatic Hydrocarbons.
- Derived from crude oil; used as a binder in road construction, holding together sand, gravel, and crushed stone to form asphalt.
- Waterproof, adhesive, and flexible, allowing roads to withstand traffic load and varying weather conditions, hence termed "**black gold**" in the pavement industry.



### India's Import Dependence for Bitumen

- India's annual bitumen requirement is around 90 lakh tonnes, against domestic production of only about 54 lakh tonnes by refiners like Indian Oil and Bharat Petroleum.
- The shortfall is met via **imports**, with over 99% sourced from West Asia: **Iraq, UAE, Iran, Oman, and Bahrain.**
- Rising import dependence is linked to rapid road expansion under schemes like Bharatmala and PMGSY (Pradhan Mantri Gram Sadak Yojana).
  - National Highway length rose 61% (91,287 km to 1.47 lakh km) and expressways grew over 30-fold since 2014

### Bio-Bitumen

- Developed jointly by CSIR-Central Road Research Institute (CRRI) and CSIR-Indian Institute of Petroleum (IIP), Dehradun, to address stagnant domestic bitumen production and rising import dependence.

- Uses rice straw (parali) as feedstock to produce Bio-oil.
- The Bio-oil is further processed and blended to produce bio-bitumen.

## BONN CHALLENGE


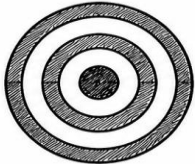


### Context

India restored 21.76 million hectares of degraded and deforested land between 2011 and 2020, as per its second progress report on the Bonn Challenge released jointly by the Ministry of Environment, Forest and Climate Change and the International Union for Conservation of Nature (IUCN).

### About the Bonn Challenge

- A global initiative launched in 2011 by the Government of Germany and IUCN, which also serves as its Secretariat.
- Commits to restoring 150 million hectares of degraded and deforested landscapes by 2020, with an additional target of 350 million hectares by 2030.
- Promotes Forest Landscape Restoration (FLR), a framework prioritising both biodiversity conservation and human livelihoods, coined by IUCN and the World Wide Fund for Nature (WWF) in 2000.

## India's Land Restoration Success

 <p><b>21.7 MILLION HECTARES RESTORED (2011-2020)</b></p> <p>Progress via natural regeneration, agroforestry, and planted forests.</p>	 <p><b>GOAL RAISED TO 26 MILLION HECTARES</b></p> <p>Prime Minister Modi increased India's 2030 target from the original 13 million hectares.</p>	 <p><b>461 MILLION TONNES OF CARBON SEQUESTERED</b></p> <p>Land restoration efforts significantly pull CO<sub>2</sub> from the atmosphere.</p>	 <p><b>TELANGANA LEADS INDIA'S GREEN PUSH</b></p> <p>Telangana topped the nation by restoring 4.18 million hectares, primarily through agroforestry.</p>
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### Key Government Initiatives for Land Restoration

- **Green India Mission (GIM):** Launched in 2014 under the National Action Plan on Climate Change (NAPCC); aims to increase forest and tree cover, restore degraded ecosystems, and improve livelihoods of forest-dependent communities.
- **Ek Ped Maa Ke Naam:** A nationwide tree-plantation campaign promoting ecological balance and gratitude towards mothers.
- **Aravalli Green Wall Initiative:** Launched in 2025 (detailed action plan) to combat desertification across four states by creating a 5 km buffer zone around the Aravalli range, covering 6.45 million hectares, at a cost of ₹16,053 crore.
- **Compensatory Afforestation Fund (CAF) Act, 2016:** Mandates compensation from project developers diverting forest land; has supported afforestation over 3.20 lakh hectares in the past five years.
- **Watershed Development Component of PMKSY (Pradhan Mantri Krishi Sinchayee Yojana):** Aims to restore ecological balance by conserving soil, vegetation, and water resources.

- **United Nations Convention to Combat Desertification:** A legally binding international agreement linking environment and development to sustainable land management.
- **World Day to Combat Desertification and Drought:** Observed on 17th June under the UNCCD; 2026 theme is "Rangelands: Recognize. Respect. Restore."

#### PYQ Anchor

**Q. What is/are the importance/importances of the 'United Nations Convention to Combat Desertification' ? (UPSC 2016)**

1. It aims to promote effective action through innovative national programmes and supportive international partnerships.

2. It has a special/particular focus on South Asia and North Africa regions, and its Secretariat facilitates the allocation of a major portion of financial resources to these regions.

3. It is committed to a bottom-up approach, encouraging the participation of local people in combating the desertification.

Select the correct answer using the code given below:

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

**Answer: C**

## TERMS IN NEWS

### **Downblending**

- A technology used to make uranium less pure by reducing the concentration of uranium-235, thereby increasing the breakout time required to produce a nuclear weapon.
- **Enrichment vs Downblending:** Natural uranium contains only 0.72% fissile uranium-235 (the rest being uranium-238). Enrichment raises this concentration for weapons or reactor use, while downblending dilutes already-enriched uranium back down to lower, non-weapons-grade levels.
- Under the U.S.-Iran memorandum of understanding (MoU), downblending is set to be carried out on-site under International Atomic Energy Agency (IAEA) supervision.

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## Mains Exam Topics

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### CLIMATE CHANGE AS A COST-OF-LIVING CRISIS IN INDIA

#### Context

Climate change is usually seen as a distant 2070 net-zero problem. In reality, it is already raising everyday costs of food, power, water and health, hitting India's poorest the hardest.

#### How Is Climate Change Driving Up the Cost of Living in India?

- **Squeezing Food Budgets:** Heatwaves and weak monsoons damage crop yields and push up food prices, which still carry the heaviest weight in India's CPI basket.
  - *E.g.*, In 2023, a 6% monsoon rainfall deficit cut sown area for pulses and oilseeds, pushing retail prices of rice, wheat and pulses up by 6-15% year-on-year.
- **Inflating Power Bills:** Extreme heat raises cooling demand, straining the grid and forcing utilities to rely on costlier coal and imported fuel, costs that get passed on as higher tariffs.
  - *E.g.*, During the May 2026 heatwave, India's power demand repeatedly touched a record 270.8 GW, driven largely by fans and ACs.
- **Creating a Hidden Water Tax:** Erratic rainfall and groundwater depletion are drying up wells, forcing rural households to spend more time fetching water and urban poor to pay private tanker vendors.
  - *E.g.*, Cities without reliable municipal supply have developed a parallel "tanker economy" that burdens informal settlements the most.
- **Raising Out-of-Pocket Health Spending:** Heat stress, poor air quality and climate-sensitive diseases increase medical costs and wage loss from missed work.
  - *E.g.*, Rural women bear a disproportionate burden, walking longer distances for water and caring for sick family members, losing wages each time.

- **Acting as a Regressive Tax:** The burden falls unevenly, since marginalised castes and tribes are less likely to access irrigation and other adaptive technologies.
  - *E.g.*, Those with more land and capital can absorb climate shocks, while the poor resort to debt, distress migration, or cutting food and education spending.

### Why Does This Matter for India's Growth and Equity Goals?

- **Macroeconomic Drag:** Climate stress is not a one-off shock but a structural drain on growth and living standards.
  - *E.g.*, The World Bank's 2018 report on South Asia's Hotspots projects climate change could shave 2.8% off India's GDP and depress living standards for nearly half the population by 2050, with Chhattisgarh, Madhya Pradesh, Rajasthan, Uttar Pradesh and Maharashtra among the worst-hit hotspots.
- **Compounding Agrarian Distress:** The states identified as climate hotspots overlap with regions already facing low farm incomes, high indebtedness and farmer suicides.
- **Eroding Vulnerable Households' Resilience:** Despite decades of rising median incomes, a large share of Indians remain highly exposed to even small economic shocks, which climate change turns into recurring, structural pressure.

### What Is the Way Forward?

- **Treat Climate Change as a Cost-of-Living Issue:** Move beyond firefighting responses like export bans and ad hoc flood relief toward structural policy recognition of climate-driven inflation.
- **Invest in Climate-Resilient Agriculture:** Scale up low-input, climate-adaptive farming models to cut yield volatility and stabilise food prices.
  - *E.g.*, Andhra Pradesh Community Natural Farming (APCNF) is being used as a scalable model for climate-resilient agriculture.
- **Strengthen Urban Heat Planning:** Mandate Heat Action Plans with cooling shelters, early warning systems and urban greening in heat-vulnerable cities.

- **Expand Universal Basic Services:** Guarantee affordable water, power and healthcare access so climate shocks do not force poor households into debt or distress migration.
- **Redistribute Climate Risk Equitably:** Target adaptation support, irrigation access and credit toward marginalised castes, tribes and small farmers who currently adopt coping technologies the least.

