Today's Prelims Topics

National Skill Development Corporation (NSDC)

Context

Recent developments in NSDC raise questions about the credibility of an agency.

About NSDC

- Established in **2008** as a **public–private partnership (PPP)** company.
- Functions under the **Ministry of Skill Development & Entrepreneurship (MSDE)**. Incorporated as a **Section 25 (not-for-profit) company** under the Companies Act, 1956 (now Section 8 under Companies Act, 2013).
- **Mandate:** To **catalyse skill development** by supporting private sector initiatives and building scalable, for-profit vocational training institutions.
- **Functions:**
  - Supports and regulates Sector Skill Councils (SSCs) (over 30 in number, industry-driven bodies).
  - Implements schemes like Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Udaan, and STAR (Standard Training Assessment and Reward).
  - Sets up India International Skill Centres (IISCs) to train workers for overseas jobs.
  - Develops National Occupational Standards (NOS) and Qualification Packs (QPs) in collaboration with industry.

Issues Associated with NSDC

- CAG Report (2015) highlighted **weak governance and accountability** in NSDC and NSDF (National Skill Development Fund).
  - Recent firing of CEO and FIR complaints of "misappropriation".
- **Poor training standards and mismatch** between training and industry needs.
- Blacklisted centres reported of **tampering attendance records** to falsely show student participation.
- **Placement rates remain poor.**
  - **E.g.,** 1.13 crore certified but only 24.4 lakh placed (~ 21%).
- Allegations of **financial irregularities and mismanagement** within NSDC.

Sources: Indian Express

Foreign Contribution Regulation Act (FCRA) Licence

Context

The Union Home Ministry cancelled the FCRA (Foreign Contribution Regulation Act) licence of the Students Educational and Cultural Movement of Ladakh (SECMOL), founded by climate activist Sonam Wangchuk.

About FCRA

- **Enactment:** First passed in **1976** during Emergency; revised as **FCRA, 2010**.
- **Implementing Authority: Ministry of Home Affairs (MHA)**.
- **Purpose:** Regulates receipt and use of **foreign contributions** by individuals, associations, and companies to safeguard **national security and sovereignty**.
- **Who cannot receive foreign contribution?**
    - Election candidates
    - Members of legislature
    - Political parties & office-bearers
    - Judges
    - Government servants
    - Media persons of specified categories (e.g. editors, publishers, owners of newspapers/periodicals, correspondents, etc.)
- **Exception:** Donations from NRIs through **normal banking channels** are **not foreign contribution**.

Key Amendments

- **2020 Amendment:**
    - NGOs cannot transfer foreign funds to other NGOs.
    - Cap on administrative expenses reduced from **50% ⟶ 20%**.
    - Mandatory to receive funds in **SBI Main Branch, New Delhi**.
    - Aadhaar mandatory for office-bearers.
- **Recent Rule Updates (2024–25):**
    - Mandatory detailed disclosures in FC forms (activity-wise spending).
    - CA must certify compliance with FCRA.
    - NGOs in publications sector must submit additional undertakings.
    - Unspent admin expenses (20% cap) can be carried forward with justification.

Grounds for Cancellation (Sec. 14, FCRA 2010)

- **False Information:** The NGO obtained registration by furnishing **false or misleading information**.
- **Violation of Conditions:** The NGO has violated any terms and conditions of registration or provisions of FCRA, 2010.
- **Public Interest:** The NGO has acted against the **sovereignty and integrity of India, public interest, harmony between groups, or friendly relations with foreign states**.
    - **E.g.,** SECMOL's receipt of ₹4.93 lakh from Swedish NGO Framtidsjorden in 2021–22 for research on migration, food security, and sovereignty was deemed a violation.
- **Non-Operational:** The NGO has not been active for **two consecutive years** in carrying out its activities.

- **Diversion of Funds:** Foreign contributions are being misused or diverted for purposes other than those permitted.

Source: The Hindu

Cancer Burden in India

Context

A **Lancet analysis (2025)** by the Global Burden of Disease Cancer Collaborators shows a sharp global and Indian rise in **cancer cases and deaths**.

Burden of Cancer in India

- **Incidence (2023):** Estimated **5.43 million cases**.
- **Incidence Rate (Age-standardised):**
  - 1990: **84.8 per lakh** ⟶ 2023: **107.2 per lakh** (↑26.4%).
- **Mortality Rate (Age-standardised):**
  - 1990: 71.7 per lakh ⟶ 2023: 86.9 per lakh (↑21.2%).
- **2022 Estimates: 1.4 million cases**, **910,000 deaths** (as per National Cancer Grid).
- **Top cancers:**
  - **Women:** Breast, cervical, ovarian.
  - **Men:** Oral, lung, oesophagus.
  - Overall: Breast, lung, oesophagus, oral, cervical, stomach, colon cancers.
- **Risk factors (India):** Tobacco, poor diet, alcohol use, obesity, air pollution.

Source: Indian Express

Article 304 (a)

Context

The Supreme Court struck down a **2007 Rajasthan VAT exemption** that favoured asbestos sheets and bricks made within Rajasthan, held that it **violates Article 304(a)**.

More in News

- The Court clarified:
  - Incentives for backward areas, if temporary and non-hostile, may be allowed.
  - But here, Rajasthan's notification gave **preferential treatment** only to local manufacturers ⟶ unconstitutional.

What is Article 304(a)?

- A State can tax goods imported from other States **only if**:
  - The same tax applies to **similar goods produced within the State**,
  - And there is **no discrimination** between imported and local goods.

Source: Indian Express

2g Ethanol

Context

India has recently permitted the **export of 2G ethanol**, subject to a mandatory licence and submission of feedstock certificates.

About 2G Ethanol

- Also called **cellulosic ethanol** or **advanced biofuel**.
- Produced from **cellulose-rich plant residues** rather than food crops.
- **Feedstock examples:** Rice and wheat straw, cane trash, corn cobs, stover, and other agricultural waste.
- **Other Generations of Ethanol:**
    - **1G Ethanol:** From food crops such as rice, wheat, corn, barley.
    - **3G Ethanol:** From **aquatic biomass** like algae.
    - **4G Ethanol:** From **genetically engineered plants or microorganisms**.

Source: DTE

Drone Wall

Context

The European Union will proceed with plans to build a "drone wall" after several violations of NATO airspace by unmanned aerial systems.

What is a Drone Wall?

- It is **not a physical wall**, but a **coordinated defense network** along the EU's eastern borders to **detect, track, and neutralize unauthorized drones** before they reach sensitive areas.
- **Components:**
    - **Detection:** Radars, electro-optical sensors.
    - **Electronic warfare:** Jamming systems.
    - **Active defense:** Kinetic interceptors / counter-drones.
    - **Command & Control:** Integrated systems to share real-time data across nations.
- Functions like a missile defense shield (e.g. Israel's Iron Dome) but tailored to **smaller, cheaper, and proliferating UAVs**.
- Initiated by **Baltic states (Estonia, Lithuania)**, strongly backed by **Poland**, now supported by the **EU and NATO**.

Source: Indian Express

Sovereign Mobility Cloud

Context

UAE launches first sovereign mobility cloud to transform autonomous transport

What is a Sovereign Mobility Cloud?

- It's a cloud platform specifically designed for **mobility, autonomous transport, and intelligent transportation systems (ITS)**, with the data and operations governed under national or local sovereignty.
- All mobility-related data (vehicle telemetry, HD maps, traffic signals, sensor data, etc.) is stored and processed within the country's borders under local laws and oversight.
- It combines mobility-focused services (mapping, fleet operations, telematics, traffic management, digital twins) with **principles of data sovereignty, secure infrastructure, and regulatory compliance**.

Source: NewsonAIR

PRAYAS

Context

The Ministry of Ayush inaugurated "Prayas" at the All India Institute of Ayurveda (AIIA), Goa, on the occasion of the 10th Ayurveda Day.

What is Prayas?

- **Type:** First-of-its-kind **multi-disciplinary neuro-rehabilitation centre**.
- **Approach:** Integrates **Ayurveda, Yoga, Physiotherapy, Speech Therapy, Occupational Therapy, and Modern Paediatrics**.
- **Focus Area:** Holistic, patient-centred care for **children with neurological and developmental conditions**.
- **Objective:**
    - Provide integrative rehabilitation and improved quality of life.
    - Pioneer **evidence-based models** combining traditional medicine with modern sciences.
    - Contribute to **research, training, and innovation** in Ayush-based healthcare.

Source: PIB

Chero Archers

Context

The Chero Archers, representing Jharkhand, have been announced as one of the franchises in the upcoming Archery Premier League (APL).

Who are the Chero Archers of Jharkhand?

- **Origin:** The Chero tribe emerged in present-day **Bihar and Jharkhand** after the fall of the Pala Empire (12th–13th century). They later settled in **Palamau, western Jharkhand**.
- Known as fearless archers, they resisted powerful empires with simple bows and flaming arrows.
- Chero women also fought alongside men, and hunting, fishing, and archery were central to their lifestyle.
- **Key Figures:**
    - **Sahbal Rai** – resisted Mughal forces under Jahangir, remembered for his bravery.
    - **Medini Rai ("Chero Napoleon")** – 17th-century folk hero of Palamau, praised for his guerrilla warfare against Mughal generals like Sha'ista Khan and Daud Khan.
    - **Nilamber and Pitamber Rai** – led the Chero revolt against the British during the **1857 uprising**.
- **Legacy:**
    - The Cheros were described by colonial historians as "daring people" who fought fiercely despite basic weapons.
    - Their tradition of resistance and archery became a symbol of tribal identity and pride in Jharkhand

Source: Indian Express

Mahi Banswara Rajasthan Atomic Power Project (MBRAPP)

Context

Prime Minister Narendra Modi laid the foundation of the Mahi Banswara Rajasthan Atomic Power Project.

What is MBRAPP?

- **Location:** Banswara district, Rajasthan (near Mahi River / Mahi-Bajajsagar Dam).
- Largest upcoming nuclear project with **4 × 700 MW pressurised heavy water reactors (PHWRs)** (total **2,800 MW**).
- **Developed by:** Joint venture of **NPCIL (51%)** and **NTPC (49%)** under Anushakti Vidyut Nigam Ltd (ASHVINI).

Nuclear Capacity of India

- As of January 30, 2025, India's nuclear **power capacity stands at 8,180 MW**.
- The **contribution** of nuclear energy in the total electricity generation in the country is **about 3%.**

Source: NewsonAir

Central American Integration System (SICA)

Context

External Affairs Minister S Jaishankar addressed the India-SICA Foreign Minister's Meeting held in New York.

About SICA

- It is an institutional **regional integration framework** in Central American **Isthmus region.**
- **Aim:** Enable the Isthmus of Central America region to become a region of peace, freedom, democracy and development.
- **Establishment**: December **1991** by the signing of the **Protocol to the Charter of Organisation of the Central American States (ODECA) or Tegucigalpa Protocol.**
- **Current members: 8 countries**– Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Belize, Dominican Republic
- **Secretariat:** El Salvador.
- **Presidency**: Presidency of SICA rotates every six months.
- **Summits**: Held twice a year.

Source: Economic Times

MiG- 21

Context

The **Indian Air Force (IAF)** has officially retired its last two **MiG-21 squadrons** (No. 23 Panthers & No. 3 Cobras) in a ceremony at Chandigarh.

About MiG-21

- **Origin:** Soviet-era fighter designed by **Mikoyan-Gurevich Design Bureau**.
- **Induction in IAF:** 1963; served as IAF's **first supersonic jet** and mainstay interceptor.
- **Numbers Procured:** Over **700 aircraft** of different variants.
    - The latest used was the MiG-21 Bison, upgraded with modern avionics and missiles.
- **Contribution:**
    - Played a crucial role in India's wars — 1965 & 1971 wars with Pakistan, 1999 Kargil conflict, and numerous skirmishes.
    - Called the "IAF's workhorse", but also criticised as a "flying coffin" due to high accident rates (over 400 crashes since the 1970s; >200 pilots lost).

Source: Indian Express

Desert Solidification Technology

Context

Wheat has been successfully grown in arid land of Rajasthan's Thar desert (Ajmer district) using desert 'soilification' technology.

About Desert Solidification Technology

- It is a biotechnological innovation that converts barren desert sand into **soil-like material** capable of supporting agriculture.
- **Developed By: Central University of Rajasthan (CUoR)**, with support from **Krishi Vigyan Kendra (KVK)** and the **State Horticulture Department**.
- Aims to **combat desertification**, improve productivity in arid regions, and promote **sustainable land use**.
- Technology: Uses **bioformulations** (with microbes) and **natural polymers**.
    - These bind loose sand particles, improve soil texture, and allow better water retention.
- **How it Works:**
    - **Polymer + Microbes:** Natural polymers and microbial solutions are applied to sandy soil.
    - **Binding Effect:** Polymers cross-link sand grains, creating a soil-like matrix.
    - **Water Holding:** The new structure traps water, cuts irrigation needs, and slows seepage through sand.
    - **Microbial Support:** Beneficial microbes improve fertility, promote plant growth, and increase crop resilience.
    - **Soil-like Qualities:** Modified sand behaves like fertile soil, holding nutrients, supporting microbes, and sustaining crops.

Source: The Hindu

Species in News

Duogong

News? IUCN recognises India's first Dugong Conservation Reserve in Palk Bay

About Duogong

- **Distribution:** Andaman & Nicobar Islands, Gulf of Mannar, Palk Bay, and Gulf of Kutch.
- **Characteristics:**
  - Found in **warm, shallow waters**.
  - Only marine **herbivorous** mammals feed on seagrass.
  - Can live up to 70 years.
  - Very slow reproduction; females calve once every 3–7 years, with long gestation and nursing.
  - "**Gardeners of the sea**," maintaining healthy seagrass beds and supporting biodiversity.
- **Conservation Status:**
  - **IUCN Red List:** Vulnerable.
  - Protected under **Schedule I, Wildlife Protection Act, 1972**.
  - Covered under **UN Convention on Migratory Species (MoU, 2008)**.

Related Facts

- Dugong Conservation Reserve (500 sq.km in Palk Bay, Tamil Nadu) in 2021
- India's current population: ~240 dugongs, mostly in Tamil Nadu's Palk Bay.

Source: Deccan Herald

Mains Topics

India's Indigenous 4G Stack: A Leap Towards Digital Self-Reliance

Context

On BSNL's **25th anniversary (silver jubilee)**, PM Modi inaugurated India's **indigenously developed 4G stack**. This places India among a select group of nations (Denmark, Sweden, South Korea, China) with their own telecom equipment.

What is the 4G Stack?

- A fusion of hardware and software that powers mobile communication - enabling calls, internet connectivity, and data flows.
- Traditionally sourced from global vendors, leaving India dependent on foreign technology.
- BSNL, supported by Indian institutions, built it from scratch during the Covid-19 pandemic.

Key Achievements

- **Development in Record Time:** Built in **22 months** during the Covid-19 pandemic.
    - Collaboration between C-DOT (core network), Tejas Networks (radio access), and TCS (system integration).
- **Scale of Deployment:** Over 92,000 4G sites installed by BSNL.
    - Reached 22 million subscribers, including 2 million first-time internet users.
- **High-Capacity Network:** Capable of handling ~4 petabytes of data per day with high efficiency and security.
- **Global Recognition:** India becomes one of only five nations with end-to-end indigenous telecom stack capability.
    - Countries from Asia, Africa, and Latin America have expressed interest in adopting India's system.
- **Revival of BSNL:** After 17 years of losses, BSNL recorded consecutive profitable quarters, reflecting consumer trust in homegrown technology.

Economic and Strategic Significance

Economic

- **Boost to Atmanirbhar Bharat:** Reduces reliance on foreign vendors (e.g., Nokia, Ericsson, Huawei).
- **Employment & Skills:** Generates jobs in manufacturing, R&D, and software engineering.
- **Ecosystem Growth:** Strengthens domestic telecom equipment industry and supplier chains.
- **Export Potential:** Opens a new frontier for India's **"Local to Global" strategy**, similar to UPI and space tech.

Strategic

- **Digital Sovereignty:** Secures telecom backbone from geopolitical risks and cyber vulnerabilities.
- **Strategic Autonomy:** Reduces dependence on Chinese equipment amid rising security concerns.

- **Soft Power:** Enhances India's global profile as a trusted digital partner, aligning with Vasudhaiva Kutumbakam.
- **Foundation for 5G/6G:** Creates indigenous capacity to scale into next-generation technologies.

Challenges

- **Technology Upgradation:** Global telecom giants already moving to **5G and 6G**, while India is still scaling 4G.
- **Commercial Competitiveness:** Foreign vendors have global supply chains and economies of scale; Indian solutions must match on cost and reliability.
- **Ecosystem Constraints:** Dependence on imported components for semiconductors and high-end hardware.
- **Global Standards:** Ensuring compatibility with international telecom protocols and networks.
- **Private Sector Adoption:** Private telcos (Airtel, Jio, Vodafone) still rely heavily on foreign vendors.

Government Initiatives

- **Atmanirbhar Bharat & PLI Scheme:** Incentives for telecom manufacturing and design in India.
- **Spectrum Policy:** Supporting BSNL's indigenous 4G rollout as a test bed for Indian technology.
- **C-DOT R&D Push:** Funding research for 4G/5G evolution, cybersecurity, and indigenous protocols.
- Global Promotion: Positioning Indian telecom stack as part of Digital Public Infrastructure (DPI) exports alongside UPI and Aadhaar tech.

Way Forward

- **Scale Up 5G & 6G Readiness:** Accelerate R&D to ensure indigenous 5G stack is globally competitive.
- **Strengthen Supply Chains:** Develop domestic semiconductor and component manufacturing under India Semiconductor Mission.
- **Public–Private Partnerships:** Encourage private telecom operators to integrate indigenous stack gradually.
- **Export Strategy:** Use South-South cooperation and partnerships with Africa, ASEAN, and Latin America for telecom diplomacy.
- **Standards Leadership:** Engage with global telecom standard bodies to shape future protocols in India's favour.
- **Continuous Innovation:** Invest in cyber-resilience, AI-driven telecom networks, and quantum communication to stay ahead of emerging challenges.

Source: Hindustan Times