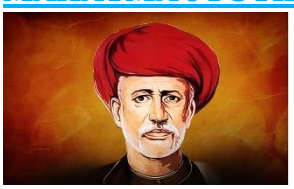
PM-POSHAN SCHEME

- **The PM-POSHAN Scheme**, formerly known as the **Mid-Day Meal Scheme**, is a **centrally sponsored scheme** implemented by the **Ministry of Education**.
- It aims to provide **one hot cooked meal** per school day to **20 crore children** studying in **Balvatikas (pre-primary), and Classes 1 to 8** across **10.36 lakh government and government-aided schools**.
- **The scheme addresses twin objectives**:
  - **Enhancing nutritional status** of school-going children.
  - **Improving enrollment, retention, and attendance** in schools, especially among disadvantaged children.
- The **revised material cost per student per day** is:
  - **₹6.78** for **Balvatika and Primary students** (up from ₹6.19).
  - **₹10.17** for **Upper Primary students** (up from ₹9.29).
- These rates represent the **minimum mandatory contribution**. However, **States and Union Territories can contribute more** from their budgets to provide **meals with higher nutritional value**.
- **Nutritional norms under PM-POSHAN** include:
  - For **Balvatika and Primary classes**: **20g pulses, 50g vegetables, and 5g oil**.
  - For **Upper Primary classes**: **30g pulses, 75g vegetables, and 7.5g oil**.
- **POSHAN Abhiyan** is managed by the **Ministry of Women and Child Development** and aims to **improve nutrition among adolescent girls, pregnant women, lactating mothers, and children (0–6 years)**.
- **Funding Pattern** under POSHAN Abhiyan:
  - **60:40** between **Centre and States/UTs with legislature**.
  - **90:10** for the **Northeastern and Himalayan States**.
  - **100% central funding** for **UTs without legislature**

MAHATMA JYOTIBA PHULE



- **Mahatma Jyotiba Phule (1827–1890)** was a pioneering Indian social reformer, educator, and writer from Maharashtra, renowned for his relentless **fight against caste discrimination and gender inequality.**
- Born on April 11, 1827, in Pune, Maharashtra, **Jyotirao Govindrao Phule belonged to the Mali caste.**
- Despite societal barriers, he pursued **education at the Scottish Mission High School** in Pune, which exposed him to progressive Western ideas that shaped his reformist vision.
- A personal experience of caste-based discrimination at a friend's wedding in 1848 profoundly impacted him and inspired his lifelong fight against social injustices.
- His wife, **Savitribai Phule, became India's first female teacher** and an equal partner in his reforms. Together, they championed women's education and opened the **first school for girls in Pune** in 1848.

Early Inspirations and the Founding of India's First Girls' School

- Phule's transformative journey began in 1848 after facing caste-based humiliation at a Brahmin friend's wedding.
- This pivotal moment ignited his resolve to combat social discrimination. Inspired by missionary Cynthia Farrar and rationalist thinkers like Thomas Paine, Phule, along with his wife Savitribai Phule, **founded India's first school for girls that same year.**
- By the age of 24, he had opened 18 such schools and **several night schools for workers and underprivileged children.**

Satyashodhak Samaj and Fight Against Caste Hierarchy

- In 1873, Phule founded the **Satyashodhak Samaj** (Society of Truth-Seekers), which served as a counterforce to upper-caste-dominated reformist movements like Brahmo Samaj and Arya Samaj.

Views on Social and Agricultural Reforms

- In **Shetkaryanche Asud** (Farmer's Whip), Phule advocated for administrative support to farmers, proposing innovative solutions like:
  - **Employing soldiers in civil works** such as building small dams and bunds
  - **Releasing pasture lands** from forest departments back to villagers
  - Importing cattle for meat to prevent depletion of farming livestock
- These ideas reflected his belief that **agricultural reform was crucial** to breaking the poverty cycle and ensuring food security.

Advocacy for Women and Radical Equality

- Phule's defense of **Pandita Ramabai's religious conversion** and his sharp **critique of polygamy** showcased his progressive stance on women's rights.
- He argued for **gender equality** with the same intensity as caste reform, challenging double standards in religious texts and patriarchal practices.

EXTRADITION OF TAHAWWUR RANA - A DIPLOMATIC AND LEGAL TRIUMPH IN THE 26/11 MUMBAI TERROR ATTACK CASE

- **More than 16 years after the 2008 Mumbai terror attacks**, key conspirator Tahawwur Rana has been extradited to India from the United States.
- His arrival marks **a major milestone in India's counterterrorism efforts** and showcases the **efficacy of sustained diplomatic, legal, and intelligence cooperation** between **India and the US**.

Background - Key Details of 26/11 Mumbai Terror Attacks:

- **Date:** November 26–29, 2008.
- **Casualties:** 166 killed, over 238 injured.
- **Perpetrators:** 10 Pakistani terrorists affiliated with Lashkar-e-Taiba (**LeT**).
- **Targeted sites:** CST railway station, Taj Mahal Hotel, Oberoi Trident, and Nariman House (Jewish Centre).
- **Modus operandi:** Infiltration via sea route from Pakistan.

Who is Tahawwur Rana?

- **Nationality:** Pakistani-born Canadian citizen.
- **Background:** Former officer in Pakistan Army Medical Corps.
- **Association:** Close associate of David Coleman Headley (aka Daood Gilani), key Lashkar-e-Taiba scout.
- **Arrested:** In Chicago, October 2009.
- **Role in 26/11:**
    - **Logistical support:** Facilitated planning and coordination of attacks.
    - **Affiliations:** Linked to LeT and Harkat-ul-Jihadi Islami (HUJI) - both banned under India's **Unlawful Activities (Prevention) Act, 1967.**

What is Extradition?

- **Definition:** Formal process where **one country surrenders an individual to another** country for prosecution or punishment.
- **Key principles:**
    - **Treaty-based:** Usually requires a bilateral or multilateral treaty.
    - **Dual criminality:** Offence must be punishable in both jurisdictions.
    - **Exceptions:** Political offences, lack of good faith, etc.
- **India's extradition framework:**
    - **Extradition treaties:** With 48 countries.
    - **Extradition arrangements (non-binding):** With 12 countries.
    - **Governing agency:** Ministry of External Affairs (MEA).

Challenges in Extradition Process:

- **Lengthy legal procedures:** Rana's case took over a decade to conclude.
- **Political sensitivities:** Extradition often depends on diplomatic relations.
- **Contrast with Headley case:** David Headley's plea deal in the US prevents extradition; serving a 35-year sentence there.

THE ISSUE WITH DELIMITATION'S POPULATION-BASED PROCESS

- **Delimitation,** the redrawing of boundaries of electoral constituencies based on census data, **is a constitutional mandate in India, enshrined in Articles 82 and 170.**
- While the exercise is rooted in democratic principles, **it has sparked widespread debate, ranging from scholarly concerns about constitutional fidelity** to more sensational calls for demographic mobilisation.

Multifaceted Challenges of Delimitation

- **Constitutional Foundations and Contemporary Ironies**
  - The Constitution mandates that **after every census, the number and boundaries of constituencies in both Parliament and State Assemblies must be readjusted** to reflect population changes.
  - However, **through the 42nd Constitutional Amendment in 1976** and subsequent extensions, the **implementation of this provision has been deferred** until after the first census conducted post-2026.
- **Demographic Anxiety and Regional Disparities**
  - **Delimitation based strictly on population figures could advantage states with higher population growth**, predominantly in the north, while penalising states in the south that have successfully implemented population control policies.
  - The **debate thus centres on whether representation should be purely a function of population**, or if federal balance and performance in governance should also factor into electoral design.

Necessary Approach to Address these Challenges

- **Rethinking Representation and Governance**
  - The **current debate forces a re-examination of what it means to represent a constituency**.

- Instead, **strengthening local self-governance and devolving more power to municipal and panchayati raj institutions may be more effective** in enhancing democratic accountability and governance.

- **Need for Deeper Structural Reforms**
  - The **burden on MPs and MLAs** as representatives in overpopulated constituencies **has increased disproportionately.**
  - This **calls into question whether merely increasing the number of representatives will resolve governance challenges** or whether deeper structural reforms are needed.
- **Towards a More Equitable Framework**
  - The **primacy of population as the sole criterion for representation must be moderated,** especially since population control has been a deliberate policy goal of the central government.
  - Penalising states for succeeding in this objective creates a paradox.

Conclusion

- **Delimitation is not merely a technical exercise but a deeply political one**, with profound implications for national unity, federal balance, and democratic representation.
- While **population must remain a cornerstone** of representation, **it cannot be the sole determinant.**
- **A nuanced approach that incorporates demographic trends**, governance performance, and regional equity is
- **India must engage in a robust, inclusive debate to ensure that the next round of delimitation strengthens the democratic fabric** rather than frays it.

SUNBIRD

- **Sunbird** could potentially reach speeds of up to **805,000 km/h**, which is **faster than the Parker Solar Probe** (692,000 km/h), currently the **fastest human-made object**.

- This technology, if successful, could enable missions to **Pluto in just 4 years** and cut travel time to **Mars by nearly half**.

- It aims to **revolutionize interplanetary travel** by drastically reducing travel time to distant planets like **Mars and Pluto**.
- An **orbital demonstration** is scheduled for **2027**, marking a major milestone in space propulsion technology.

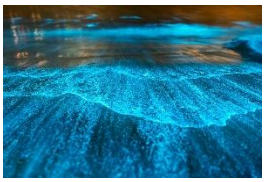
What is Nuclear Fusion?

- **Nuclear fusion** replicates the **energy generation process of stars**, fusing atoms to release energy.
- Unlike **fission**, fusion is **cleaner** and offers **higher energy output** with **lower radioactive waste**.

Two Main Concepts in Nuclear Propulsion

Nuclear Thermal Propulsion (NTP)	**Nuclear Electric Propulsion (NEP)**
- Uses a **nuclear reactor** to heat **liquid hydrogen (LH_2)**. - The hydrogen turns into **plasma** and is expelled through **nozzles** to generate thrust. - Offers **higher exhaust velocity** and can **double or triple payload capacity** compared to chemical rockets. - Earlier **ground tests began in 1955**, making it a **well-researched concept**.	- Converts heat from a **nuclear reactor** into **electrical energy**. - Powers **ion thrusters**, which slowly build high speeds over long durations. - Components include: • **Compact reactor core** • **Electric generator** • **Heat rejection system** (e.g., heat pipes) • **Electric propulsion system** (thrusters) - It can also work with **solar panels,** but a nuclear source ensures **consistent energy** beyond Mars

BIOLUMINESCENT BACKWATERS



- **Bioluminescence** refers to the **natural emission of light** by organisms such as **bacteria, fungi, and algae** triggered by **mechanical disturbances** in coastal and estuarine waters.
- The species most commonly responsible is **Noctiluca scintillans**, a type of **dinoflagellate plankton**, also known as **"sea sparkle"**.
- This glow results from **chemical reactions** inside specialized structures called **scintillons** and appears primarily **blue** but can also show **red or brown hues** depending on species concentration.
- The phenomenon is commonly observed from **March to May**, locally termed as **"Kavaru"** in Malayalam.

Scientific Background

- **Eutrophication**—caused by **nutrient overload** (especially **nitrates** and **phosphates**) from **industrial runoff** and **sewage discharge**—is a major driver.
- When concentrations exceed **500,000 organisms per litre**, it leads to **red tides**, which can severely disrupt marine ecosystems.

Ecological and Economic Impacts

- **Plankton**, while a key part of **marine food chains**, in large numbers release substances like **dimethyl sulphide**, **ammonium**, and **dissolved organic carbon**, causing **Harmful Algal Blooms (HABs)**.
- HABs lead to **hypoxia** (oxygen depletion), resulting in **mass fish mortality** and affecting **biodiversity** and **aquaculture**
- **Fishing communities** experience significant losses as **fish migrate away** from bloom-affected zones, leading to **declining catches** and **reduced income**.
- **Toxins** such as **domoic acid** & those from **Alexandrium** can cause **amnesic** or **paralytic shellfish poisoning**, harming both marine life and **human health**.

BLUE WASHING

- 'Blue Washing' refers to the practice of **portraying polluting industries as environmentally friendly** by categorising them under **less polluting or cleaner industry labels.**
- This term is now used to describe the reclassification of **highly polluting Waste-to-Energy (WTE) incineration industries** by the Central Pollution Control Board **(CPCB) into the new 'Blue Category'.**

Blue Category

- The **'Blue Category'** is introduced as part of a subset of EES activities like **composting, biogas plants, sewage treatment**, and **material recovery facilities**.
- **Waste-to-Energy (WTE) incineration**, previously under the **'Red Category'** with a **Pollution Index (PI) of 6**, is now **reclassified as a 'Blue Category'** industry.

What is WTE Incineration?

- **WTE incineration burns mixed municipal solid waste (MSW)** to produce **heat and electricity**.
- It generates energy through **turbine-driven steam**, similar to coal plants, but emits **more CO_2**

About Pollution Index (PI)

- **The Union Ministry of Environment, Forest and Climate Change (MoEFCC)** introduced a **PI** to categorise industries based on pollution levels.
- PI is calculated on the basis of **emissions** (air pollutants), **effluents** (water pollutants), **hazardous waste,** and **resource consumption.**
- PI ranges from **0 to 100,** with industries classified as:
    - **White Category (0–20)**: Least polluting
    - **Green Category (21–40)**
    - **Orange Category (41–59)**
    - **Red Category (60–100)**: Most polluting.