1 How the Mahad Satyagraha(s) shaped constitutional discourse

Why is this in news?

- New academic work is re-centering **Mahad** (1927) as one of India's **earliest organised human rights movements**, led by **Dr. B. R. Ambedkar**.
- It shows how Mahad influenced:
    - India's **constitutional value system**,
    - Ideas of **democratic access to water**,
    - The project of **destroying caste** and advancing **gender equality**.
- **25 December** (Manusmriti Dahan) is increasingly commemorated as a kind of **Indian Women's Liberation Day** in Ambedkarite and feminist circles.

Relevance

GS–1 (Society & Social Movements)

- Caste hierarchy, untouchability, anti-caste struggles.
- Roots of **Dalit and social justice movements**.
- Interlinkages of caste and gender oppression.

GS–2 (Polity & Constitution)

- Evolution of **constitutional morality**.
- Intellectual foundations of **Article 17**, equality, dignity, and Fundamental Rights.
- Ambedkar's contribution to human rights and constitutional thought.

Basic understanding

- **Mahad Satyagraha (1927)**: Ambedkar led Dalits to drink water from the **Chavadar Tank** at Mahad to assert their right to use **public water sources**.
- It was built upon the **1923 S. K. Bole Resolution**, which had formally allowed "untouchables" to use public tanks.
- Marked a **shift** from upper-caste "reformist benevolence" to **assertive, rights-based mobilisation** by oppressed communities themselves.

Social and regional background

- Mahad, in the former **Bombay Presidency**, was characterised by **rigid caste practices** and denial of basic civic amenities like public water to Dalits.
- Yet it had a **reformist legacy**, with figures such as **Gopalbaba Walangkar, N. M. Joshi, Sambhaji Gaikwad, and later R. B. More**.
- Local confrontations at **Goregaon** and **Dasgaon** revealed early resistance by untouchable communities to caste exclusion.

The S. K. Bole Resolution (1923)

- Proposed that communities then treated as "untouchable" be allowed to use **all public water bodies** financed or maintained by public funds.
- Directly questioned **Brahmanical monopoly** over public/common resources.
- Gave Ambedkar a **legislative and legal anchor** for the Mahad struggle.

Mahad 1.0 (19–20 March 1927)

- Thousands of followers accompanied Ambedkar to **practically enforce** their right to water.
- Despite the 1923 resolution, local dominant castes **prevented access** to the tank.
- Dalits reportedly paid around **₹40** to buy water, underscoring the severity of their exclusion.
- Upper castes subsequently performed **"purification" rituals** of the tank after Dalits touched the water.

Significance

- Marked one of the **first mass political assertions** of dignity, equality, and human rights by Dalits in modern India.
- Ambedkar likened the moment to the **French Revolution** in terms of its transformative moral and political significance.

Between Mahad 1.0 and 2.0

- A court stay was obtained on the grounds that the tank was **privately owned**, effectively blocking Dalit access through law.
- Ambedkar launched the periodical **Bahishkrut Bharat**, where he articulated a vocabulary of **democracy and human rights**.
- Violent backlash in the region led to the formation of the **Ambedkar Seva Dal** for organisation and protection.
- Ambedkar also undertook the **Ambabai Temple Satyagraha**, further challenging religious exclusion.

Mahad 2.0 (25–26 December 1927)

- Because of the pending court case, Ambedkar **did not repeat direct water satyagraha**.
- Instead, the meeting turned into a **philosophical and political convention**.
- The gathering publicly **burned the Manusmriti**, symbolically rejecting Brahmanical patriarchy and graded inequality.
- Ambedkar directly addressed **women**, making gender central to the conversation on **human rights and liberation**.

Ambedkar's gendered imagination of the nation

- In his **1916 paper**, Ambedkar had argued that the caste system survives by **controlling women's sexuality and mobility**.

- At Mahad 2.0, women and men assembled together as **co-equal actors**, almost like a proto-**National Assembly of the oppressed**.
- Unlike the **French Revolution**, where women were sidelined, Mahad **corrected this democratic deficit**.
- Rights were expressed through **Buddhist ethical language**:
    - *maitri* (fellowship),
    - *manuski* (humanity),
    - liberty, equality, and fraternity.

Intellectual significance

- Mahad reframed political struggle as **human rights activism**, not a plea for upper-caste charity.
- Key ideas that crystallised:
    - Dignity as a **non-negotiable** right,
    - Equality as **autonomous** from religious sanction,
    - Fraternity as a **practical social ethic**,
    - Wholesale rejection of scriptures that **justify hierarchy**.
- These principles became the ethical underpinnings of:
    - **Article 17 (abolition of untouchability)**,
    - **Constitutional morality**,
    - The **Fundamental Rights** architecture.

Why Mahad is a turning point

- One of the **earliest organised human rights movements** in modern India.
- Introduced the idea of **water as a democratic entitlement**, not a charity.
- Brought **women firmly into the rights discourse**, foreshadowing later constitutional feminism.
- Converted the anti-caste struggle into a **constitutional–ethical project**.
- Provided Ambedkar with a **conceptual and moral base** to envision a republic grounded in **dignity, equality and fraternity**.

2. U.S. Deportations of Indian Nationals

Why is this in news?

- The External Affairs Minister informed the **Rajya Sabha** that **3,258 Indian nationals** were deported from the **United States in 2025**, the highest annual figure since 2009.
- The case of **73-year-old Harjit Kaur**, who was allegedly mistreated in U.S. immigration detention, has sparked questions on:
    - Treatment of deportees,
    - Safety of women and elderly migrants,
    - Quality of India–U.S. cooperation on migration issues.
- Deportations have surged after a **new U.S. policy (April 2025)** that led to visa cancellations and pressure on students to **"self-deport"**.

Relevance

GS–2 (International Relations)

- India–U.S. engagement on **migration, consular access and human rights**.
- Tension between **state sovereignty** in immigration and **human rights obligations**.
- Issues concerning the **Indian diaspora**.

GS–2 (Governance)

- Responsibility of the Indian state towards citizens abroad.
- **Data and social media surveillance** in visa vetting.
- Legal processes around deportation and procedural safeguards.

Key facts

- **Total deported Indians (2009–2025):** 18,822.
- **Deportees in 2025:** 3,258 (highest in 16 years).
- Mode of deportation:
    - 2,032 persons (~62.3%) on **commercial flights**,
    - 1,226 persons (~37.6%) on **ICE/U.S. Customs charter flights**.
- India has formally raised the issue of **ill-treatment in detention**.
- U.S. visa checks have intensified:
    - Applicants asked to keep **social media profiles public**.
    - Minor infractions can trigger **visa cancellation**.
    - Many students report being **pressured to leave voluntarily**.

Background: Why deportations are rising

- Stricter vetting linking even **small legal/administrative violations** to immigration risk.

- Post-pandemic restructuring of labour markets and heightened **domestic political pressure** on migration in the U.S.
- Increased **digital surveillance**, including scrutiny of online and social media activity.
- Tighter enforcement of **student visa compliance**, to curb misuse of F-1 visas.

Case study: Harjit Kaur (73)

- Not shackled, but reportedly **mistreated** while in ICE custody prior to deportation.
- Problems reported:
    - Slept on the floor despite **double knee replacement**,
    - Inadequate food and medical support,
    - Given only ice packs instead of proper medication support,
    - Kept in uncomfortable detention conditions for **60–70 hours**.
- India strongly raised her case with U.S. authorities and the U.S. Embassy, highlighting **humanitarian concerns**.

Major issues emerging

1. **Treatment of deportees**
    - Reports of harsh conditions for **women, elderly and vulnerable** migrants.
    - Raises questions about compliance with **international human rights and detention standards**.
2. **Student visa vulnerability**
    - Minor rule violations leading to **visa cancellations**.
    - Pressure to **self-deport** can undercut due process and appeal rights.
    - Serious implications for India's large student population in the U.S. (est. **2.7 lakh+**).
3. **Sovereignty vs. diplomacy**
    - Visa decisions are a **sovereign prerogative** of the U.S.,
    - But India has space to raise issues of:
        - Detention conditions,
        - Non-discrimination,
        - Transparency of deportation processes.
4. **Expansion of surveillance**
    - Mandatory public social media access points to:
        - More **data-heavy vetting**,
        - Lower privacy thresholds,

- Risk of **over-reliance on digital footprints**.

5. **Humanitarian dimension**
    - Elderly migrants, women, undocumented workers most at risk.
    - Charter flights often indicate **large-scale removals** after longer detentions.

Implications for India–U.S. relations

- Migration is becoming a **sensitive fault line** alongside trade, defence and technology.
- India must carefully:
    - Safeguard its citizens' **rights and dignity**,
    - Acknowledge U.S. immigration laws,
    - Push for **due process** and humane treatment.
- Possible cooperative mechanisms:
    - Strengthened **consular access** rules,
    - Agreed **standards for detention and medical care**,
    - Better **advance notification** before deportation, especially in vulnerable cases.

3. Digital Addressing Reform: DHRUVA and DIGIPIN

Why is this in news?

- The **Department of Posts** has released a draft amendment to the **Post Office Act, 2023**, proposing a new **digital addressing framework** named **DHRUVA (Digital Hub for Reference and Unique Virtual Address)**.
- The idea is to convert traditional addresses into **UPI-style digital labels** (e.g., name@entity) that can be used across platforms.
- The proposal builds on **DIGIPIN**, introduced earlier in March 2025, which provides a precise **geo-coordinate–based digital PIN**.

Relevance

GS–2 (Governance)

- **Digital Public Infrastructure (DPI)** and data governance.
- Consent-based digital architecture and privacy.
- Modernising citizen service delivery and address systems.

GS–3 (Economy & Technology)

- Improving logistics and **e-commerce efficiency**.
- Standardising geolocation and digital mapping.
- Supporting gig economy and delivery platforms.

GS–3 (Disaster Management)

- Reliable last-mile location identification for **emergency services**.
- Strengthening address datasets for **disaster response and relief**.

Basic understanding

- **DHRUVA** is a proposed, **interoperable, user-centric digital addressing system**.
- Every user can obtain a **digital address label**, functioning like a UPI handle, which **points to their actual physical location**.
- Service providers can access the underlying address **only through consent-based mechanisms** mediated by **Address Information Agents (AIAs)**.
- It is meant to reduce repeated manual entry of addresses for:
    - Online shopping,
    - Food / parcel delivery,
    - Gig work platforms,
    - Government schemes and services.

Key features of DHRUVA

1. **Address as a digital label**
    - Users can pick easy-to-remember labels such as user@post similar to **UPI IDs**.
    - These labels replace long textual addresses when interacting with services.
2. **Consent-driven access**
    - The user authorises a company or department to access the real address for a **specified period**.
    - Once the time window ends, the entity must obtain **fresh consent** for further access.
3. **Institutional structure**
    - A **Section 8 not-for-profit company** would run the DHRUVA system under government oversight.
    - Modelled on bodies like **NPCI**, which governs UPI.
4. **Role of private sector**
    - E-commerce firms, logistics providers, gig platforms and hyperlocal apps are expected to be **early adopters**, integrating DHRUVA into their systems.

DIGIPIN – the underlying technology

- **DIGIPIN** is a **10-character alphanumeric code** derived mathematically from latitude–longitude coordinates.
- Each DIGIPIN corresponds to an area of roughly **14 square metres**, enabling **high spatial precision**.
- Designed for places where:
    - Textual addresses are missing or confusing,
    - Rural or informal settlements lack conventional house numbers.
- Potential capacity: around **228 billion unique DIGIPINs** across India.
- Developed by the postal department and released as **open-source** to facilitate adoption and interoperability.

Why this system matters

Limitations of current addressing

- Inconsistent, non-standard and often incomplete addresses.
- Frequent delivery failures, delays, and misroutes.
- Weak address databases for **governance and emergency response**.

Expected advantages of DHRUVA

- Uniform address standard across private and public sectors.
- Faster onboarding for online services and deliveries.
- Reduced user friction: no need to repeatedly type long addresses.
- Scope for integration into **India's DPI ecosystem** (like UPI, Aadhaar, ONDC).

Consent and privacy safeguards

- Users retain control over **who sees their precise address** and **for how long**.
- AIAs act as **intermediaries**, separating the label from the raw geo-coordinates.
- Architecture aims to minimise **centralised misuse or over-collection of location data**.

Challenges and open questions

- Adoption depends on **voluntary uptake by private players**—network effects will be crucial.
- Strong **cybersecurity and data protection** mechanisms are required to prevent geolocation abuse.
- Public trust needs to be built around the **consent workflows**.
- Integrating DHRUVA/DIGIPIN with existing **state and local address records** may be technically and administratively complex.

4. Airborne Microplastics in India

Why is this in news?

- Over **80 Padma awardee doctors** have issued a joint **national advisory** warning that **airborne microplastics and nanoplastics** are emerging as a major health hazard in India.
- They call for urgent government action given:
    - Rising air pollution levels, and
    - Growing evidence of plastic particles entering the human body and contributing to:
        - Cardiovascular disease,
        - Diabetes and insulin resistance,
        - Chronic inflammation and organ damage.
- The advisory frames the problem as a shift from **seasonal smog** to a **year-round health emergency**, disproportionately affecting infants, older persons, pregnant women and those with pre-existing conditions.

Relevance

GS–3 (Environment)

- Emerging pollutants and contaminants.
- Links between **waste mismanagement** and atmospheric pollution.
- Environmental determinants of health.

GS–2 (Health)

- Environment-linked NCDs (cardiac, metabolic, endocrine).
- Public health warnings, policy gaps, and regulatory intervention.
- Protection of vulnerable groups.

Basic understanding: What are airborne microplastics?

- **Microplastics**: plastic pieces smaller than 5 mm; **airborne microplastics** and nanoplastics can be **<10 microns**, small enough to penetrate deep into lungs and even enter the bloodstream.
- Main sources:
    - Wear and tear of **vehicle tyres**,
    - Road and construction dust,
    - Fragmentation of discarded plastic waste,
    - **Synthetic textiles** (clothing, furnishings),

  - Industrial processes.
- Once in the air, they mingle with **PM2.5 and other fine particles**, increasing the health burden of ambient pollution.

Key scientific concerns flagged by doctors

Exposure and body infiltration

- Very high concentrations detected in **traffic-heavy zones** (e.g., Delhi), possibly among the highest globally.
- Particles smaller than 10 microns can:
  - Reach the **deep lung**,
  - Cross into the bloodstream,
  - Deposit in major organs.

Vehicles for pathogens and chemicals

- Microplastics can act as carriers for:
  - **Bacteria and viruses**,
  - Toxic chemicals and heavy metals adhered to their surfaces.

Direct health effects

- Persistent:
  - Inflammation and oxidative stress,
  - Tissue and organ injury,
  - Hormonal disruption and endocrine interference,
  - Disturbance of the **gut microbiome**,
  - Possible **neurotoxicity**.

Emerging medical linkages

1. **Cardiovascular disease**
   - Studies suggest exposure is associated with increased risk of **heart attacks and strokes**.
   - One cited cohort showed up to **4.5 times higher stroke risk** within 3 years at elevated exposure levels.
2. **Diabetes and metabolic disorders**
   - Doctors highlight a strong correlation between **air pollution, microplastics and rising diabetes**.
   - India already has over **10 crore diabetics** and around **3 crore pre-diabetics**.
   - Chronic inflammation and endocrine disruption due to microplastics may be an **underrated risk factor**.

3. **Insulin resistance**
    - Microplastics and associated chemicals (such as **BPA**) are linked to impaired glucose metabolism and insulin signalling.
4. **Immune and hormonal disruption**
    - Long-term exposure damages cellular processes and increases susceptibility to **chronic diseases**.

Structural and environmental sources

- **Urban hotspots**: High levels in markets, main roads, industrial corridors, and construction-heavy areas.
- **Indoor environments**: Indoor air can also be heavily contaminated by:
    - Synthetic fibres from carpets, upholstery, curtains, clothing,
    - Dust from plastic-containing products.
- Microplastics are **persistent**; they do not degrade quickly and can accumulate in the body over time, increasing chronic disease risk.

Why doctors call it a "crisis at unmanageable scale"

- Microplastics now pervade **air, water, food and indoor spaces** simultaneously.
- Their small size, chemical complexity and persistence make them hard to:
    - Detect,
    - Filter out,
    - Regulate effectively.
- India's pre-existing **air pollution crisis** multiplies the impact.
- The most vulnerable—infants, children, elderly, pregnant women—have **lower physiological resilience** and higher risk.

Advisory recommendations

Household level

- Use **air purifiers** where feasible.
- Reduce everyday plastic usage.
- Regularly mop/wet-wipe surfaces to minimise dust.
- Avoid **heating/microwaving food in plastic containers**.
- Improve **kitchen and indoor ventilation**.

Community level

- Raise awareness about clean indoor air.
- Strengthen **solid waste management** to prevent plastic litter from breaking into micro fragments.

- Promote sustainable alternatives to **single-use plastics**.

Policy level

- Officially recognise microplastics as a **pollutant category** in air quality management.
- Upgrade monitoring networks (like AQI) to measure **microplastic load**.
- Support **R&D** for:
    - Health impact studies,
    - Filtration and mitigation technologies,
    - Policy design.

5. India's Rising Road Fatalities

Why is this in news?

- The Union Minister for Road Transport and Highways has informed the **Lok Sabha** that **1.77 lakh people** died in road crashes in **2024**, a **2.31% increase** over 2023.
- India is **off-track** on its commitment under the **Stockholm Declaration (2020)** to **halve road traffic deaths by 2030**.
- With **4.80 lakh accidents in 2024**, the upward trajectory in crashes has resumed after a temporary dip during the pandemic.

Relevance

GS–2 (Governance)

- Public safety and enforcement of laws.
- Implementation of the **Motor Vehicles (Amendment) Act, 2019**.
- Centre–State coordination in road safety strategies.

GS–3 (Infrastructure & Economy)

- Transport infrastructure and logistics.
- Economic impact of accidents (estimated at ~**3% of GDP**).
- Role of **technology** (e-DAR, ITS, etc.) in improving safety.

Basic understanding

- India records the **highest number of road traffic deaths** in the world.
- Road safety policy stands on the **"4 Es"**:
    1. **Education** – awareness and behaviour change,

2. **Engineering** – safer roads and vehicles,
3. **Enforcement** – effective implementation of traffic laws,
4. **Emergency care** – timely and adequate trauma response.

- India has **persistent weaknesses** across all four pillars.

Key facts from the report

Fatalities (2023 → 2024)

- 2023 deaths: **1,72,809**
- 2024 deaths: **1,77,177**
- Increase: **2.31%**

States with highest fatalities (2024)

- Uttar Pradesh – **24,118**
- Maharashtra – **17,870**
- Tamil Nadu – **16,932**
- Madhya Pradesh – **12,987**
- Karnataka – **11,727**

Global comparison

- India leads the world in **absolute number of road deaths**, followed by China and the U.S.
- Accident death rate:
  - India: **~43.4 deaths per lakh population**
  - U.S.: ~11.89
  - U.K.: ~3.13

Why are fatalities going up?

1. **Rapid motorisation, lagging safety infrastructure**
   - Sudden growth in vehicle ownership, especially **two-wheelers**, without parallel safety design.
   - Poorly designed junctions, lack of safe **pedestrian and cycling infrastructure**.
2. **Weak enforcement**
   - High prevalence of:
     - Overspeeding,
     - Drunk driving,
     - Helmet and seat-belt violations,

        - Distracted driving (phones, in-car entertainment).
    - Inconsistent and often low-intensity policing.
3. **Engineering and design defects**
    - Persisting blackspots not rectified.
    - Inadequate signage, poor maintenance, missing crash barriers.
4. **Behaviour and culture**
    - Normalisation of risky driving, aggressive behaviour, and **fatigue among commercial drivers**.
5. **Emergency care gaps**
    - Inadequate **golden-hour response**,
    - Patchy trauma-care systems and referral networks.
6. **Post-pandemic rebound**
    - After the 2020–21 reduction in traffic, vehicle volumes and speeds **spiked again**, often without equivalent safety measures.

Government's stance and ongoing initiatives

- **Budgetary allocation**: 2.21%–5.10% of total development expenditure for National Highways is being set aside for **road safety measures**.
- **e-DAR (electronic Detailed Accident Report)**:
    - Digital platform for real-time accident data entry by police.
    - Still being stabilised and scaled.
- **Toll and traffic modernisation**:
    - Plan to replace existing toll systems with a **more advanced electronic mechanism** within a year.
- **New road safety system**:
    - Already implemented in **10 locations**, with plans for nationwide scale-up.
- **Cleaner vehicle push**:
    - Exploration of **biofuels, green hydrogen**, and vehicles like Toyota's **Mirai fuel-cell car**.

Structural policy gaps

- No unified **National Road Safety Authority** with overarching mandate.
- Fragmented responsibilities between **Centre, States, municipalities, and police**.
- Weak monitoring of **post-crash care** and trauma facilities.
- Uneven implementation of the **Motor Vehicles (Amendment) Act, 2019**—many States have not enforced higher penalties.

- Discrepancies between **police data** and **hospital/emergency records**, affecting accurate planning.

Why India is missing the 2030 Stockholm goal

- Instead of declining, fatalities are still rising.
- Behavioural change is slow; road culture remains risky.
- Enforcement levels differ widely across States.
- **Vehicle safety standards** are not uniformly enforced, especially for 2- and 3-wheelers.
- High-speed corridors and expressways are expanding faster than **safety systems and awareness**.

6. Flex Fuel Vehicles After E20 Rollout

Why is this in news?

- With **E20 fuel** (20% ethanol–80% petrol) now mandatory nationwide, **Toyota Kirloskar Motor** country head **Vikram Gulati** has argued that India's next policy focus should be the **promotion of Flex Fuel Vehicles (FFVs)**.
- He points out that globally, countries move towards FFVs **after stabilising lower ethanol blends**, and India is now at that stage.
- The debate is tied to India's goals of:
    - Cutting **crude oil imports**,
    - Boosting the **ethanol and agri-economy**,
    - Reducing **transport emissions**.

Relevance

GS–3 (Economy)

- Import substitution and **energy security**.
- Ethanol blending and alternative income streams for farmers.

GS–3 (Environment & Climate Change)

- Low-carbon transport pathways.
- National Biofuel Policy and **lifecycle emissions**.

GS–3 (Science & Technology)

- Engine and materials technology for **ethanol compatibility**.
- Transition technologies in the auto sector.

What are Flex Fuel Vehicles (FFVs)?

- **FFVs** are vehicles designed to operate on **any mix** of petrol and ethanol—commonly from **E20 up to E85 or even E100**, depending on the model.
- Their **engine, fuel lines, sensors and control electronics** are specifically adapted for high ethanol content.
- Ethanol generally:
    - Has a higher **octane rating**,
    - Emits less net greenhouse gases,
    - Can be cheaper than petrol in countries with strong biofuel systems.

India's current status: E20 rollout

- India mandated **E20-compatible vehicles** from 2023; fuel availability is gradually scaling up across the country.
- E20 lowers emissions and fuel import bills, but requires **material and design changes** in vehicles and fuel systems.
- Gulati notes that once E20 is in place and stable, global patterns suggest the **next logical step is FFVs**.

Why push for flex fuels now?

1. **International experience**
    - Countries like **Brazil** moved to large-scale FFV adoption after firmly establishing ethanol blends.
    - Brazil keeps **E100 (ethanol)** retail price roughly **30% cheaper** than petrol, encouraging consumers to choose ethanol.
2. **Economics for consumers**
    - Merely matching E20 prices with petrol is not enough;
    - FFVs enable the use of **higher ethanol blends**, which can bring significant savings if ethanol is consistently cheaper.
3. **Automobile industry readiness**
    - Many global OEMs (Toyota, Honda, etc.) see FFVs and **strong hybrids** as key transition technologies in markets like India.
    - Small EVs face affordability and charging challenges; FFVs can complement EVs during this transition.
4. **Technological stability**
    - As ethanol content rises, **legacy vehicles** may face compatibility issues with materials, corrosion, etc.
    - FFVs provide a stable technological pathway, reducing the need for repeated re-testing and re-homologation with every blend increase.

Key challenges

1. **Legacy fleet compatibility**
    - Higher ethanol blends can affect older vehicles' **fuel pumps, seals, hoses and combustion performance**.
    - Without FFVs, existing vehicles may require expensive retrofits or face reduced lifespan.
2. **Tax structure and GST**
    - India's vehicle taxation is largely based on **size and type**, not environmental performance.
    - A more nuanced structure would be needed to make FFVs **financially attractive**.
3. **Fuel pricing policy**
    - For FFVs to succeed, **ethanol-rich fuels** (E85/E100) must be **reliably cheaper** than petrol at the pump.
    - Brazil's success was built on clear, long-term **pricing advantages** for ethanol.
4. **Need for incentives**
    - Without targeted GST cuts or other **policy incentives**, FFVs may remain niche offerings.
    - Industry seeks a roadmap comparable to the **policy push given to EVs**.

Why flex fuels matter for India

- **Energy security**
    - India imports about **85% of its crude oil**.
    - Scaling ethanol usage can meaningfully reduce import dependence.
- **Farmer income and rural economy**
    - Ethanol can be produced from **sugarcane, grains, and agricultural residues**.
    - Higher demand for ethanol can create **more stable markets** for agricultural produce.
- **Cleaner combustion**
    - Ethanol blends generally have lower **CO_2 and particulate emissions** compared to pure petrol.
    - Supports India's **NDC targets** and air quality goals.
- **Industrial diversification**
    - Encourages investment in:
        - First-generation ethanol (sugarcane, grains),

  - Second-generation ethanol (agri-waste),
  - Biomass-based refineries.

- **Bridge technology**
  - FFVs can act as a **bridge between conventional ICE vehicles and full electrification**, especially given India's current charging and grid constraints.

Policy considerations for the future

1. **Differential fuel pricing**
   - Ensure that high-ethanol blends (E85/E100) are **consistently and significantly less expensive** than petrol.
2. **Taxation reforms**
   - Rationalise **GST and other taxes** to favour FFVs and low-emission technologies.
   - Offer lower tax slabs for **flex fuel and hybrid** vehicles.
3. **National FFV roadmap**
   - Set timelines for:
     - Gradual increase in blend levels,
     - **Mandatory FFV capability** for certain vehicle segments,
     - Building high-ethanol fuel infrastructure.
4. **Consumer awareness**
   - Public campaigns to explain:
     - Lower running costs,
     - Environmental benefits,
     - Compatibility and safety.
5. **Inter-ministerial coordination**
   - Align policies of the Ministries of **Petroleum, Road Transport, Agriculture, and Environment** on ethanol pricing, supply, blending targets and vehicle standards.

06th December 2025: Daily MCQs

Q1. With reference to the Mahad Satyagraha of 1927, consider the following statements:

1. It was launched to enforce a legislative resolution that permitted Dalits to access publicly funded water bodies.
2. The burning of Manusmriti at Mahad 2.0 symbolised a rejection of Brahmanical patriarchy and graded inequality.

3. Mahad Satyagraha was confined only to the issue of water and did not engage with questions of gender.

Which of the statements given above is/are correct?

A. 1 and 2 only
B. 2 and 3 only
C. 1 only
D. 1, 2 and 3

Answer: A

Explanation:

- (1) Correct – It operationalised the **S. K. Bole Resolution (1923)** on access to public water bodies.
- (2) Correct – Manusmriti Dahan at Mahad 2.0 was a direct attack on Brahmanical, patriarchal hierarchy.
- (3) Incorrect – Ambedkar explicitly addressed **women** at Mahad 2.0, making gender central to the movement.

Q2. With reference to recent trends in deportations of Indian nationals from the United States, which of the following statements is/are correct?

1. The year 2025 recorded the highest number of Indian deportees from the U.S. since 2009.
2. All Indian deportees in 2025 were returned on special charter flights arranged by U.S. authorities.
3. Recent U.S. visa practices include asking applicants to make their social media profiles publicly accessible.

Select the correct answer using the code below:

A. 1 and 3 only
B. 2 and 3 only
C. 1 only
D. 1, 2 and 3

Answer: A

Explanation:

- (1) Correct – 3,258 deportations in 2025, the highest since 2009.
- (2) Incorrect – Deportations were via both **commercial flights** and ICE/Customs charter flights.
- (3) Correct – Public social-media vetting is now part of stricter digital surveillance in visa processes.

Q3. DHRUVA and DIGIPIN, recently in the news, primarily relate to:

A. A new encryption standard for secure UPI payments.
B. A national digital addressing system linked to geolocation.
C. A space-based navigation service to replace GPS in India.
D. A scheme for linking Aadhaar with voter ID databases.

Answer: B

Explanation:

- **DHRUVA** is a proposed **digital addressing framework** using UPI-like address labels.
- **DIGIPIN** is a geolocation-derived **10-character alphanumeric code** representing a precise physical location.

Q4. Which of the following are major sources of airborne microplastics in urban environments?

1. Wear and tear of vehicle tyres
2. Synthetic textiles and indoor furnishings
3. Agricultural fertiliser application
4. Fragmentation of plastic litter and road dust

Select the correct answer using the code below:

A. 1, 2 and 4 only
B. 1 and 3 only
C. 2 and 4 only
D. 1, 2, 3 and 4

Answer: A

Explanation:

- Vehicle tyres, plastic litter fragmentation, road dust, and synthetic textiles are key sources.
- Fertiliser application is not a primary source of **airborne** microplastics in the given context.

Q5. Flex Fuel Vehicles (FFVs), as discussed in the Indian context, are best described as vehicles that:

A. Can switch between petrol and compressed natural gas (CNG).
B. Can run on any mixture of petrol and ethanol, often up to very high ethanol blends.
C. Use only E20 fuel but with improved engine efficiency.
D. Are fully electric vehicles with ethanol-based range extenders.

Answer: B

Explanation:

- FFVs are specifically designed to operate on **varying blends of petrol and ethanol** (e.g., E20 to E85/E100), with modified engines and fuel systems.

Mains: **"Mahad was not just a struggle over water; it was an early constitutional moment for India."**
Discuss how the Mahad Satyagraha(s) of 1927 shaped the ideas of dignity, equality, fraternity and gender justice that later informed provisions like Article 17 and the broader framework of constitutional morality. 150 words.