



# Weekly Current Affairs

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**BRIDGING NATIONS: THE GROWING PARTNERSHIP BETWEEN INDIA AND INDONESIA**

**WHY IN THE NEWS?**

Indonesian President Prabowo Subianto’s visit to India is set to deepen the strategic partnership between the two countries, reflecting Indonesia’s ambition to play a larger role globally. Despite occasional differences in global outlook, the growing collaboration between India and Indonesia, bolstered by successful foreign ministerial relations and shared G20 presidencies, points to a more coherent partnership. A key challenge lies in how India’s Foreign Minister, S. Jaishankar, connects with Indonesia’s new foreign minister, Sugiono, to strengthen this high-profile relationship further.



**EVOLUTION OF INDIA – INDONESIA BILATERAL RELATIONS:**

Phase	Timeline	Key Events and Developments
<b>Phase 1: Foundation and Early Engagement</b>	1950 – 1970	Formal diplomatic relations were established in 1950. Bandung Conference in 1955, both co-founders of the Non-Aligned Movement (NAM). Cooperation on anti-colonial struggles and sovereignty.
<b>Phase 2: Expanding Ties and Strategic Cooperation</b>	1970 – 2000	Increased focus on regional cooperation and multilateral diplomacy. ThesigningofMoUsondefence,trade,andothersectors. 1992: Start of India’s “Look East Policy”. 1998: Greater defence and economic collaboration.
<b>Phase 3: Comprehensive Partnership and Strategic Engagement</b>	2000 – 2014	2001 MoU, formalizing bilateral cooperation. 2005: Upgrade to Strategic Partnership. Growth in trade, defence, and cultural exchange. Enhanced collaboration in regional security and defence.

**AREAS OF COOPERATION:**

1. **Maritime Security:** Joint naval exercises (e.g., Samudra Shakti, IND-INDO CORPAT) to enhance interoperability and address piracy, terrorism, and other maritime threats.
2. **Defense & Security:**
  - **Strategic Partnership:** Joint military training, technology sharing, and defence exports (e.g., BrahMos, Light Combat Aircraft).
  - **Military Engagements:** Increased naval operations like INS Sindhukesari’s operational turnarounds.
3. **Trade & Economic Cooperation:** Bilateral trade reached USD 38.85 billion in 2022-23, with strong ties in energy (coal, palm oil) and infrastructure, including Sabang Port development.
4. **Cultural & People-to-People Ties:** Shared cultural history through the Ramayana and Mahabharata; cultural exchanges via the Swami Vivekananda Cultural Centre.
5. **Education & Capacity-Building:** Capacity-building programs like ITEC and scholarships for Indonesian students in India. Humanitarian support, such as Operation Samudra Maitri post-2018 earthquake and tsunami.

Phase	Timeline	Key Events and Developments
<b>Phase 4: Enhanced Strategic Partnership and Global Cooperation</b>	2014 – Present	“Act East” policy boosts cooperation in defence, trade, and regional security. 2017: Bilateral trade surpasses \$20 billion. 2018: Modi’s visit solidifies Comprehensive Economic Partnership. Focus on maritime security, climate change, and sustainable development.

- 6. Regional & Multilateral Cooperation:** Active participation in forums like ASEAN, IORA, G20, and East Asia Summit, focusing on maritime security, trade, and climate change.
- 7. Science & Technology:** Collaboration in space, IT, and green tech; alignment on climate action and the International Solar Alliance.
- 8. Climate Change & Sustainability:** Joint initiatives on renewable energy, climate resilience, and disaster management.

**SIGNIFICANCE OF INDONESIA FOR INDIA:**

- 1. Strategic Partner:** Key to India’s Indo-Pacific vision, supporting free, open, and inclusive maritime security, especially through multilateral forums (EAS, IORA).
- 2. Maritime Security & Connectivity:** Critical for securing shipping lanes, with initiatives like Sabang Port improving access to the Malacca Strait.
- 3. Economic Cooperation:** Major trade partner, with USD 38.85 billion in trade; significant supplier of coal and palm oil.
- 4. Defense Ties:** Joint naval exercises and defence exports, including BrahMos missiles.
- 5. Cultural Ties:** Shared history, especially through Ramayana and Mahabharata; cultural centres foster bilateral exchanges.
- 6. Counterbalance to China:** Helps India mitigate China’s growing influence in the region.

**RAISING CONCERN IN INDIA -INDONESIA RELATIONS:**

- 1. Trade Imbalance:** India’s trade deficit with Indonesia was USD 21 billion in 2022-23, with imports (mainly coal and palm oil) outpacing exports.
- 2. Regulatory Hurdles:** Different defence acquisition processes hinder joint ventures and defence cooperation.
- 3. China’s Influence:** Indonesia’s involvement in China’s Belt and Road Initiative (e.g., high-speed rail projects) raises concerns for India.
- 4. Connectivity Issues:** Limited air connectivity (20 flights/week) and visa challenges restrict business and tourism exchanges.
- 5. Political Focus:** Indonesia’s ASEAN-centric approach sometimes diverts attention from deeper bilateral engagement with India.
- 6. Economic Underutilization:** Bilateral trade potential is USD 61 billion, but current trade is underperforming at USD 38.85 billion.
- 7. Defense Delays:** Joint defence projects, like BrahMos missiles, face slow progress due to differing procurement systems.
- 8. Environmental Concerns:** Palm oil imports from Indonesia face criticism over deforestation, impacting the trade relationship.

**WAY TO STRENGTHEN BILATERAL TIES:**

- 1. Boost Trade & Investment:** Fast-track CEPA and explore new sectors like IT, renewable energy, and manufacturing.

2. **Defense Cooperation:** Expand joint military exercises, technology transfer, and maritime security initiatives.
3. **Improve Connectivity:** Enhance direct flights, ease visa processes, and develop port infrastructure like Sabang.
4. **Cultural Exchanges:** Promote shared cultural heritage, yoga, and religious exchanges, fostering people-to-people links.
5. **Tech & Research Collaboration:** Partner on R&D and technology projects in areas like renewable energy and healthcare.
6. **Maritime Security:** Expand initiatives like IND-INDO CORPAT and Samudra Shakti to strengthen regional security.
7. **Multilateral Engagement:** Collaborate more within ASEAN, IORA, and the East Asia Summit on security and growth.
8. **Sustainable Development:** Work on climate change, disaster resilience, and joint projects under the International Solar Alliance.

## CONCLUSION

India-Indonesia relations have grown strong, focusing on defence, trade, maritime security, and cultural exchange. Despite challenges like trade imbalances, regulatory issues, and Indonesia's ties with China, both countries have maintained close cooperation on regional platforms like ASEAN and G20. To strengthen ties, efforts should focus on fast-tracking the CEPA, expanding defence and trade collaboration, improving connectivity, and enhancing cultural ties. Increased cooperation in renewable energy and technology will unlock further potential, solidifying their role as key Indo-Pacific partners.

### Prelims Question:

**Q. Which of the following events marked the formal establishment of diplomatic relations between India and Indonesia?**

- A. Bandung Conference, 1955
- B. India-Indonesia Strategic Partnership, 2005
- C. Formal diplomatic relations, 1950
- D. India-Indonesia Comprehensive Economic Partnership, 2018

**Answer: C**

### Mains Question:

**Q. Examine the key factors contributing to the strengthening of India-Indonesia bilateral relations in recent years. What challenges do both countries face in further deepening their cooperation?**

**(250 words, 15 marks)**

### “PRELIMS BITS: WETLAND CITY ACCREDITATION (WCA): INDORE AND UDAIPUR”

#### WHY IN THE NEWS?

Prime Minister Narendra Modi recently praised Indore and Udaipur for their recognition under the Wetland City Accreditation (WCA) system. Indore, known for its consistent performance as India's cleanest city in the Swachh Survekshan rankings, has significantly advanced urban development and smart city initiatives. Meanwhile, Udaipur has been recognized for its efforts in heritage conservation, sustainable tourism, and urban beautification. These cities continue to set governance, cleanliness, and innovation benchmarks, serving as role models for urban development across the country.



## WETLAND CITY ACCREDITATION (WCA)

### ORIGIN OF THE WCA SYSTEM:

- **Nature:** Voluntary accreditation system recognizing cities that value and conserve wetlands.
- **Approval:** Adopted at COP12 of Ramsar Convention (2015) in Uruguay.
- **Validity:** 6 years, renewable if the city meets specific criteria.

### CRITERIA FOR RECOGNITION

- Demonstrated conservation efforts for urban and peri-urban wetlands.
- Integration of wetlands in urban planning and sustainable development.
- Awareness campaigns to engage and educate citizens on wetland values.
- Policies for wise use of wetland resources.
- Monitoring and management to ensure wetland health.
- Socio-economic benefits for local communities derived from wetlands.

### SIGNIFICANCE OF WCA

- Promotes conservation and wise use of urban/peri-urban wetlands.
- Ensures sustainable socio-economic benefits for local populations.
- Encourages positive relationships between cities and Wetlands of International Importance.
- Supports the Amrit Dharohar Initiative of MoEF&CC.

## WETLANDS IN INDORE

### SIRPUR LAKE: KEY FACTS

#### Basics:

**Location:** Situated on Indore-Dhar Road, Indore, Madhya Pradesh.

**Ramsar Site Designation:** Declared a Ramsar site under the Ramsar Convention on 07 January 2022.  
**IBA Status (Important Bird Area):** Designated as one of 19 Important Bird Areas (IBAs) of Madhya

Pradesh by BirdLife International in 2015.

### Nature and Characteristics

**Type:** Human-made wetland stabilized and acquired near-natural characteristics over two centuries. Commonly known as Pakshi Vihar (Bird Sanctuary).  
**Lake Features:** Shallow, alkaline, and nutrient-rich. Maximum depth: 2 meters during the monsoon season.

### Biodiversity:

**Plant and Animal Life:** 175 terrestrial plant species, 6 macrophytes, 30 fish species (natural and cultured), 8 reptiles and amphibian species.  
**Birdlife:** The area supports 130 bird species (residents and migrants), including threatened species such as the **common pochard (Aythya ferina)**, the **Egyptian vulture (Neophron percnopterus)**, and the **Indian river tern (Sterna aurantia)**.

### SIGNIFICANCE FOR COMMUNITIES

- Fisheries.
- Medicinal plants.
- Buffer against flooding.
- Regulation of the local microclimate.
- Offers benefits like spiritual enrichment, recreation, and education for local communities.



## INDIAN RIVER TERN: KEY FACTS

Aspect	Details
<b>Scientific Name</b>	<i>Sterna aurantia</i>
<b>Family</b>	Laridae
<b>Habitat</b>	Inland rivers, freshwater lakes, tanks; rarely in tidal creeks or coasts.
<b>Distribution</b>	From Iran to Indian Subcontinent, Myanmar, and Thailand.
<b>Size</b>	Medium-sized, 38–43 cm long.
<b>Physical Description</b>	<ul style="list-style-type: none"> <li>– <b>Breeding Plumage:</b> Dark grey upperparts, white underparts, black cap, yellow bill, red legs.</li> <li>– <b>Non-Breeding Plumage:</b> Greyish-white cap with black streaks, dark mask, dusky bill tip.</li> <li>– <b>Juveniles:</b> Brown head, grey upperparts with brown markings, white underparts, yellowish bill with dark tip.</li> </ul>
<b>Tail</b>	Forked with long, flexible streamers.
<b>Wings</b>	Long and pointed.
<b>Breeding Season</b>	March to May.
<b>Nesting</b>	<ul style="list-style-type: none"> <li>– Ground scrape on sandbanks, bare rock, or sand.</li> <li>– Lays 3 greenish-grey to buff eggs with brown blotches and streaks.</li> </ul>
<b>Feeding Habits</b>	<ul style="list-style-type: none"> <li>– Diet: Fish, crustaceans, tadpoles, aquatic insects.</li> <li>– Hunting: Plunge-dives into water.</li> </ul>
<b>Unique Traits</b>	Exclusively found in freshwater habitats, unlike most <i>Sterna</i> terns.
<b>Conservation Status</b>	Population declining due to habitat pollution and degradation.

## WETLANDS IN UDAIPUR:

Lake	Highlights	Ecological Importance	Cultural/Recreational Significance
<b>Lake Pichola</b>	– Known for stunning views, especially at sunset.	– Supports a diverse aquatic ecosystem.	– Home to iconic palaces like Jag Mandir and Lake Palace.
<b>Lake Fateh Sagar</b>	<ul style="list-style-type: none"> <li>– Larger, man-made lake surrounded by Aravalli hills.</li> <li>– Contains Nehru Park and a solar observatory.</li> </ul>	– Major source of drinking water for Udaipur.	– Popular boating destination with panoramic views.
<b>Lake Rang Sagar</b>	– Calm waters with scenic sunrise and sunset views.	– Supports birdlife and aquatic species.	– A peaceful retreat surrounded by hills.
<b>Lake Swaroop Sagar</b>	– Smaller, tranquil lake often overlooked by tourists.	– Supports diverse flora and fauna.	– Offers insight into local life, surrounded by neighborhoods.

Lake	Highlights	Ecological Importance	Cultural/Recreational Significance
Lake Doodh Talai	– Primarily used as a water reservoir.	– Supports birdlife, including migratory species.	– Offers scenic greenery, a peaceful atmosphere, and recreational opportunities.

**PRELIMS QUESTIONS:**

1. **Q. With reference to the Indian River Tern, Consider the following statement:**

1. Indian River Tern is a type of fish
2. Indian River Tern almost found in the freshwater lakes
3. Indian River Tern is aligned with the summer season in India
4. Indian River Tern is under the critically endangered category of the IUCN.

**How many of the above-given statements are correct?**

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

**ANSWER: B**

**UNIFORM CIVIL CODE: STRIVING FOR EQUALITY AND JUSTICE**

**WHY IN THE NEWS?**

Uttarakhand has become the first state in India to implement the Uniform Civil Code (UCC), bringing uniform laws across all religions on marriage, inheritance, and civil matters. Key reforms include banning polygamy, granting equal property rights to daughters, and mandating the registration of live-in relationships with equal property rights for children born from them. The law also sets a uniform marriage age—21 for men and 18 for women. These changes are seen as a major step towards gender equality and social reform, potentially inspiring other states to follow suit.

**WHAT IS THE UNIFORM CIVIL CODE (UCC)?**

The Uniform Civil Code (UCC) refers to a set of common laws governing personal matters—such as marriage, divorce, inheritance, maintenance, adoption, and property succession—that apply to all citizens, regardless of their religion, community, or gender. In India, personal laws currently differ across religious communities, meaning that Muslims, Hindus, Christians, and others are governed by their respective religious personal laws. The UCC aims to replace these diverse laws with a single, unified legal framework. The main objectives of the UCC are:

1. **Equality and Justice:** Ensuring equal rights for all citizens, especially women, by removing discrimination present in some religious laws (e.g., inheritance laws, polygamy).
2. **Secularism:** Establishing a secular legal system where civil matters are not influenced by religious beliefs.
3. **National Integration:** Promoting national unity by creating common laws that unify citizens irrespective of their religion. While Article 44 of the Indian Constitution encourages the state to implement a UCC, it has not been fully adopted across the country due to concerns about religious freedom, diversity, and the potential impact on cultural and personal beliefs. Some states, like Goa, already have a form of UCC in practice, while Uttarakhand adopted it in 2024.



## WHY DID UTTARAKHAND TAKE IT AS A DECISION?

- Promoting Gender Equality:** One of the primary goals of the UCC in Uttarakhand is to ensure equal rights for all citizens, particularly women. By abolishing practices like polygamy and ensuring equal inheritance rights for daughters across all communities, the UCC aims to address gender imbalances that exist under some religious personal laws.
- National Integration and Secularism:** The UCC seeks to promote national integration by unifying personal laws, ensuring that all citizens, regardless of their religion, are governed by the same set of laws. This strengthens the concept of secularism, where the state does not favour any religion in personal matters.
- Fulfilling Constitutional Mandates:** Article 44 of the Indian Constitution urges the state to take steps toward securing a UCC. By implementing it, Uttarakhand is fulfilling this constitutional directive, aiming to bring about uniformity in civil matters like marriage, inheritance, and divorce.
- Reforming Outdated Practices:** The implementation of the UCC helps to address outdated and discriminatory practices in certain communities, such as polygamy (permitted under Muslim personal law) and the practice of talaq-e-biddat (instant divorce under Muslim law), which the Supreme Court has already deemed arbitrary in some cases.
- Modernizing the Legal System:** The UCC provides a standardized, modernized approach to personal laws, making legal processes more efficient and equitable. It helps align the legal system with contemporary values of equality, human rights, and social justice.
- Boosting Legal Efficiency:** A uniform set of laws simplifies the legal process by removing confusion and fragmentation in the application of personal laws, resulting in more efficient and accessible justice for all citizens, regardless of their background.

## KEY PROVISION OF THE UNIFORM CIVIL CODE (UCC) IN UTTARAKHAND:

- Ban on Polygamy:** Prohibits polygamy for all citizens, ensuring gender equality.
- Equal Property Rights for Daughters:** Grants daughters equal inheritance and property rights across all religions.
- Live-in Relationships:** Requires registration of live-in relationships, with children born in them having equal property rights.
- Minimum Marriage Age:** Set the marriage age at 21 for men and 18 for women to prevent child marriages.
- Prohibition on Second Marriage:** Bars remarriage while a spouse is alive, preventing bigamy.
- Codification of Personal Laws:** Standardizes personal laws for transparency and equality.
- Secular Approach:** Ensures personal laws are not influenced by religious practices, promoting a unified legal framework.

## SIGNIFICANCE OF UNIFORM CIVIL CODE (UCC) IN INDIA:

- Promotes Equality:** The UCC aims to ensure gender equality, particularly by granting women equal rights in areas like inheritance, marriage, and divorce, addressing discriminatory practices in various religious personal laws.
- Secularism:** It helps uphold India's secular constitution by ensuring that civil laws governing personal matters like marriage, divorce, and inheritance are not influenced by religious beliefs, fostering a unified legal framework.
- National Integration:** The UCC promotes national integration by applying the same set of laws to all citizens, regardless of their religion, fostering a sense of unity and reducing legal disparities across different communities.
- Social Justice:** By standardizing laws across religions, the UCC can eliminate outdated and discriminatory practices, such as polygamy and

child marriage, which persist in some religious personal laws.

5. **Simplification of Legal Processes:** A common set of laws would streamline legal procedures, making them more efficient, transparent, and accessible for all citizens, regardless of their religion or community.
6. **Modernization:** The UCC aligns the legal system with evolving social norms, helping adapt laws to modern times and promoting individual freedoms, inclusivity, and progressive values.
7. **Fulfilling Constitutional Mandates:** The UCC aligns with Article 44 of the Indian Constitution, which directs the state to work towards securing a common set of laws for all citizens, thereby fulfilling an important constitutional objective.

#### CHALLENGES IN ITS IMPLEMENTATION :

1. **Religious and Cultural Diversity:** India is a nation with diverse religious and cultural traditions. Each community has its own personal laws governing marriage, divorce, inheritance, and other family matters. Imposing a single code could infringe upon the religious autonomy and cultural practices of these communities.
2. **Lack of Consensus:** There is no consensus among various communities, political parties, and even within the legal and academic circles regarding the need for and the contours of a UCC. Many religious groups view it as an infringement on their religious freedom.
3. **Potential for Social Unrest:** Implementing a UCC without adequate consultation and consensus-building could lead to social unrest and communal tensions, particularly if it is perceived as an imposition by the majority community.
4. **Practical Difficulties:** Drafting and implementing a UCC that is fair, just, and applicable to all communities in a diverse country like India is a complex and challenging task. It requires careful consideration of various religious, cultural, and social factors.

5. **Constitutional Concerns:** Some argue that a UCC could potentially infringe upon the fundamental right to freedom of religion guaranteed by the Indian Constitution.

#### CONCLUSION

Uttarakhand's implementation of the Uniform Civil Code (UCC) is a significant step toward gender equality, national integration, and a secular legal framework. Key provisions like banning polygamy, granting equal property rights to daughters, and setting a uniform marriage age aim to create a unified legal system that applies to all citizens, regardless of religion. Challenges such as religious diversity, lack of consensus, and the potential for social unrest remain. The complex task of creating a fair and inclusive UCC requires careful consultation and consideration of constitutional rights. Uttarakhand's move could inspire other states to adopt similar reforms, fostering a more equitable and progressive society.

#### PRELIMS QUESTION:

**Q. With reference to the Uniform Civil Code (UCC), consider the following statements:**

1. The UCC aims to implement a common legal framework for personal laws in India.
2. UCC is only applicable to Hindus and not to other religious groups in India.
3. The UCC is mandated by Article 44 of the Indian Constitution.

**How many of the above-given statements are correct?**

- A. Only one
- B. Only two
- C. All three
- D. None

**Answer: A**

#### MAINS QUESTION:

**Q. Uttarakhand's decision to implement the Uniform Civil Code (UCC) marks a significant step towards gender equality and social reform in India."**

Discuss the key provisions of the UCC and analyze the challenges in its implementation.

(250 words, 15 marks)

## PRELIMS BITS: THE SCIENCE BEHIND FOG AND THUNDERSTORM

### WHY IN THE NEWS?

The India Meteorological Department (IMD) has forecast dense fog conditions over Uttarakhand, Punjab, Haryana, Chandigarh, Sub-Himalayan West Bengal, and Sikkim today, with similar conditions expected in isolated pockets of Uttar Pradesh, Gangetic West Bengal, Coastal Odisha, and Bihar for the next 2-3 days. Additionally, light to moderate rainfall accompanied by thunderstorms is predicted over Arunachal Pradesh, Assam, and Meghalaya for the next two days. IMD has also projected a rise in temperature by 2-4°C over Northwest, Central, and East India during the next four days. These weather conditions may impact transportation, visibility, and overall climate patterns in the affected regions.

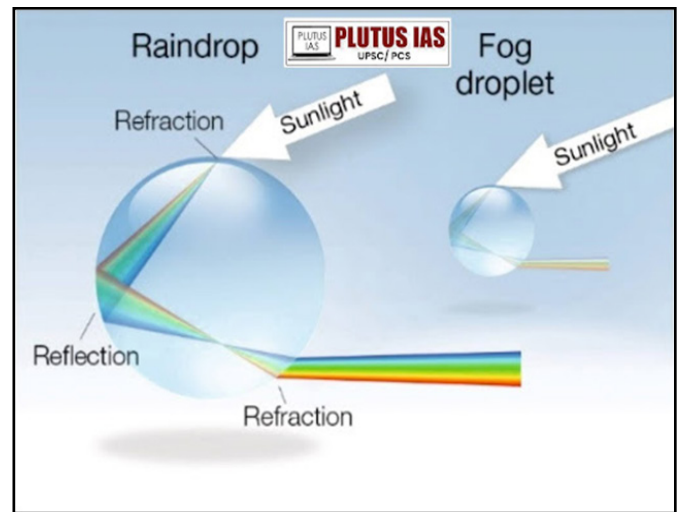


### WHAT IS FOG?

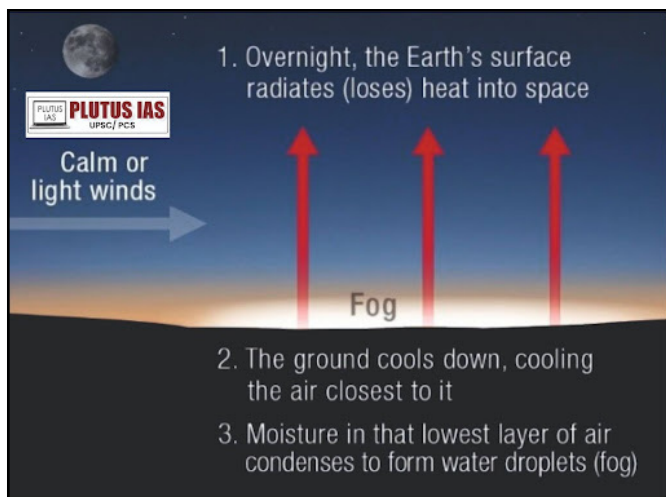
The World Meteorological Organization (WMO) defines fog as a suspension of very small water droplets in the air that reduces visibility at ground level to less than one kilometer.

### MECHANISM OF THE FORMATION OF THE FOG:

**Similar to Cloud Formation:** Fog forms like clouds but occurs at the surface rather than higher in the atmosphere.



- **Cooling to Dew-Point Temperature:** Air must cool to its dew-point temperature (the temperature at which condensation occurs) for fog to form.
- **Condensation of Water Vapour:** Invisible water vapour condenses into tiny droplets, creating fog.
- **Nighttime Cooling:** The most common cause of fog is overnight cooling, as the ground radiates heat absorbed during the day.
- **Ideal Weather Conditions:** Clear skies, light winds, and a high-pressure system favor fog formation.
- **Role of Wind:** Too much wind → Low clouds form instead of fog. Too little or no wind → Dew forms on surfaces instead of fog.
- **Moisture Content in Air:** Measured by the dew-point temperature—higher values indicate more moisture. Fog forms when air temperature and dew-point temperature are close together.
- **Temperature Difference Matters:** If the daytime temperature is too high compared to the dew point, nighttime cooling may not be sufficient for condensation.
- **Classic Fog Formation Pattern:** Rain in the evening increases the dew-point temperature. A high-pressure system follows, bringing clear skies and light winds overnight. This setup often results in thick, dense fog.



**TYPES OF FOG**

Type	Formation Process	Characteristics
<b>Radiation Fog</b>	Forms when the ground cools overnight, causing air near the surface to reach the dew-point temperature.	Most common type, occurs under clear skies and light winds.
<b>Advection Fog</b>	Forms when warm, moist air moves over a cooler surface.	Common in coastal areas; <b>sea fog</b> is a type of advection fog.
<b>Upslope Fog</b>	Forms when moist air is forced up a slope and cools to saturation.	Can occur over mountains, hills, or even gentle slopes.
<b>Fogbow</b>	Caused by the refraction and reflection of sunlight in fog droplets.	Similar to rainbows but appears white due to smaller droplet size.

**COMPARISON BETWEEN SMOG, FOG, AND MIST**

Factor	Smog	Fog	Mist
<b>Definition</b>	A mixture of <b>fog, smoke, and air pollutants</b>	A dense suspension of <b>tiny water droplets</b> reducing visibility	A light suspension of <b>water droplets</b> with less density than fog
<b>Main Components</b>	Smoke, dust, industrial pollutants, and fog	Water droplets formed by condensation	Water droplets formed by condensation but in lower concentration
<b>Visibility Reduction</b>	Can reduce visibility to <b>a few meters</b>	Reduces visibility to <b>less than 1 km</b>	Visibility remains <b>more than 1 km</b>
<b>Color</b>	<b>Yellowish or brownish</b> due to pollutants	Usually <b>white or gray</b>	Appears <b>whitish and thin</b>
<b>Formation Process</b>	Forms when pollutants mix with fog in the presence of <b>high humidity and temperature inversions</b>	Forms when air <b>cools to the dew-point temperature</b> , causing condensation	Forms similarly to fog but with <b>fewer water droplets</b>
<b>Common Causes</b>	<b>Vehicular emissions, industrial pollution, burning of fossil fuels</b>	<b>Cooling of air, high humidity, light winds, and clear skies</b>	Same as fog but with <b>less moisture and higher visibility</b>

Factor	Smog	Fog	Mist
<b>Occurrence</b>	More common in <b>urban areas</b> with high pollution	Found in <b>valleys, near water bodies, and low-lying areas</b>	Appears in <b>open landscapes, hills, and near water sources</b>
<b>Health Impact</b>	<b>Severe respiratory issues</b> , eye irritation, and lung diseases due to pollutants	Generally harmless but can cause <b>breathing discomfort in sensitive individuals</b>	No significant health impact
<b>Impact on Transportation</b>	Causes <b>major traffic, air, and rail disruptions</b> due to extremely low visibility	<b>Reduces visibility</b> , causing travel delays	Minimal impact on transportation
<b>Example Events</b>	<b>London's Great Smog (1952)</b> caused <b>8,000+ deaths</b>	Common in <b>winter mornings in valleys and plains</b>	Often seen over fields and water bodies in the early morning

**THUNDERSTORMS:**

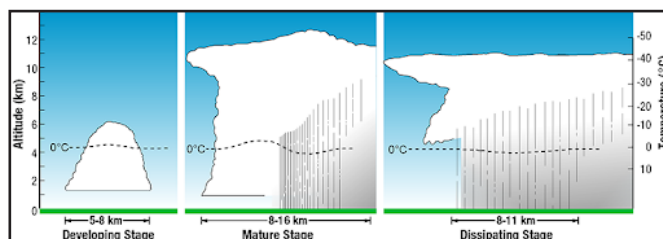
**WHAT IS A THUNDERSTORM?**

A thunderstorm is a rain shower accompanied by the sound of thunder. Since thunder is produced by lightning, all thunderstorms are characterized by the presence of lightning.

**MECHANISM OF THUNDERSTORM FORMATION**

- **Ingredients for Formation:** Moisture, Rising unstable air (air that continues to rise when disturbed), Lifting mechanism (e.g., hills, mountains, or air collisions).
- **Surface Heating:** The sun heats the earth's surface, warming the air above it.
- **Rising Air:** Warm air rises because it is lighter and warmer than the surrounding air. This upward movement is driven by convection.
- **Cloud Formation:** As the air rises and cools, its water vapor condenses into a cloud. The cloud grows as it continues to rise into colder parts of the atmosphere.

- **Ice Particle Creation:** As the cloud reaches freezing temperatures, liquid water drops freeze into ice particles. These ice particles grow by collecting super-cooled liquid droplets or vapor.
- **Collision of Ice Particles:** When ice particles collide, they build up electric charges. Some collisions transfer charge, leading to the formation of lightning.
- **Lightning and thunder:** The electric discharge from lightning creates thunder (sound waves), which we hear during a storm.



**THUNDERSTORM TYPES AND FEATURES**

Thunderstorm Type	Features
<b>Single-Cell Thunderstorm</b>	– Small, brief, weak storms
	– Lasts about <b>1 hour</b>

Thunderstorm Type	Features
	– Typically driven by <b>afternoon heating</b>
	– May produce brief <b>heavy rain</b> and <b>lightning</b>
<b>Multi-Cell Thunderstorm</b>	– Common, garden-variety thunderstorms
	– New updrafts form along the <b>gust front</b> (leading edge of rain-cooled air)
	– Cells usually last <b>30 to 60 minutes</b> , system can last for <b>several hours</b>
	– May produce <b>hail, strong winds, brief tornadoes, and/or flooding</b>
<b>Squall Line</b>	– Group of storms arranged in a <b>line</b>
	– Accompanied by <b>squalls</b> of high wind and heavy rain
	– Can be <b>hundreds of miles long</b> , but <b>10-20 miles wide</b>
	– Less likely to produce <b>tornadoes</b> than <b>supercells</b>
<b>Supercell</b>	– Long-lived (greater than <b>1 hour</b> ), highly organized storms
	– Features a <b>tilted rotating updraft</b> (mesocyclone), which can extend up to <b>10 miles in diameter</b>
	– Can lead to violent <b>tornadoes</b> (most large tornadoes come from supercells)
<b>Bow Echo</b>	– Radar signature of squall line that <b>“bows out”</b>
	– May indicate <b>high winds</b> in the middle of the line, with possible <b>brief tornadoes</b>
	– Often evolves into a <b>comma-shaped storm complex</b>

Thunderstorm Type	Features
<b>Mesoscale Convective System (MCS)</b>	– Collection of thunderstorms that act as a system
	– Can cover an entire <b>state</b> and last <b>more than 12 hours</b>
	– Includes subtypes like <b>Mesoscale Convective Complex (MCC)</b> and <b>Mesoscale Convective Vortex (MCV)</b>
<b>Derecho</b>	– Long-lived wind storm associated with a band of rapidly moving thunderstorms
	– Produces <b>straight-line wind damage</b> along a swath
	– By definition, <b>extends over 240 miles</b> and <b>wind gusts of 58 mph</b> or more

**PRELIMS QUESTION:**

**Q.1. Which of the following conditions are pre-requisites for the formation of Fog?**

1. Cooling of air
2. Low humidity,
3. Light Calm winds
4. Clear skies
5. High temperature

**Select the correct answer using the code given below:**

- (a). 1, 2 and 3 Only
- (b). 1, 3, and 4 Only
- (c). 2, 4, and 5 Only
- (d). 3, 4 and 5 Only

**ANSWER: b**

**Q.2. The term ‘Mesoscale Convective System (MCS)’ is sometimes mentioned in the news in the context of:**

- (a) Climate change
- (b) Urban Heat Island Effect

- (c) Landslides
- (d) Thunderstorms

**ANSWER: d**

**INVESTMENT LANDSCAPE IN INDIA**

**WHY IN THE NEWS?**

India’s investment landscape is evolving, with a recent State Bank of India (SBI) report highlighting key trends. The report shows a rise in private sector contributions and underscores the growing importance of External Commercial Borrowings (ECBs) in corporate financing. These developments reflect increasing confidence in the Indian economy and greater access to foreign capital. As India seeks stronger economic growth and global integration, understanding these trends is crucial for businesses, investors, and policymakers.

**WHAT IS INVESTMENT?**

An investment is an asset or item acquired to generate income or gain appreciation. Appreciation is the increase in the value of an asset over time. It requires the outlay of a resource today, like time, effort, and money, for a greater payoff in the future, generating a profit.

**STATISTICS ON INVESTMENT IN INDIA:**

Category	Details
<b>FDI Inflows</b>	<b>FY2022:</b> \$84 billion (historic high) <b>FY2023:</b> Strong inflows (official figures pending)
<b>FDI by Sector</b>	<b>Top sectors:</b> Services (20-25%), IT (software & hardware), Automobiles (including EVs), Construction
<b>FDI by Country</b>	<b>Top investors:</b> Singapore (25-30%), Mauritius, US (IT, infrastructure, manufacturing)
<b>Foreign Portfolio Investment (FPI)</b>	<b>FY2022:</b> \$9.5 billion in inflows
<b>Infrastructure Investments</b>	<b>National Monetization Pipeline (NMP):</b> Rs. 6 lakh crore (US\$ 75.18 billion) over 4 years Ongoing investments in roadways, railways, airports
<b>Domestic Investment</b>	<b>Venture Capital:</b> Indian startups raised \$24 billion in 2022

**Types of Investments**

- 1. Stocks:** Also called equities or shares, stocks represent ownership in a company and offer the potential for growth through price appreciation and dividends.
- 2. Bonds:** Bonds are debt securities where you lend money to a government or corporation in exchange for regular interest payments and the return of the principal amount at maturity.
- 3. Mutual Funds:** These pool money from multiple investors to invest in a diversified portfolio of assets, such as stocks, bonds, or a mix of both.
- 4. Real Estate:** Involves purchasing properties for investment, either for rental income or potential appreciation in value over time.
- 5. Life Insurance Plans:** These policies not only provide financial protection for loved ones but can also serve as an investment, building cash value over time.
- 6. Retirement Plans:** These long-term investments, such as pension plans or 401(k)s, help individuals save and grow their money for retirement, often with tax advantages.

**GOVT. INITIATIVES TO PROMOTE INVESTMENT:****1. Production Linked Incentive (PLI)**

**Scheme:** Launched across 14 sectors, such as electronics, textiles, and pharmaceuticals, this scheme has attracted significant investments, including over Rs. 12,000 crore (US\$ 1.5 billion) in the electronics sector alone.

**2. Ease of Doing Business Reforms:** India's ranking improved from 142 in 2015 to 63 in 2020 in the World Bank's Doing Business Report, reflecting regulatory reforms that make it easier to invest and do business in India.

**3. FDI Policy Reforms:** The government has liberalized FDI policies, allowing 100% FDI in many sectors through the automatic route. This has made India more attractive to global investors.

**4. National Monetization Pipeline (NMP):** Launched to monetize central government assets, the NMP targets investments worth Rs. 6 lakh crore (US\$ 75.18 billion) over a four-year period.

**5. Foreign Investment Facilitation Portal (FIFP):** An online platform designed to streamline the approval process for foreign direct investment (FDI), improving transparency and reducing delays.

**6. Sector-Specific FDI Caps:** The government has raised FDI caps in sectors like defence (up to 74% through the automatic route) and relaxed FDI norms in areas such as civil aviation and retail.

**7. Support for Infrastructure**

**Development:** Initiatives like the National Logistics Policy and the continued interest-free loan for state governments aim to stimulate investment in infrastructure projects.

**8. Startup Ecosystem Support:** The government has encouraged startup growth through various schemes and incentives, leading to India becoming the third-largest startup ecosystem globally with over 100 unicorns.

**9. Tax Incentives and Reductions:** Corporate tax

rates have been reduced, and measures like the Goods and Services Tax (GST) have streamlined taxation, enhancing India's investment appeal.

**ROLE OF INVESTMENT IN ECONOMIC GROWTH:**

**1. Capital Formation:** Investment is a key driver of capital formation, which leads to the creation of new infrastructure, machinery, and technology.

**2. Job Creation:** Investments, especially in industries like manufacturing, construction, and services, create new job opportunities. This leads to reduced unemployment, higher incomes, and an improvement in living standards.

**3. Increased Productivity:** Investment in new technologies, equipment, and skills enhances productivity in both the short and long term. This helps businesses become more competitive, reducing costs and improving the quality of goods and services.

**4. Innovation and Technological Advancement:** Investment, particularly in research and development (R&D), drives innovation and technological advancements.

**5. Infrastructure Development:** Investment in infrastructure (roads, railways, airports, energy, etc.) is crucial for economic growth. It reduces transportation and communication costs, connects markets, and improves the efficiency of the economy.

**6. Foreign Direct Investment (FDI):** FDI brings in foreign capital, which boosts the domestic economy, introduces new technologies, and creates employment.

**7. Private Sector Growth:** Investment fosters the growth of the private sector by enabling businesses to expand, diversify, and innovate. This leads to greater competition, which in turn improves product quality and services.

**8. Government Revenue:** Higher levels of investment contribute to greater economic output, which generates higher tax revenues for the government.

## WHAT ARE THE ISSUES HAUNTING INVESTMENT IN INDIA?

- 1. Regulatory Complexities:** While significant reforms have been made, the regulatory environment can still be cumbersome and slow-moving in some areas, deterring potential investors.
- 2. Land Acquisition Issues:** Land acquisition for large projects continues to be a challenge, particularly with bureaucratic delays, legal hurdles, and protests from local communities.
- 3. Infrastructure Gaps:** Despite improvements, infrastructure gaps persist, especially in rural and semi-urban areas. Poor infrastructure increases logistics costs, making it difficult for businesses to remain competitive.
- 4. Labour Laws and Skill Mismatch:** While labour laws have been rationalized, implementation issues remain. Additionally, there is a skill mismatch between what industries require and the skills available in the workforce.
- 5. Taxation Uncertainty:** Although tax rates have been lowered, periodic changes in tax policies and the complexity of the Goods and Services Tax (GST) can create uncertainty for investors.
- 6. Political and Economic Instability:** Fluctuations in policy or political instability at state or national levels can cause concerns for long-term investors, leading to hesitation in making major commitments.
- 7. Access to Finance for Small and Medium Enterprises (SMEs):** While large corporations may find financing opportunities relatively easier, SMEs often struggle to access funds due to stringent criteria and high interest rates.

## WAY FORWARD

- 1. Improved Regulatory Environment:** The government needs to continue simplifying regulations, addressing loopholes, and offering more clarity to reduce the uncertainty for investors.
- 2. Infrastructure Upgrades:** Focus on modernizing

and expanding infrastructure to lower business costs and improve connectivity across the country.

- 3. Simplification of Land Acquisition:** A more efficient, transparent, and predictable process for acquiring land for businesses will foster investment, especially in infrastructure and manufacturing sectors.
- 4. Promoting Skill Development:** Collaboration between the government, industry, and educational institutions to better align skills training with the needs of the economy can help address labour shortages and productivity gaps.
- 5. Stable Tax Regime:** The government should work towards ensuring that tax policies are stable, transparent, and investor-friendly to instil greater confidence among investors.
- 6. Support for SMEs:** Offering targeted financial assistance and incentivizing investment in SMEs can help broaden the base of the economy and provide greater employment opportunities.
- 7. Regional Balance:** Focus on promoting investments in underdeveloped regions to ensure inclusive growth and reduce the urban-rural divide.

## CONCLUSION

India's investment landscape has shown significant improvement in recent years, thanks to reforms in FDI policies, infrastructure development, and initiatives like the Production Linked Incentive (PLI) Scheme. With continued focus on improving regulatory efficiency, addressing infrastructure gaps, and supporting small and medium businesses, India can unlock its full investment potential. For both domestic and foreign investors, India presents vast opportunities for growth, innovation, and long-term economic development. However, overcoming the existing challenges and making necessary adjustments will be key to ensuring sustained growth in the years to come.

**PRELIMS QUESTION:**

**Q. With reference to India's investment landscape, consider the following statements:**

1. India recorded a historic FDI inflow of \$84 billion in FY2022, with services and IT sectors receiving the largest share of investments.
2. The National Monetization Pipeline (NMP) targets Rs. 6 lakh crore (US\$ 75.18 billion) worth of investment in infrastructure assets over five years.
3. Foreign Portfolio Investments (FPI) into India reached \$24 billion in FY2022, driven by strong domestic growth and reforms in financial markets.

**How many of the above-given statements are correct?**

- A. Only one
- B. Only two
- C. All three
- D. None

**Answer: B**

**MAINS QUESTION:**

**Q. Discuss the challenges that India faces in attracting and retaining investments, especially in sectors like infrastructure, defence, and technology. Suggest policy measures to address these challenges and ensure sustainable growth in these sectors. (250 words, 15 marks)**

**PRELIMS BIT: THE DEEP DIVE INTO THE ECB"****WHY IN THE NEWS**

India's investment ecosystem and external commercial borrowings (ECBs) have significantly developed over the past few years. The recent report by the State Bank of India (SBI) has highlighted trends in investment announcements, the private sector's contribution, and the role of ECB in corporate financing.

**DEFINITION:**

External Commercial Borrowings (ECB) are commercial loans raised by eligible resident entities from recognized non-resident entities. They adhere to regulatory parameters such as minimum maturity, all-in-cost ceiling, and permitted and non-permitted end-uses. ECBs are governed under FEMA Notification Nos. 3R & 8.

Hedging Status of ECB Loans - Sep-22 vis-à-vis Sep-24 (US\$ bn)		
Description	Sep-22	Sep-24
A. ECB – Total outstanding	173.5	190.4
B. ECB – INR denominated	15.1	15.3
C. ECB – FDI Companies' borrowings from foreign parent	28.4	32.5
of which, (a) INR denominated	10.8	12.4
(b) FCY denominated	17.6	20.1
D. ECB – Non-Rupee and non-FDI [= A-B-C(b)]	140.7	154.9
E. Hedged non-Rupee non-FDI ECBs (i.e., D above)	61.6	89.5
F. ECB – unhedged {D-E}	78.9	65.5
G. Percentage share of unhedged ECB ((F)/A)*100	45.5	34.4

**ECB CRITERIA:**

**Eligible Borrowers:** All entities except Limited Liability Partnerships (LLPs) can raise ECB.

**Eligible Lenders:**

- Resident of FATF (Financial Action Task Force) or IOSCO-compliant country.
- Multilateral/regional financial institutions where India is a member.
- Foreign equity holders (for specific ECB purposes).
- Foreign branches/subsidiaries of Indian banks (only for FCY ECB).

**Minimum Average Maturity Period (MAMP):**

- General ECB: 3 years.
- Foreign equity holder ECB for specific purposes: 5 years.
- Manufacturing sector ECB (up to INR 3.5 billion per FY): 1 year.

- **Currency Options:**
- ECB can be raised in Indian Rupees (INR) or any freely convertible foreign currency.

**MODES OF RAISING ECB:**

- **Automatic Route:** AD Category-I Bank examines and approves the case. The application, along with Form ECB, is sent to RBI for Loan Registration Number (LRN) issuance.
- **Approval Route:** The borrower applies through AD Category-I Bank to RBI for approval. The application is considered based on macroeconomic conditions and the merits of the proposal.

**TYPES OF ECB:**

- Loans
- Securitized instruments
- Buyers’ and Suppliers’ credit
- Foreign Currency Convertible Bonds (FCCBs)
- Foreign Currency Exchangeable Bonds (FCEBs)
- Financial Lease

**ALLOWED SECTORS FOR ECB USE:**

- Infrastructure sector (as per the Harmonized Master List).
- Shipping & airline companies (for import of second-hand vessels/aircraft under Track I).
- Manufacturing sector (ECB up to INR 3.5 billion per FY can have a 1-year MAMP).

**COMPARISON OF ECBS AND FDI**

- General corporate purposes & working capital (only under Track III).

**NON-PERMITTED END-USES OF ECB:**

- Real estate activities.
- Purchase of land.
- Investment in the capital market.
- Import of services.
- Refinancing of Rupee-denominated ECB under Track II.
- Payment of overdue import bills (Track I ECBs only).
- Contribution to Limited Liability Partnerships (LLPs).

**REGULATORY COMPLIANCE & REPORTING:**

- **Loan Registration Number (LRN):** Required before any ECB draw-down.
- **Changes in ECB Terms:** Must be reported to RBI via Revised Form ECB within 7 days.
- **Hedging Requirements:** Certain entities (NBFCs, Holding Companies, Core Investment Companies) must hedge 100% of ECB exposure if MAMP is less than 5 years old. AD Category-I Bank verifies compliance and reports to RBI via ECB 2 returns.
- **Conversion of ECB into Equity:** Subject to FDI sectoral cap. Reported via Form FC-GPR and ECB 2 Return.
- **Monthly Reporting:** ECB transactions must be reported via ECB 2 Return to RBI within 7 working days of the end of the month.

Feature	External Commercial Borrowings (ECBs)	Foreign Direct Investment (FDI)
<b>Type</b>	Debt financing	Equity financing
<b>Structure</b>	Debt instrument raised from foreign investors	Foreign money invested in equity capital
<b>Purpose</b>	Used for capital expansion and modernization	Helps foster economic growth in both host and investing country
<b>Permitted Uses</b>	Infrastructure, manufacturing, corporate purposes	Investment in business operations and assets
<b>Repayment</b>	Has a fixed repayment schedule with interest	No fixed repayment; returns depend on business performance
<b>Interest Cost</b>	Interest payments required	No direct interest cost, but profit-sharing or dividends apply

<b>Exchange Rate Risk</b>	Can impact repayment costs	Shared between investor and investee company
<b>Control &amp; Ownership</b>	No impact on ownership	Foreign investors may gain significant control
<b>Maturity</b>	Fixed maturity period	Long-term investment with no fixed maturity
<b>Regulation</b>	Subject to RBI regulations	Subject to government policies and sectoral caps
<b>Impact on Balance of Payments</b>	Increases external debt and impacts balance of payments	Improves capital account balance
<b>Sectoral Focus</b>	Various sectors as per RBI guidelines	Sector-dependent based on government policies and investor preference
<b>Risk Factors</b>	Exchange rate fluctuations, regulatory changes	Capital outflows if profits are not reinvested
<b>Benefits</b>	Access to foreign capital at competitive rates	Boosts job creation, infrastructure, and economic development
<b>Examples</b>	Indian companies raising loans from foreign banks or issuing bonds in overseas markets	Foreign companies setting up manufacturing facilities or acquiring stakes in Indian companies

**PRELIMS QUESTIONS:**

**Q. Consider the following statements:**

1. External Commercial Borrowing (ECB) and FDI are both a debt investment in Indian markets.
2. The ECB is prohibited in the real estate sector, while the FDI is allowed in the Real estate sector.
3. The Ministry of Finance regulates the ECB, While the RBI regulates the FDI.

**How many of the statements given above are correct?**

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

**ANSWER: A**

**NATIONAL CRITICAL MINERAL MISSION**

**WHY IN THE NEWS?**

Prime Minister Narendra Modi has termed a major step towards self-reliance in critical minerals to decisions taken by the Union Cabinet yesterday. In

a social media post, the Prime Minister said that the Union Cabinet’s decision on the National Critical Mineral Mission will encourage India’s high-tech, clean energy, defence and other key industries. He added that the decision relating to the revised ethanol procurement price will help boost ethanol production and blending targets. The Prime Minister highlighted that it will also help reduce crude imports, empower farmers and promote clean energy.

**WHAT IS THE NATIONAL CRITICAL MINERAL MISSION?**

The National Critical Mineral Mission (NCMM) is an

initiative launched by the Government of India to secure and enhance the country's access to critical minerals that are vital for sectors like high-tech industries, clean energy, and defence. This mission aims to reduce India's dependency on foreign sources for these minerals, improve domestic capabilities, and position India as a self-reliant nation in this crucial sector.

1. **Exploration and Mining:** It focuses on intensifying the exploration of critical minerals within India and in offshore areas. The mission aims to speed up the entire mining process, including regulatory approvals, to make it easier to extract these minerals.
2. **Financial Incentives:** The mission offers incentives to encourage exploration, recovery from waste materials (like mining overburden and tailings), and the development of new mining technologies.
3. **Supply Chain Development:** It aims to build a strong domestic supply chain by setting up mineral processing parks and encouraging the development of processing facilities within India.
4. **Research and Innovation:** The mission will promote research into critical mineral technologies and establish a Centre of Excellence for Critical

for national security or economic development due to its limited supply and vital role in advanced technologies, while a "major mineral" refers to a mineral needed in large quantities by the human body, and an "atomic mineral" is a mineral containing significant amounts of radioactive elements used primarily for nuclear energy purposes

### CRITICAL MINERALS UNDER THE MINES AND MINERALS (DEVELOPMENT AND REGULATION) ACT 1957

The Mines and Minerals (Development and Regulation) Amendment Act, 2023 introduced significant reforms in the mining sector, particularly focusing on critical minerals.

1. **Critical Minerals Under the MMDR Act:** Critical minerals are essential for advanced technologies,

Minerals, fostering innovation to make mining and processing more efficient.

5. **International Engagement:** The mission encourages Indian companies, both public and private, to acquire critical mineral assets abroad and enhance trade with resource-rich nations.
6. **Stockpiling:** It involves the creation of a stockpile of critical minerals within India, ensuring a steady domestic supply.

### WHAT ARE THE CRITICAL MINERALS?

A "critical mineral" is a mineral considered essential for energy security, and economic development. These minerals are crucial for industries such as electronics, renewable energy, and defence.

2. **Omission of Six Atomic Minerals:** The amendment removed six minerals from the list of 12 atomic minerals specified in Part B of the First Schedule of the Act.

### These include:

Lithium-bearing minerals  
Titanium bearing minerals  
and ores Beryl and other beryllium-bearing minerals  
Niobium and Tantalum-bearing minerals  
Zirconium-bearing minerals

3. **Exclusive Central Government Authority for Auctions:** The amendment empowers the Central Government to auction mineral concessions for critical minerals listed in Part-D of the First Schedule of the Act. The revenue from these auctions will go to the respective State Governments.
4. **Introduction of Exploration Licences:** A new provision allows for exploration licences for deep-seated and critical minerals to encourage private investment and enhance domestic production.

### CRITICAL MINERAL VS MAJOR MINERAL VS ATOMIC MINERALS:

Type of Mineral	Examples	Importance	Defining Factor
<b>Critical Minerals</b>	Lithium, cobalt, nickel, rare earth elements	Essential for advanced technologies (electric vehicles, renewable energy, electronics)	Strategic value, potential supply chain disruptions, and scarcity
<b>Major Minerals</b>	Calcium, phosphorus, potassium, sodium, magnesium	Necessary for basic bodily functions (e.g., bone health, muscle function, energy transfer)	Required in large quantities by the human body
<b>Atomic Minerals</b>	Uranium, thorium	Used for nuclear power generation and weapons development	High levels of radioactivity

### SIGNIFICANCE OF CRITICAL MINERALS IN VARIOUS SECTOR:

- 1. Electric Vehicles:** Lithium, cobalt, and nickel are crucial for battery technology in electric vehicles (EVs) and energy storage systems, supporting the shift to clean transportation.
- 2. Renewable Energy:** Rare earth elements, lithium, cobalt, and silicon are used in wind turbines, solar panels, and energy storage, facilitating the transition to renewable energy sources.
- 3. Electronics and Telecommunications:** Rare earth elements, gold, copper, and tantalum are essential for manufacturing electronic devices, circuit boards, and telecommunications infrastructure.
- 4. Defense and National Security:** Rare earth elements, titanium, cobalt, lithium, and tungsten are key for producing advanced weapons, defense technologies, and military equipment.
- 5. Aerospace and Aviation:** Titanium, aluminum, rare earth elements, and cobalt are used in the construction of aircraft, spacecraft, and high-performance engines.
- 6. Medical Devices and Healthcare:** Cobalt, titanium, platinum, gold, and rare earth elements are important for medical implants, diagnostic tools, and medical equipment.

- 7. Manufacturing and Industrial Technologies:** Manganese, chromium, nickel, and rare earth elements are essential for steel production, durable alloys, and industrial machinery.
- 8. Agriculture:** Potassium, phosphorus, and nitrogen are vital for fertilizers that support global food production.

### WHAT ARE THE LIMITATIONS ON EXPLORING FULL POTENTIAL OF CRITICAL MINERALS IN INDIA?

- 1. Geological and Exploration Challenges:** Lack of comprehensive geological data and complex exploration techniques hinder discovery and extraction.
- 2. Regulatory and Policy Constraints:** Slow approval processes, complex licensing, and bureaucratic delays slow down mining projects.
- 3. Environmental Concerns:** Mining leads to ecological damage, and public opposition can delay projects.
- 4. Inadequate Infrastructure:** Poor transport networks and insufficient processing facilities increase costs and hinder mineral extraction.
- 5. Investment and Funding:** High capital requirements and financial risks deter private investment in exploration and processing.
- 6. Global Supply Chain Dependencies:** Heavy reliance on imports and geopolitical risks limit self-sufficiency.

7. **Technology and Research Gaps:** Lack of advanced extraction technologies and insufficient R&D limit efficient mining and processing.
8. **Geopolitical and Strategic Issues:** Global competition for resources and trade barriers complicate access to critical minerals.
9. **Skilled Workforce Shortage:** A lack of trained professionals in mining and mineral processing restricts growth.

#### WAY FORWARD TO TAP THE POTENTIAL OF CRITICAL MINERALS:

1. **Enhanced Geological Surveys:** Conduct more extensive geological surveys to identify untapped mineral deposits, especially in under-explored regions and offshore areas.
2. **Streamlining Regulatory Processes:** Simplify and expedite the regulatory approval process for mining projects, reducing bureaucratic hurdles and making it easier for investors to access and develop critical mineral resources.
3. **Investing in Infrastructure:** Develop better transportation networks, mining infrastructure, and processing facilities to reduce logistical costs and improve the efficiency of mineral extraction and processing.
4. **Promoting Private Investment:** Offer attractive financial incentives and tax breaks to encourage private companies to invest in exploration, mining, and the development of new technologies for efficient extraction.
5. **Research and Innovation:** Invest in R&D to develop advanced mining and mineral processing technologies, focusing on sustainability, efficiency, and reducing environmental impact. Establish more research centers to foster innovation in the sector.
6. **Securing Supply Chains:** Establish strategic partnerships with resource-rich countries, create stockpiles of critical minerals, and diversify import sources to reduce dependence

on a few foreign suppliers.

7. **Developing Skilled Workforce:** Invest in specialized training and education programs to develop a skilled workforce capable of handling advanced mining and mineral processing technologies.
8. **Sustainability Focus:** Implement environmentally responsible mining practices, including better waste management and reclamation methods, to address concerns about ecological damage and community opposition.
9. **International Engagement:** Strengthen international trade relations and acquisitions to secure critical mineral assets abroad, ensuring a consistent and diverse supply chain for India's future needs.

#### CONCLUSION

The National Critical Mineral Mission (NCMM) is a strategic initiative to ensure India's self-reliance in critical minerals, which are essential for the growth of sectors like high-tech industries, clean energy, defense, and manufacturing. While challenges such as exploration difficulties, regulatory delays, and infrastructure gaps exist, there are clear opportunities to unlock the full potential of these resources through better research, investments in infrastructure, and policy reforms. By addressing these limitations, India can position itself as a global leader in the critical mineral sector, ensuring both economic growth and national security.

#### PRELIMS QUESTION:

**Q. Which of the following is an objective of the National Critical Mineral Mission (NCMM) launched by the Government of India?**

- A. Enhance India's dependency on foreign sources for critical minerals
- B. Establish a Centre of Excellence for Critical Minerals
- C. Focus solely on domestic ethanol production

D. Promote the exploration of non-essential minerals

**Answer: B**

### MAINS QUESTION:

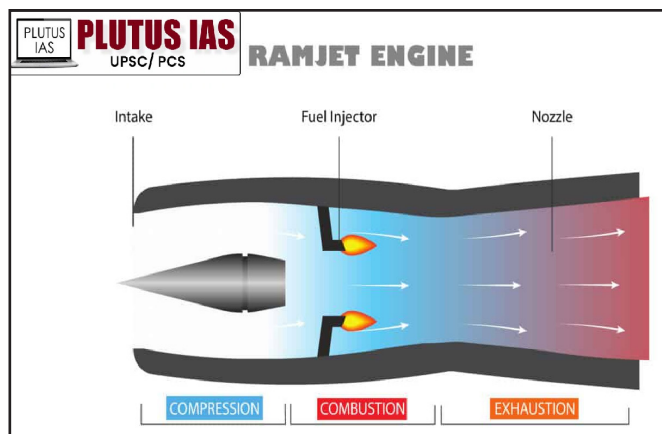
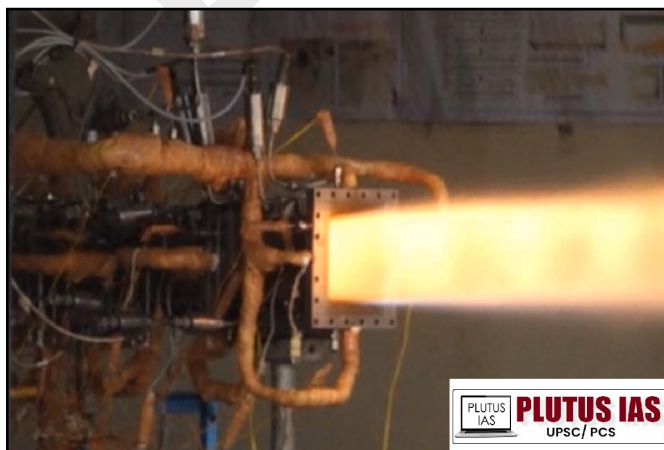
**Q. The National Critical Mineral Mission (NCMM) aims to secure India's self-reliance in critical minerals vital for sectors such as high-tech industries, clean energy, and defense." Discuss the challenges and the way forward for tapping the full potential of critical minerals in India.**

(250 words, 15 marks)

### SCRAMJET HYPERSONIC MISSILE TECHNOLOGY

#### WHY IN THE NEWS?

India's Defence Research and Development Organisation (DRDO) has achieved a major milestone in hypersonic technology with the successful ground test of an active cooled scramjet combustor. The test, which demonstrated stable combustion for 120 seconds, marks a crucial step in developing long-duration scramjet-powered hypersonic vehicles. This achievement places India at the forefront of advanced defence technology, positioning it to build next-generation hypersonic missiles that can travel at speeds above Mach 5. Scramjet technology, the key to these vehicles, allows for sustained combustion at supersonic speeds without moving parts, making it a highly efficient propulsion system.



#### SCRAMJET ENGINE MECHANISM OF WORKING:

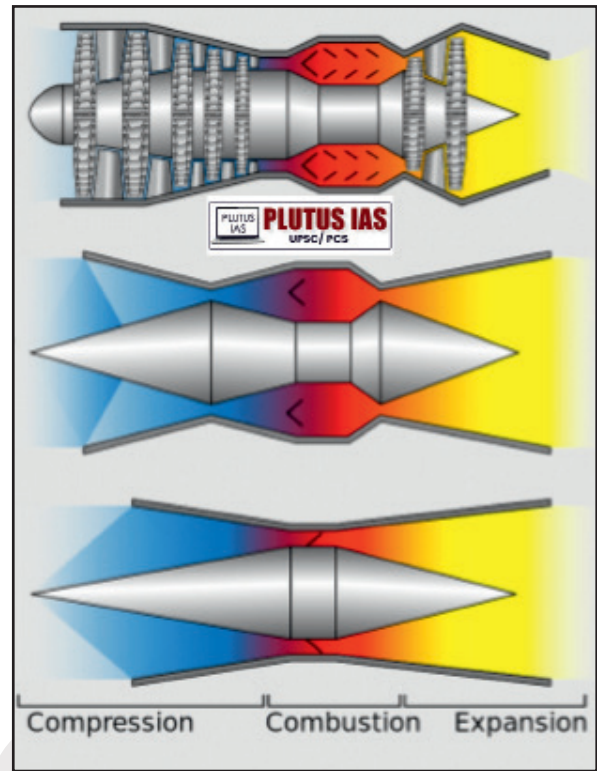
- 1. Air Intake:** At hypersonic speeds (Mach 5+), the air is taken in without slowing down, compressed by the vehicle's high velocity through the intake.
- 2. Compression:** Air is compressed by the intake shape, increasing pressure and temperature while remaining supersonic throughout the process.
- 3. Combustion:** Fuel (like hydrogen) is injected into the supersonic airflow in the combustion chamber. Combustion occurs almost instantly due to the high pressure and temperature.
- 4. Thrust Generation:** Post-combustion, hot gases expand and accelerate through a divergent nozzle, creating thrust to propel the vehicle forward.
- 5. No Moving Parts:** Unlike traditional jet engines, scramjets have no rotating components. They rely solely on vehicle speed for compression, making them lighter but requiring higher operational speeds.

**WHAT IS HYPERSONIC MISSILE TECHNOLOGY?**

Hypersonic Missile Technology refers to weapons capable of travelling at speeds greater than Mach 5 (more than five times the speed of sound). These missiles are faster, more manoeuvrable, and harder to intercept than traditional missiles, making them a significant advancement in military technology.

**Types of Hypersonic Missiles:**

- 1. Hypersonic Cruise Missiles (HCMs):** Powered by scramjets, these missiles maintain hypersonic speeds throughout their flight.
- 2. Hypersonic Glide Vehicles (HGVs):** Launched by rockets into space, they glide back to Earth at hypersonic speeds, capable of altering their trajectory.



**SCRAMJET VS RAMJET VS TURBINE**

Feature	Scramjet	Ramjet	Turbine
<b>Speed Range</b>	Hypersonic (Mach 5 and above)	Supersonic (Mach 2 to Mach 5)	Subsonic to Supersonic (Mach 0.3 to Mach 3)
<b>Operation Principle</b>	Air-breathing with supersonic combustion	Air-breathing with subsonic combustion	Air-breathing with compression and combustion
<b>Components</b>	Inlet, Combustor, Diverging Nozzle	Inlet, Combustor, Diverging Nozzle	Compressor, Combustor, Turbine, Nozzle
<b>Air Compression</b>	Uses shock waves for compression at hypersonic speeds	Uses forward motion to compress air	Uses rotating blades (compressor) for air compression
<b>Efficiency</b>	High efficiency at hypersonic speeds	High efficiency at supersonic speeds	High efficiency at subsonic to supersonic speeds
<b>Thrust Generation</b>	By accelerating heated air at hypersonic speeds	By accelerating heated air at supersonic speeds	By expanding air through turbines for thrust
<b>Moving Parts</b>	None (no moving parts)	None (no moving parts)	Yes (rotating blades in compressor and turbine)
<b>Fuel Type</b>	Typically, hydrogen or hydrocarbon-based	Typically, hydrogen or hydrocarbon-based	Typically, jet fuel (e.g., kerosene)

Feature	Scramjet	Ramjet	Turbine
<b>Operational Altitude</b>	Typically above 100 km (high-altitude)	Typically in the atmosphere (up to ~30 km)	Operates at lower altitudes (up to ~12 km)
<b>Applications</b>	Hypersonic flight, future space exploration, military missiles	Supersonic flight (e.g., missiles, supersonic aircraft)	Commercial jets, military jets, helicopters
<b>Complexity</b>	Very high (advanced engineering for high speeds)	Moderate (simpler design compared to turbines)	Moderate to high (advanced systems for jet propulsion)
<b>Heat Management</b>	Very high (extreme heat at hypersonic speeds)	High (but less extreme than scramjets)	Moderate (operates at lower temperatures)

**5. No Moving Parts:** Unlike traditional jet engines, scramjets have no rotating components. They rely solely on vehicle speed for compression, making them lighter but requiring higher operational speeds.

**APPLICATION OF SCRAMJET ENGINE:**

- 1. Hypersonic Aircraft:** Enables vehicles to fly at Mach 5+ speeds, reducing global travel times by travelling through the upper atmosphere.
- 2. Hypersonic Missiles:** Powers missiles that are faster and harder to intercept than conventional ones, with longer range and speed.
- 3. Space Launch Vehicles:** Used to reduce fuel needs by utilizing atmospheric air as an oxidizer, making space launches more efficient and cost-effective.
- 4. Spaceplanes and Reusable Spacecraft:** Key to developing spaceplanes that can launch like aeroplanes and transition to rocket propulsion for space access, enabling reusable spacecraft.
- 5. High-Speed Interceptors:** Develop interceptors capable of countering hypersonic threats with extreme speed.
- 6. Scientific Research & Space Exploration:** Enables quick access to the upper atmosphere for research on air composition, environmental conditions, and more.

**CONCLUSION**

India’s successful test of the actively cooled scram-

jet combustor marks a key milestone in hypersonic technology, placing the country at the forefront of defence innovation. This achievement paves the way for next-gen hypersonic missiles capable of exceeding Mach 5 speeds, making them faster, more manoeuvrable, and harder to intercept. Scramjet technology, which enables supersonic combustion without moving parts, is highly efficient and essential for high-speed flight and long-duration missions. Its applications extend beyond defence to include hypersonic aircraft, space exploration, and cost-effective space launches. By using atmospheric oxygen, scramjets also reduce fuel needs, potentially revolutionizing space access.

**PRELIMS QUESTION:**

**Q. With reference to Scramjet Engine technology, consider the following statements:**

- Scramjet engines are capable of operating at hypersonic speeds (Mach 5 and above).
- Scramjets rely on rotating parts like turbines and compressors for air compression.
- The combustion process in a scramjet engine occurs at supersonic speeds without any moving parts.

**How many of the above-given statements are correct?**

- A. Only one

- B. Only two
- C. All three
- D. None

**Answer: A**

**MAINS QUESTION:**

**Q. Discuss the working principle and applications of scramjet engines in hypersonic technologies. How does India’s successful testing of an actively cooled scramjet combustor contribute to the development of advanced defence technologies?**

**(250 words, 15 marks)**

**CROWD DISASTER: THE UNNOTICED YET DEADLY DISASTER**

**WHY IN THE NEWS?**

A deadly stampede occurred at the Maha Kumbh Mela in Prayagraj, resulting in dozens of fatalities. The tragedy took place before dawn as millions of devotees gathered to take a ritual dip in the sacred river on the festival’s most auspicious day. The massive crowd surge led to chaotic conditions, highlighting ongoing concerns about crowd management and safety at large religious gatherings.

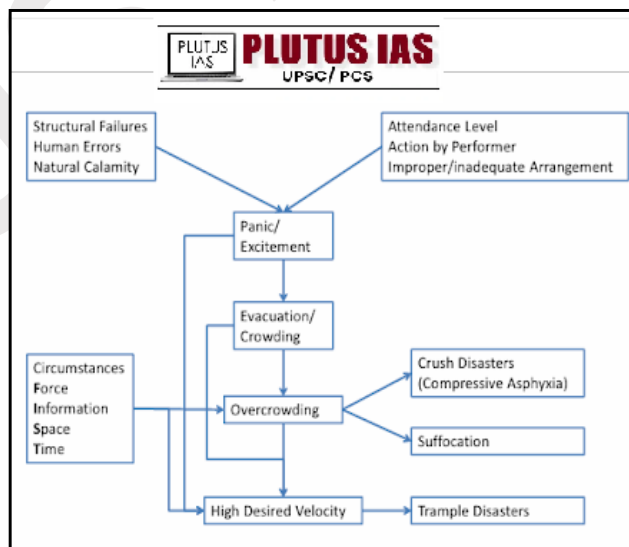
**RECENT CROWD DISASTERS IN INDIA:**

Sr. No.	Place & Date of Disaster	Cause of Disaster	Casualties
1	Charbagh Railway Station, Lucknow, Uttar Pradesh (28 Sept 2002)	Stampede on stairs	19
2	Nashik Mahakumbh Mela, Maharashtra (27 Aug 2003)	Religious gathering stampede	29
3	Wai, Satara, Shri Kalubai Yatra, Maharashtra (25 Jan 2005)	Stampede during religious event	293
4	Naina Devi Temple, Bilaspur, Himachal Pradesh (3 Aug 2008)	Stampede at temple	162



**WHAT IS A CROWD DISASTER?**

A crowd disaster is a tragic event where a large number of people suffer injuries or fatalities due to high crowd density, often leading to stampedes or crushes. These incidents typically occur at large gatherings such as religious pilgrimages, concerts, sporting events, or public demonstrations.



Sr. No.	Place & Date of Disaster	Cause of Disaster	Casualties
5	Chamunda Devi Temple, Jodhpur, Rajasthan (30 Sept 2008)	Stampede at temple	249
6	Ramjanaki Temple, Pratapgarh, Uttar Pradesh (4 Mar 2010)	Religious gathering stampede	65
7	Sabarimala Stampede, Kerala (14 Jan 2011)	Religious pilgrimage	102
8	Allahabad Railway Station, Uttar Pradesh (10 Feb 2013)	Stampede during Maha Kumbh Mela	36
9	Ratangarh, Datia, Madhya Pradesh (13 Oct 2013)	Stampede on bridge due to railing collapse	121
10	Maha Kumbh, Prayagraj, Uttar Pradesh (29 Jan 2025)	Religious gathering stampede	30

### CAUSES OF CROWD DISASTERS

- **High Crowd Density:** When the number of people per square meter exceeds safe limits, movement becomes restricted, leading to crushing. Densities above 5 people per square meter pose a risk, and above 7 people per square meter can be fatal.
- **Poor Crowd Management:** Ineffective planning for large crowds, lack of barriers, or improper entry/exit routes can cause dangerous congestion.
- **Sudden Surges and Panic:** Fear-driven reactions, such as rumors or perceived threats, can trigger mass movement, leading to stampedes.

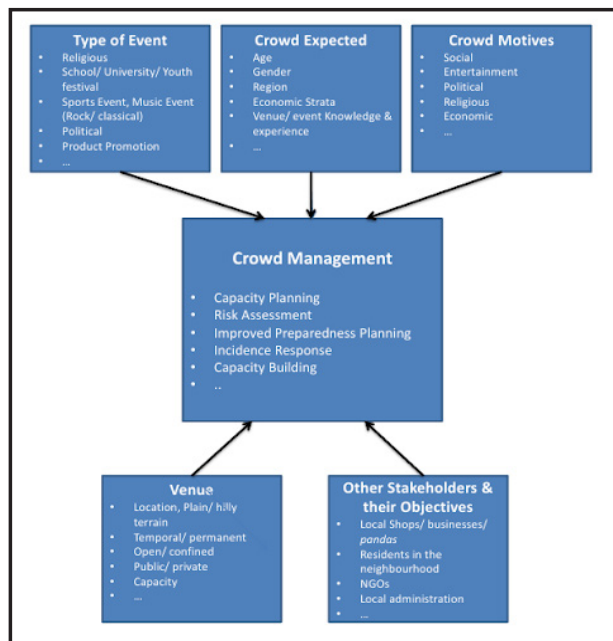
- **Blocked or Narrow Exits:** Insufficient escape routes or bottlenecks force people into tighter spaces, increasing pressure and risk of injury.
- **Structural Failures:** Weak or collapsing infrastructure (e.g., fences, bridges, or temporary stands) can cause chaos and panic.
- **Environmental Factors:** Poor weather conditions, extreme heat, or limited air circulation can worsen crowd distress and lead to medical emergencies.
- **Lack of Emergency Response:** Delayed or ineffective emergency services can increase casualties in case of an incident.

### KEY LEGAL PROVISIONS FOR CROWD MANAGEMENT

Act	Relevant Provisions	Objective for Crowd Control
<b>Disaster Management Act, 2005</b>	Controls traffic in vulnerable areas (Sec 24, 34). Authorizes officials for disaster management (Sec 33). Penalizes obstruction, false claims, and violations (Sec 51-53, 58).	Ensures proactive disaster management and penalizes negligence.
<b>Police Act, 1861</b>	Deploys additional police in disturbed areas (Sec 15). Regulates public assemblies and processions (Sec 30, 30A).	Empowers law enforcement for crowd control.

Act	Relevant Provisions	Objective for Crowd Control
<b>Madras City Police Act, 1888</b>	Mandates licensing for public places (Sec 34). Regulates meetings and processions (Sec 41, 41A).	Ensures orderly conduct in public spaces.
<b>Kerala Police Act, 2011</b>	Regulates traffic in disturbed areas (Sec 45). Controls public assemblies for safety (Sec 79).	Enhances preventive security measures.
<b>UP Melas Act, 1938</b>	Manages crowd flow at religious fairs (Sec 6-10).	Ensures safety at large religious gatherings.
<b>Cinematograph Act, 1952</b>	Mandates safety measures in theaters (Sec 10-12).	Controls crowd size in entertainment venues.
<b>Delhi Cinematograph Rules, 1953</b>	Regulates seating, exits, and fire safety.	Ensures safe crowd management in theaters.

**WAYS TO PREVENT CROWD DISASTERS:**



- **Maintain Safe Crowd Density:** Ensure the number of people per square meter does not exceed safe limits. Monitor crowd movement and prevent dangerous congestion.
- **Improve Entry and Exit Management:** Increase the number of entry and exit points to prevent bottlenecks. Stagger arrival and departure times to reduce sudden crowd surges.
- **Use Physical Barriers and Crowd Segmentation:** Divide large crowds into smaller,

manageable sections to prevent uncontrolled movement. Implement zoning strategies like those used in Times Square on New Year’s Eve.

- **Ensure Clear Pathways:** Keep all walkways free from obstacles that could cause people to trip or get trapped. Maintain emergency escape routes that are well-marked and accessible.
- **Use Technology for Crowd Monitoring:** Deploy CCTV, drones, and AI-powered crowd density tracking to detect dangerous levels early. Implement real-time communication systems to provide crowd guidance.
- **Enforce Stronger Regulations:** Governments should pass laws mandating safety measures at large events. Event organizers should be held accountable for implementing proper crowd management strategies.
- **Prioritize Safety Over Profit:** Avoid maximizing crowd size for financial gain at the expense of safety. Balance economic interests with necessary safety protocols.

**CONCLUSION**

Crowd disasters are not random accidents but preventable tragedies. While individual crowd members have little control over large-scale movements, event planners, local governments, and venue op-

erators have the power to enforce safety measures. By implementing simple, cost-effective strategies, they can significantly reduce risks and save lives. Ignoring these precautions will only lead to further unnecessary human life loss in the future.

### PRELIMS QUESTION:

**Q. Which of the following are classified as disasters under the Disaster Management Act, 2005?**

1. Industrial Fire incident
2. Stampede
3. Urban floods

**Select the correct answer using the code given below:**

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

**ANSWER: D**

### MAINS QUESTION:

**Q. Recent incidences of stampedes and casualties highlight the need for effective crowd management. Comment.**

**(Answer in 150 words)**

### BEYOND THE HEADLINES: THE UNTOLD STORY OF SUBHAS CHANDRA BOSE'S FIGHT FOR FREEDOM

#### WHY IN THE NEWS?

The grand celebration of Parakram Diwas at Barabati Fort, Cuttack, marks the birth anniversary of the iconic freedom fighter Netaji Subhas Chandra Bose. The event, organized in his birthplace, celebrated Odisha's deep connection with Netaji and its role in shaping his early thoughts and ideals. A significant moment of the event was a Video message from Prime Minister Narendra

Modi, who paid tribute to Netaji's unwavering dedication to India's independence struggle. The Prime Minister highlighted Netaji's perseverance and determination towards the vision of a free India, drawing attention to the Azad Hind Fauz as a symbol of unity in diversity.



#### WHAT IS PARAKRAM DIWAS?

Parakram Diwas (also known as Netaji Jayanti) is a national observance in India that celebrates the birth anniversary of Netaji Subhas Chandra Bose on 23 January. The day is dedicated to honouring his immense contributions to India's struggle for independence. The name Parakram Diwas translates to the Day of Valor, highlighting Netaji's bravery, leadership, and unwavering commitment to the cause of Indian independence. Bose is especially remembered for his role as the leader of the Indian National Army (INA), which fought against British colonial rule, and for founding the Azad Hind Government. The day was officially recognized as Parakram Diwas in 2021, marking his 124th birth anniversary, and it is celebrated annually with various events across India, especially in states like West Bengal, Odisha, Assam, Jharkhand, and Tripura. While it is celebrated with patriotic fervour, the naming of the day as Parakram Diwas has sparked some controversy, with certain political leaders and Netaji's family members calling for the day to be renamed as Deshprem Divas (Day of Patriotism) or Deshanayak Divas (Day of National Hero).



## SUBHAS CHANDRA BOSE:

### 1. Early Life and Background:

- **Birth and Family:** Subhas Chandra Bose was born on 23 January 1897 in Cuttack, Odisha, into a well-off Bengali family. His father, Janakinath Bose, was a prominent lawyer, and his mother, Prabhavati Devi, was deeply religious and nurturing.
- **Education:** Bose was an exceptional student, excelling in academics from an early age. He completed his early education in Cuttack and later attended Presidency College in Kolkata. His academic brilliance earned him a spot at Cambridge University in England, where he graduated with a degree in B.A. (Honours) in Philosophy. He also cleared the Indian Civil Services (ICS) exam, which was seen as a prestigious career path.

**Cultural Influence:** Growing up in the culturally rich environment of Bengal, Bose was inspired by the Bengal Renaissance and deeply influenced by the nationalist movements of the time. His admiration for the freedom struggle grew through the teachings of leaders like Swami Vivekananda and Bankim Chandra Chattopadhyay.

### 2. Subhas Chandra Bose's Contribution to India's Freedom:

- **Involvement with the Indian National Congress:** Subhas Chandra Bose initially aligned with the Indian National Congress (INC), led by Mahatma Gandhi. However, Bose was more radical in his approach compared to Gandhi's philosophy of non-violence. Bose firmly believed that India's independence could only be achieved through a more aggressive, militant strategy.
- **Disagreement with Gandhi and INC Leadership:** As Bose's views on achieving independence clashed with Gandhi and the INC leadership, he formed his own faction within the Congress, advocating for the complete independence of India (Purna Swaraj) and the use of force if necessary.
- **Electoral Success:** In 1938, Bose was elected the President of the Indian National Congress, but his differences with Gandhi and the Congress leadership led to his resignation in 1939. He believed that the Congress was not doing enough to push for India's freedom.
- **The Azad Hind Movement:** Bose's ultimate goal was India's independence through armed struggle. His legacy in the freedom movement is most strongly tied to the formation of the Azad Hind Fauj (Indian National Army) and his leadership of the Azad Hind Government during World War II.

### 3. Subhas Chandra Bose and the Indian National Army (INA):

- **Formation of INA:** Bose's leadership of the Indian National Army (INA) stands as one of his most significant contributions to the Indian freedom struggle. During his time in Southeast Asia, Bose sought help from Nazi Germany and Imperial Japan to form the INA, comprising Indian prisoners of war and expatriates.
- **INA's Role in the War:** The INA fought alongside the Japanese against British forces in India and

Southeast Asia. Though the INA ultimately did not succeed in liberating India, its efforts played a crucial role in inspiring a sense of nationalism and military resistance against British rule.

- **INA's Symbolism:** The INA became a symbol of unity and courage in the face of adversity, and its efforts directly influenced the post-war independence movement. Netaji's famous slogan, "Give me blood, and I will give you freedom," inspired many to join the cause.

#### 4. Subhas Chandra Bose and the Forward Bloc:

- **Formation of the Forward Bloc:** In 1939, after his resignation from the INC, Subhas Chandra Bose formed the Forward Bloc, a left-wing political group within the Indian National Congress. This group aimed to unite all anti-colonial forces and push for immediate and total independence.
- **The Role of the Forward Bloc:** While the Forward Bloc initially struggled to gain widespread support, it became an important platform for Bose to mobilize the masses and promote a more militant form of resistance against British colonial rule. The organization also focused on working-class issues, which Bose believed were crucial for building a strong national movement.
- **Ideological Differences:** The Forward Bloc was ideologically distinct from the main Congress party. Bose's vision for India's future included strong central governance, industrialization, and a more assertive foreign policy, in contrast to the moderate approach favoured by leaders like Gandhi and Nehru.

#### 5. Subhas Chandra Bose's Activities Abroad:

- **Journey to Germany and Japan:** After being placed under house arrest by the British authorities, Bose escaped India in 1941 and travelled to Germany and Japan to seek support for India's independence. He believed that the Axis powers, despite their problematic ideologies, could help India fight British imperialism

- **Collaboration with Axis Powers:** In Germany, Bose formed ties with Nazi officials, including Adolf Hitler, and later moved to Japan, where he secured military support for his vision of an independent India. While he did not fully endorse Nazi ideologies, he believed that the Axis powers could help weaken British rule in India.
- **Role in the Indian National Army (INA):** In Japan, Bose took charge of the INA, which fought against British forces in Burma and parts of India. He also established the Azad Hind Government, which declared war on Britain and Japan's allies.
- **Mysterious Disappearance:** Bose's efforts came to a sudden halt after Japan's defeat in World War II. In 1945, he is believed to have died in a plane crash in Taiwan, though this has been the Subject of much speculation and controversy. Many still believe that Bose may have survived and spent his final years in secrecy.

#### OVERALL IMPACT OF SUBHAS CHANDRA BOSE'S IDEOLOGY IN POST-INDEPENDENCE INDIA:

1. **Nationalism and Patriotism:** Subhas Chandra Bose's unwavering commitment to India's independence and his call for complete independence (Purna Swaraj) inspired generations of Indians. His iconic slogan, "Give me blood, and I will give you freedom," symbolizes courage and unity in the fight for freedom.
2. **Legacy of the Indian National Army (INA):** The Indian National Army (INA), led by Bose, became a symbol of militant nationalism. Though it did not lead to immediate independence, it sparked a spirit of resistance against British rule, complementing other independence efforts.
3. **Rejection of Non-Violence:** Bose's militant approach to India's freedom struggle, emphasizing self-reliance and strength, contrasted with Gandhi's non-violence but contributed to a multifaceted independence movement, highlighting the role of assertive nationalism.

4. **Influence on Post-Independence Politics:** Bose's vision for a strong, centralized India shaped post-independence policy on defence, security, and industrialization, leaving a lasting impact on India's nation-building and development.
5. **Inspiration for Post-Independence Leaders:** Bose's ideology of strong governance and national unity inspired radical and left-wing political leaders, especially in West Bengal, influencing their approach to consolidating India's democracy and addressing regional divisions.
6. **Symbol of Unity in Diversity:** Bose's leadership of the INA, which included diverse linguistic, cultural, and religious groups, epitomized his belief in unity in diversity, a core value in India's national identity.
7. **Continued Debate on His Disappearance:** The mystery of Bose's disappearance after World War II continues to spark debates. Many believe he may have survived and secretly worked for India's cause, keeping his legacy alive through ongoing research and public interest.
8. **Promoting National Resilience:** Bose's life, marked by sacrifices and setbacks, exemplified resilience and determination. His persistence in the face of adversity serves as a motivation for overcoming challenges in nation-building and pursuing the greater good of India.

#### CONCLUSION:

Subhas Chandra Bose's impact on post-independence India is profound. His contributions transcend mere political actions; they embody the spirit of resistance, freedom, and sacrifice. Bose's ideology continues to shape India's national identity, political thinking, and the moral fibre of the country's struggle for justice, making him an enduring figure in Indian history. His call for complete independence, his leadership of the Indian National Army, and his efforts to strengthen India's sovereignty continue to inspire political discourse and are integral to understanding India's historical and modern identity.

#### PRELIMS QUESTIONS:

**Q. Which of the following statements are correct about Parakram Diwas?**

1. Parakram Diwas is celebrated annually on 23 January to mark the birth anniversary of Subhas Chandra Bose.
2. Parakram Diwas was officially recognized in 2020 as a national observance in India.
3. The day is celebrated with patriotic fervour across India, especially in states like West Bengal, Odisha, and Assam.

**Select the correct answer using the code given below:**

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

**Answer: C**

#### MAINS QUESTIONS:

**Q. Discuss the contributions of Subhas Chandra Bose to India's freedom struggle and how his legacy continues to influence the nation's political and social fabric.**

**(250 words, 15 marks)**