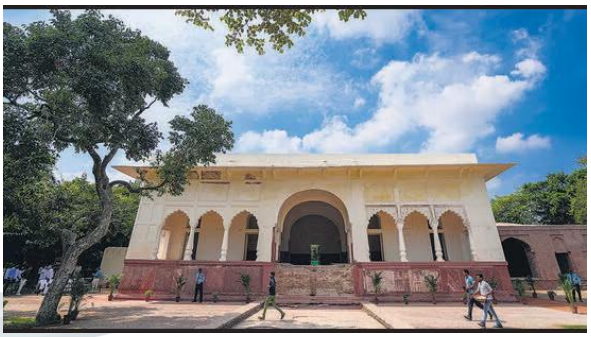
Today's Prelims Topics

Sheesh Mahal

Context

The historic **Sheesh Mahal** (Palace of Mirrors) in Delhi has been **restored and reopened to the public** after years of conservation work by the Archaeological Survey of India (ASI).

What is Sheesh Mahal?



- **Location:** Shalimar Bagh, Delhi
- **Built by:** A **17th-century Mughal pavilion** built by Shah Jahan in memory of Aizzun-Nisha Begum (also called Akbarabadi Begum), around **1653**.
- **Purpose:** Served as a summer retreat and pleasure pavilion for the emperor during his stay in Delhi.
- **Name Meaning:** *Sheesh Mahal* means "Palace of Mirrors" — known for its intricate use of **mirror work and stucco decoration**.
- **Style:** Mughal architecture with Persian influences
- **Materials:** Red sandstone, marble, and elaborate **mirror inlay work (sheesha)**
- **Layout:** Part of the larger Shalimar Bagh complex, it was designed with lush gardens and fountains, following the **charbagh** layout.
- **Special Features:** Arched ceilings, ornamental stucco work, and reflective mirror embellishments that illuminated the interior with natural light.
- It's believed to be the site where **Aurangzeb crowned himself emperor** on July 31, 1658.
- Over time, parts of the garden and pavilion were **damaged**, including during the **1857 uprising** and British occupation.

Source: TheHindu

The prospect of energy exploration at Andaman

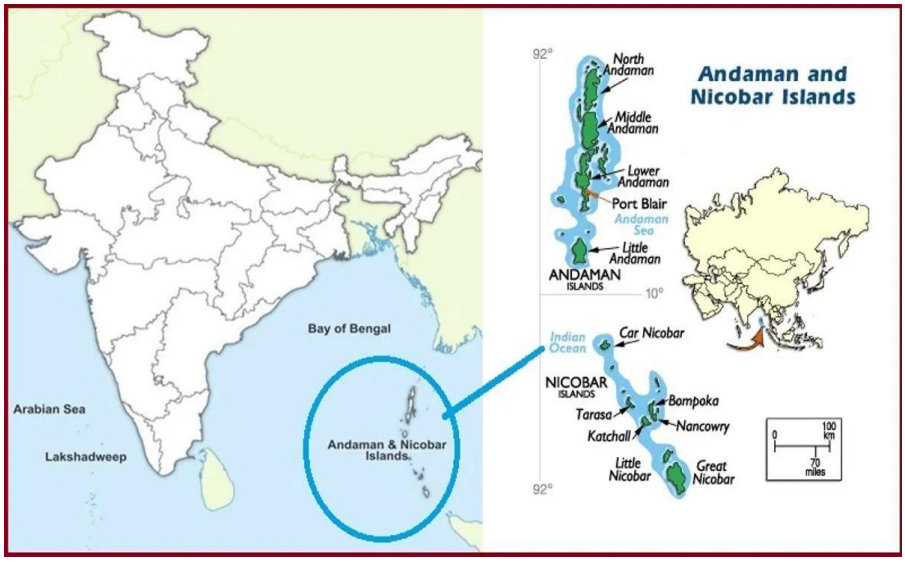
Context

India is actively exploring vast offshore areas near the Andaman Islands, with early indicators showing potential for large-scale oil and gas reserves.

About Andaman Energy Exploration

- **Andaman Basin** is a new offshore energy hotspot.
- **ONGC** and **Oil India Ltd** are leading exploration under the **Open Acreage Licensing Policy (OALP)**.
- **Seismic surveys and drilling** have shown strong signs of **oil and gas reserves**.
- Possible presence of **multi-billion-barrel oil fields**, similar to those in **Guyana**.
- The basin has **complex geology**, making it a **high-risk, high-reward** exploration zone.
- Aims to **reduce India's crude oil imports** and boost **energy self-sufficiency**.
- Could contribute to India's vision of becoming a **$20 trillion economy**.
- May spur **economic growth**, **job creation**, and development in **Andaman & Nicobar Islands**.

About Andaman & Nicobar Islands



Feature	Description
Location	• **Situated in:** Bay of Bengal • **Part of: Union Territory of Andaman & Nicobar Islands**, India • **Coordinates:** Between **6°N and 14°N latitude**, and **92°E and 94°E longitude** • **Distance from Mainland India (Chennai):** ~1,200 km
Capital	Port Blair (located in South Andaman)
Major Islands	North Andaman, Middle Andaman, South Andaman, Little Andaman
Major Channel	**Ten Degree Channel** separates Andaman Islands from Nicobar Islands
Important Straits Nearby	**Coco Strait** (between North Andaman and Coco Islands of Myanmar)

Highest Point	**Saddle Peak** (North Andaman) – 732 m
Soil Type	Lateritic soil, alluvium in valleys
Tectonic Zone	Part of the **Alpine-Himalayan seismic belt**; prone to earthquakes and tsunamis
Protected Areas	Mahatma Gandhi Marine National Park, Mount Harriet National Park.
Geological Origin	• The islands are **submerged extensions of the Arakan Yoma Range** of Myanmar. • They are of **oceanic and volcanic origin**, consisting of sandstone, limestone, and shale. • **Barren Island** (east of Middle Andaman) is **India's only active volcano**.

Source: TheHindu

New Garcinia species found in Assam

Context

Botanists have identified a **new species of Garcinia** in Assam and named it **Garcinia kusumae** in honor of a renowned scientist.

About Garciniakusumae

- Genus: *Garcinia*.
- Locally, it is known as ***thoikora*** in Assamese.
- It is a **dioecious evergreen tree** that grows up to **18 metres** in height.
- The tree **flowers from February to April**, and its **fruits mature between May and June**.
- Key morphological features include:
    - Up to **15 staminate flowers per fascicle**.
    - **Fewer stamens per flower**, except in *Garcinia assamica*.
    - **Berries with blackish resinous exudations**.
- The fruit has **significant cultural and medicinal uses**.
- The **sun-dried pulp** is used to make a **sherbet** with salt and sugar, used to prevent heat stroke and thirst.
- It is also used in **fish curries** and as a **traditional treatment** for **diabetes and dysentery**.
- The **seed aril**, which is sweet and sour, is eaten raw with **salt, chillies, and mustard oil**.

About Genus Garcinia

- The genus *Garcinia* includes **414 species** of shrubs and trees in the **Clusiaceae** family.
- It is found **pan-tropically**, with diversity centres in **Africa, Australasia, and Southeast Asia**.
- *Garcinia* species are known for their **floral diversity**, presence in **lowland tropical rainforests**, and **pharmacological value**.
- In **India**, there are **33 species and 7 varieties** of *Garcinia* documented.
- The state of **Assam alone hosts 12 species and 3 varieties**.

Source: TheHindu

BHARAT — establishing healthy ageing parameters

Context

The **BHARAT study**, launched by IISc Bengaluru, aims to identify India-specific biomarkers for healthy ageing and address diagnostic gaps arising from the reliance on Western-centric health data.

About BHARAT (Biomarkers of Healthy Aging, Resilience, Adversity, and Transitions) Initiative

- It is a **large-scale scientific study** launched by the **Indian Institute of Science (IISc), Bengaluru** under the **Longevity India Program**.
- The aim is to identify **biological indicators (biomarkers)** that define and influence **healthy ageing in Indians**.
- The study focuses on **genetic, molecular, physiological, and environmental markers** affecting ageing.
- It seeks to build an **India-specific database** of ageing parameters, as **Western diagnostic benchmarks** may not be suitable for Indians.

Key Findings

- **Life expectancy** in India has increased, but that doesn't guarantee **healthy ageing**.
- **Gaps exist** between how diseases progress or respond to treatment in Western vs. Indian populations.
- The study addresses **misdiagnosis risks** by replacing inappropriate global benchmarks with **India-specific health standards**.
- It includes:
    - **Genomic biomarkers** (e.g., mutations linked to disease).
    - **Proteomic and metabolic indicators** (e.g., cholesterol levels, CRP markers).
    - **Lifestyle and environmental data**.
- **AI and machine learning** tools will be used to analyse complex, multi-layered datasets.
- Challenges include collecting **diverse samples**, obtaining data from **healthy adults**, and ensuring **long-term support and funding**.
- The project promotes **early disease detection**, better **personalized interventions**, and improved **health outcomes** for Indians.

Source: TheHindu

Can the Supreme Court halt an Act passed by a State?

Context

The Supreme Court recently ruled in **Nandini Sundar vs State of Chhattisgarh** that the enactment of the Chhattisgarh Auxiliary Armed Police Forces Act, 2011—passed after its 2011 order—does not amount to contempt of court.

Can the Supreme Court Halt an Act Passed by a State?

- **Yes, but with conditions.**
- The Supreme Court **cannot directly stop** a State from passing a law **unless** the law:
    - **Violates the Constitution** (i.e., is *ultra vires*), or
    - **Exceeds the legislative competence** of the State.
- **Key Legal Principles**
    - **Separation of Powers**: The legislature has the **plenary power to make laws**, while the judiciary can only intervene if a law violates **constitutional provisions** or falls outside the legislative jurisdiction.
    - **Contempt of Court?**
        - Merely passing a law after a Supreme Court ruling **does not constitute contempt**.
        - Contempt applies only when there is **willful disobedience** of a court's order.
    - **What the Court Can Do:** It can **strike down** a State or Central law if it's found to be:
        - **Unconstitutional**, or
        - **Beyond legislative powers** under the Constitution.
    - **Indian Aluminium Co. vs State of Kerala (1996)**: The Court emphasized the need to **respect the balance** between the legislature, executive, and judiciary.

Source: TheHindu

Dynamic Pricing

Context

According to the new Motor Vehicle Aggregator Guidelines (2025), aggregators shall be permitted to **charge a minimum of 50% lower than the base fare** and a **maximum dynamic pricing of two times the base fare.**

What is Meant by Dynamic Pricing?

- It refers to a pricing strategy where the **price** of a product or service **fluctuates in real time based on current market demand**, supply conditions, and other external factors.
- This allows businesses to **maximize revenue and efficiently balance supply** with customer needs.
- This approach is widely used in sectors like ride-hailing, airlines, hotels, e-commerce, and even utilities.
- Prices are not fixed; they adjust automatically **using algorithms.**
- Driven by factors like demand, supply, time of day, weather, or special events.
- **Surge pricing** (higher rates during peak demand) is a type of dynamic pricing.
- Aims to match supply with demand and optimize profits or resource allocation.

Surge Pricing

- It refers to the **additional fee** demanded from the consumer **during periods of high demand**, such as rush hours, when traffic congestion is at its peak.
- Such fees are **also applied to utilities**, like electricity, and are used to help manage the supply and demand, preventing potential blackouts.

Flexi-fare Scheme

- It is a dynamic pricing model introduced by **Indian Railways in September 2016** for premium trains—Rajdhani, Shatabdi, and Duronto.
- **Key Features:**
  - **Fare Increases with Demand:** Base fare increases by 10% with every 10% of seats/berths booked.
  - **Capping:** Maximum fare is capped at 1.5 times the base fare for AC classes and 1.4 times for sleeper class.
  - **No Impact on Tatkal Quota:** Tatkal (last-minute booking) fares remain unaffected.
  - **Objective:** To increase revenue and better manage demand during peak travel times.

Motor Vehicle Aggregator Guidelines (MVAG), 2025

Aspect	Key Provisions / Details
What It Is	Regulatory framework for app-based ride-hailing platforms under Motor Vehicles Act, 1988
Issuing Ministry	Ministry of Road Transport and Highways, Government of India
Driver Welfare & Earnings	• Minimum 80% fare share (driver's own vehicle) • Minimum 60% (aggregator vehicle) • Health insurance ₹5 lakh; term insurance ₹10 lakh • Quarterly training for low-rated drivers

Passenger Protection	• Mandatory ₹5 lakh travel insurance per passenger • Complaints resolved within 3 days • Fares only for pick-up to drop-off
Regulated Fare Structure	• States fix base fare per category • Dynamic pricing: 50% below base to max 2x base fare
Penalties for Cancellations	• 10% penalty on unjustified cancellations (driver/rider, max ₹100) • Valid reasons must be listed
Bike-Taxi Recognition	Non-transport motorcycles permitted for ride-hailing, subject to state nod
EV Promotion & Accessibility	States may set EV adoption targets Inclusion of Divyangjan-accessible vehicles compulsory
Compliance & Penalties	Fines: ₹1 lakh to ₹1 crore for violations Repeat violations: 3-month suspension, possible cancellation of licence

Source: Indian Express

Editorial Summary

Make in China 2025 Plan: Lessons For India

Context

Amid Apple's shift from China to India for iPhone manufacturing, China's 'Made in China 2025' policy and India's 'Make in India' initiative offer contrasting lessons in industrial policy and global supply chains.

About 'Make in India' Initiative

- **Launch:** September 2014.
- **Aim:** Transform India into a global manufacturing hub by boosting investment, innovation, skill development, and manufacturing infrastructure.
- **Key Features:**
  - Promotes ease of doing business and FDI.
  - Focuses on **25 sectors**, including electronics, automobiles, defense, and textiles.
  - Encourages job creation and skill enhancement.
- **Achievements:**
  - Attracted significant FDI inflows.
  - Growth in sectors like mobile phone assembly (e.g., Apple, Samsung).
  - Supported by production-linked incentive (PLI) schemes.

About 'Made in China 2025'

- **Launch:** 2015.
- **Aim:** Upgrade China's manufacturing from low-cost mass production to high-tech, high-value sectors by 2025.
- **Core Focus Areas:**
  - **10 sectors**: Next-gen IT, high-end numerical control machinery, aerospace, new materials, biotech, green vehicles, power equipment, robotics, railways, and maritime engineering.
- **Approach:**
  - Heavy state support, subsidies, and policy-driven investments.
  - Focus on self-reliance, indigenous innovation, and global market dominance.
- **Achievements:**
  - Global leader in electric vehicles, solar modules, and lithium-ion batteries.
  - World-class high-speed rail, advanced robotics, and integrated supply chains.

What Made "Make in China 2025" Successful & Lessons for India?

- **Strategic State Support:** China's aggressive, policy-backed support (loans, subsidies, tax relief) accelerated tech adoption and global competitiveness.
  - **Lesson:** India needs a clear, sustained policy push and better coordination between central and state governments.
- **Focus on High-Value Manufacturing:** China moved quickly from labor-intensive goods to advanced manufacturing (AI, robotics, EVs).
  - **Lesson:** India should target select high-tech sectors for rapid scaling, beyond low-end assembly.
- **R&D and Skill Development:** China invested heavily in R&D and technical workforce upskilling.
  - **Lesson:** India must boost funding for research and technical education to build a world-class talent pool.

- **Integrated Supply Chains:** China created deep, integrated supply chains, reducing reliance on imports.
    - **Lesson:** India should nurture domestic supplier ecosystems and reduce dependence on foreign intermediates.
- **Balanced Growth:** China's manufacturing focus came at the expense of its services sector and domestic consumption.
    - **Lesson:** India should pursue manufacturing growth without neglecting its strong services sector and domestic demand.
- **Global Perception & Trade Practices:**
    - Aggressive policies led to global backlash and allegations of unfair trade practices against China.
    - **Lesson:** India must ensure its policies are WTO-compliant and foster positive international trade relationships.
- **IP and Technology Acquisition:** China's insistence on technology transfer from foreign firms accelerated local capabilities but caused friction.
    - **Lesson:** India should encourage technology partnerships while respecting IP rights, building trust with global investors.

Source: Indian Express

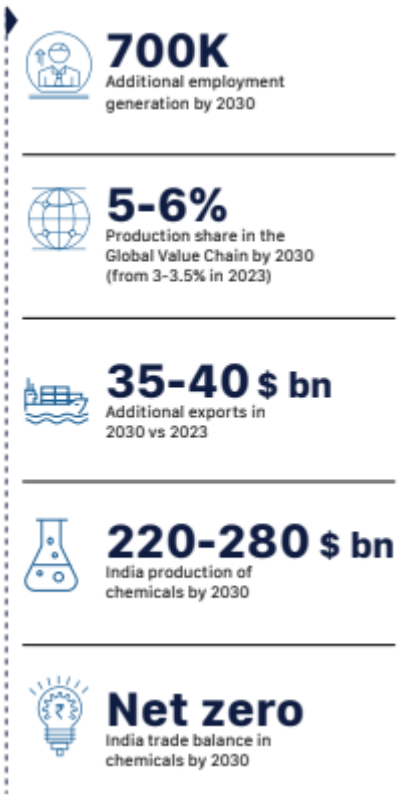
Chemical Industry: Powering India's Participation in Global Value Chains

Context

NITI Aayog released its report "Chemical Industry: Powering India's Participation in Global Value Chains"

Status of Chemical Industry in India

- **Size & Contribution:**
  - India is the 6th largest chemical producer in the world and 3rd in Asia.
  - Contributes over 7% to India's GDP; accounts for ~13% of total industrial output.
  - Employs over 2 million people.
  - India's share in the global chemical value chain: ~3.5%.
  - Chemical trade deficit: USD 31 billion (2023) due to high dependence on imports, especially for specialty chemicals and feedstock.
- **Potential:**
  - Rapid growth in demand for specialty and green chemicals.
  - Government targets $1 trillion chemical sector by 2040, aiming for 12% global value chain share.
  - Expected to generate significant exports and skilled jobs with focused interventions.
- **Vision for 2030:**
  - **Target:** 5-6% share in global chemical value chain, double current production, net-zero trade deficit, USD 35-40 billion extra exports, and 7 lakh new skilled jobs.
  - Modern clusters, advanced tech adoption, regulatory streamlining, robust talent pool.



Challenges Facing the Indian Chemical Sector

- **High Import Dependence:** Heavy reliance on imported feedstock and specialty chemicals; limited domestic backward integration.
- **Infrastructure Gaps:** Outdated chemical clusters, inadequate port and logistics infrastructure leading to higher costs than global competitors.
- **Low R&D Investment:** R&D spending only 0.7% (global average 2.3%), restricting innovation in high-value chemicals.
- **Regulatory Delays:** Lengthy and opaque environmental clearance processes stifle agility and add compliance burden.
- **Talent Shortages:** 30% shortfall in skilled professionals, especially in emerging areas like green chemistry, nanotech, and safety.
- **Fragmented Industry:** Large number of small, fragmented players with low economies of scale.

Solutions / Interventions Proposed by NITI Aayog

- **World-Class Chemical Hubs:** Upgrade and build new clusters; empowered central committee and dedicated chemical fund for shared infrastructure.

- **Strengthen Port & Cluster Infrastructure:** Develop high-potential clusters; improve port infrastructure with advisory chemical committees.
- **Opex Subsidy Scheme:** Incentivize incremental production, import substitution, and export-oriented production through targeted subsidies.
- **Boost R&D and Technology Access:** Allocate more funds for R&D; foster industry-academia partnerships; acquire advanced tech via global tie-ups.
- **Fast-Track Regulatory Approvals:** Simplify and accelerate environmental clearance; enhance transparency and accountability.
- **Strategic FTAs:** Negotiate FTAs with specific provisions for the chemical sector; improve exporter awareness and utilization.
- **Skill Development:** Expand ITIs and specialized institutes; upgrade faculty; promote industry-relevant curriculum and training.

Source: PIB