
Prelims Exam Topics

SAMUDRA MANTHAN (NATIONAL OFFSHORE EXPLORATION SCHEME)

Context

The Union Cabinet has approved **Samudra Manthan (National Offshore Exploration Scheme)** to accelerate offshore oil and gas exploration and strengthen India's energy security.

About Samudra Manthan (National Offshore Exploration Scheme)

- **Nature:** Samudra Manthan is a **Central Sector Scheme** of the **Ministry of Petroleum & Natural Gas (MoPNG)** to promote and de-risk **offshore hydrocarbon exploration** across India's offshore basins.
- **Objective:** To enhance **domestic oil and natural gas production**, reduce **crude oil import dependence**, and develop an indigenous ecosystem for offshore energy exploration and technologies.
- **Energy Security:** Aims to add over **600 Million Metric Tonnes of Oil Equivalent (MMTOE)** of hydrocarbon reserves, attract investments in offshore exploration, and strengthen India's long-term energy security.

PRADHAN MANTRI SURYA SAROVAR YOJANA (PM-SSY)

Context

The Union Cabinet has approved the **Pradhan Mantri Surya Sarovar Yojana (PM-SSY)**

About Pradhan Mantri Surya Sarovar Yojana (PM-SSY)

- **Nature:** PM-SSY is a **Central Sector Scheme** of the **Ministry of New and Renewable Energy (MNRE)** to promote **floating solar photovoltaic (FSPV)** projects integrated with energy storage systems.
- **Implementing Agency:** The scheme is implemented by the **Solar Energy Corporation of India (SECI)**.
- **Objective:** To expand India's **floating solar capacity**, optimise the use of **water bodies for renewable energy**, minimise land-use conflicts, and improve grid reliability through integrated energy storage.

- **Manufacturing & Sustainability:** Promotes **indigenous manufacturing** of floating platforms, anchoring systems, solar modules, and batteries while reducing **water evaporation** and renewable energy curtailment through mandatory co-located storage.
- **Significance:** Accelerates deployment of **floating solar power**, reduces land acquisition challenges, and supports India's **net-zero** and **energy transition** goals.

PELLET GUNS IN INDIA

Context

The Supreme Court recently declined to impose a **blanket ban on pellet guns**, observing that they may be used in **exceptional circumstances** for crowd control.

About Pellet Guns

- **Nature:** Pellet guns are **12-bore pump-action shotguns** classified as **less-lethal kinetic projectile weapons** for crowd control. Each cartridge releases **hundreds of small metal, rubber, or plastic pellets** instead of a single bullet.
- **Introduction:** Inducted by the **Union Government in 2010** as a less-lethal alternative for crowd management following unrest in **Jammu & Kashmir**.
- **Operational Characteristics:** A **12-bore cartridge** disperses around **500 pellets** over a wide area and may use **metallic, rubber, or plastic ammunition** depending on operational requirements.
- **Use Protocol:** Intended as a **last-resort crowd-control measure** after options such as **water cannons, lathi charge, PAVA shells, and tear smoke** have failed; force must be **necessary, proportionate**, and personnel should, as far as practicable, **aim below the waist**.
- **Concerns:** Despite being classified as **less-lethal**, pellet guns can cause **serious injuries**, including **permanent blindness and internal organ damage**, and have attracted criticism due to their **indiscriminate pellet spread** and potential impact on bystanders.

DHIMSA DANCE

Context

A performance by over **13,000 tribal women and girl students** at **Alluri Sitarama Raju International Airport, Bhogapuram**, was recognised by the **Guinness World Records** as the **largest Dhimsa dance**.

About Dhimsa Dance

- **Nature:** Dhimsa is a **traditional tribal folk dance** performed by communities such as the **Bagata, Valmiki, Poraja, Khond, Gadaba, Kondadora, Mukadora, and Kotia** in **Andhra Pradesh**.
- **Origin:** The dance is believed to have originated in the **Koraput region**, traditionally associated with the **Ghond Tribe**, and exists in **12 distinct forms**.
- **Occasions:** It is performed during **festivals, weddings**, and the annual **hunting festival** celebrated in **April**.
- **Performance:** Usually performed by **15–20 women** dressed in traditional attire, who dance in **synchronised circular formations** to the accompaniment of **tribal musicians**.
- **Music & Instruments:** Accompanied by **wind and percussion instruments**, including the **Mori (wind instrument), Thudum (drum), and Dappu**, with dance movements varying according to the rhythm.
- **Themes:** Depicts **tribal mythology, folklore, customs, livelihood, kinship, marriage, and social life**, with emphasis on **coordinated hand and foot movements** rather than facial expressions.

MAGELLANIC BRIDGE

Context

Astronomers led by the **Inter-University Centre for Astronomy and Astrophysics (IUCAA)** have discovered the **first known system of its kind** in the **Magellanic Bridge** using the **eROSITA X-ray Telescope**.

About Magellanic Bridge

- **Nature:** The **Magellanic Bridge** is a **stream of gas and stars** connecting the **Large Magellanic Cloud (LMC)** and the **Small Magellanic Cloud (SMC)**, formed during a close interaction between the two galaxies.
- **Formation:** It is composed mainly of **gas**, with a small population of **young stars formed in situ**, and is believed to have originated from **material tidally stripped from the SMC** during its last encounter with the LMC about **200–300 million years ago**.
- **Significance:** It serves as a natural laboratory for studying **galaxy interactions** and their influence on the **formation and evolution of stars and binary star systems**.

About eROSITA X-ray Telescope

- **Nature:** **eROSITA (extended ROentgen Survey with an Imaging Telescope Array)** is a **wide-field X-ray telescope** onboard the **Russian-German Spectrum-Roentgen-Gamma (SRG)**

Observatory, developed under the leadership of the **Max Planck Institute for Extraterrestrial Physics (MPE)**, **Germany**.

- **Capabilities:** It captures **deep, high-resolution X-ray images** over a wide field of view in the **0.2–8 keV energy range** and conducts an **all-sky survey**, mapping the entire celestial sphere every **six months**.
- **Orbit:** It operates in a **halo orbit around the Sun–Earth Lagrange Point 2 (L2)**.

THE PREVENTION OF INSULTS TO NATIONAL HONOUR ACT, 1971

Context

Parliament has passed the **Prevention of Insults to National Honour (Amendment) Bill, 2026**.

About Prevention of Insults to National Honour Act, 1971

- **Nature:** A **Central Act** enacted to prohibit and penalise intentional disrespect towards India's national symbols.
- **Coverage:** Applies across **the whole of India** and provides legal protection to the **National Flag, the Constitution of India, and the National Anthem**.
- **Objective:** To preserve the **dignity and honour of national symbols** by prescribing penalties for deliberate acts of insult or obstruction.
- **Key Features**
 - **Section 2:** Penalises **burning, defacing, defiling, mutilating, trampling, or showing disrespect** to the **National Flag** or the **Constitution of India**; punishment extends to **3 years' imprisonment, fine, or both**, while **bona fide criticism** seeking lawful constitutional or legal amendments is exempt.
 - **Section 3:** Makes it an offence to **intentionally prevent the singing of the National Anthem (Jana Gana Mana)** or **cause disturbance** to an assembly engaged in its singing; punishable with **up to 3 years' imprisonment, fine, or both**.
 - **Section 3A:** Inserted through the **2003 Amendment**, it prescribes a **minimum imprisonment of one year** for **second or subsequent convictions** under **Sections 2 and 3**.

About Prevention of Insults to National Honour (Amendment) Bill, 2026

- **Amendment:** Amends **Section 3** of the 1971 Act to extend the same statutory protection available to the **National Anthem** to the **National Song (Vande Mataram)**.

- **Key Changes:** Criminalises intentional prevention or disturbance of the singing of **Vande Mataram**, retains the **existing punishment of up to 3 years' imprisonment, fine, or both**, and extends the **mandatory minimum one-year imprisonment under Section 3A** to repeat offences involving the National Song.

Feature/Provision	<i>The Prevention of Insults to National Honour Act, 1971 (Original Act)</i>	<i>The Prevention of Insults to National Honour (Amendment) Bill, 2026</i>
Scope of Protection under Section 3	Specific legal protection solely to the Indian National Anthem (Jana Gana Mana).	Expands the scope of Section 3 to include both the National Anthem and the National Song (Vande Mataram).
Prohibited conduct	Penalises whoever intentionally prevents the singing of the Indian National Anthem, or causes disturbance to any assembly engaged in such singing.	Penalises whoever intentionally prevents the singing of the National Anthem or the National Song , or causes disturbance to any assembly engaged in such singing.
Punishment	Imprisonment for a term which may extend to three years, or with fine, or with both.	The punishment remains unchanged.
Repeat convictions	Under Section 3A (added in 2003), anyone convicted a second or subsequent time for an offense under Section 2 or 3 is punishable with imprisonment for a minimum term of one year .	The enhanced penalty of a minimum one-year imprisonment remains in effect. Repeat offenders who intentionally disrupt the singing of <i>Vande Mataram</i> will now also face this mandatory minimum one-year prison sentence.

PROTECTION & INDEMNITY (P&I) INSURANCE PRODUCT

Context

The **Department of Financial Services (DFS)**, Ministry of Finance, has launched **India's first sovereign-backed Protection & Indemnity (P&I) Insurance Product** under the **Bharat Maritime Insurance Pool (BMIP)**.

About Protection & Indemnity (P&I) Insurance Product

- **Nature:** It is a **sovereign-backed marine liability insurance product** that provides financial protection to **shipowners and charterers** against **third-party liabilities** arising from maritime operations.
- **Implementing Agency:** Designed by **The New India Assurance Company Limited** and operated under the **Bharat Maritime Insurance Pool (BMIP)** with **Government sovereign guarantee**.
- **Objective:** To strengthen **domestic marine risk management**, ensure uninterrupted **third-party liability coverage**, and reduce dependence on foreign marine insurers.
- **Coverage:** Provides **combined indemnity cover up to USD 1.5 billion** with sovereign backing for **crew and cargo liabilities, marine pollution, oil spill compensation, and wreck removal costs**.
- **Operational Support:** Backed by a **24×7 global network of port correspondents** for emergency response, legal assistance, and claims settlement worldwide.

- **Strategic Role:** Expands **BMIP** beyond **Cargo and Hull War Risk Insurance** to comprehensive **P&I liability coverage**, reducing reliance on foreign **P&I Clubs** and retaining insurance premiums within India.

TELECOM MANUFACTURING ZONE (TMZ)

Context

The **Department of Telecommunications (DoT)** and the **Government of Madhya Pradesh** have signed an MoU to establish **India's first Telecom Manufacturing Zone (TMZ)** at **Gwalior**.

About Telecom Manufacturing Zone (TMZ)

- **Nature:** The **Telecom Manufacturing Zone (TMZ)** is a **350-acre integrated plug-and-play industrial cluster** for telecom manufacturing, electronics production, R&D, testing, certification, and intellectual property (IP) creation.
- **Location & Governance:** Located at **Gwalior, Madhya Pradesh** (Phase-I: **170 acres** across the **SADA region** and **Gwalior IT Park**) and managed by a **Special Purpose Vehicle (SPV)** with **51% equity held by the Government of Madhya Pradesh** and **49% by the Department of Telecommunications (DoT)**.
- **Objective:** To promote **indigenous telecom manufacturing**, advance **5G/6G research**, reduce **import dependence**, and position India as a **global exporter of telecom equipment**.
- **Integrated Ecosystem:** Brings together **manufacturing units, 4G/5G testing facilities, certification laboratories, and R&D centres** within a single industrial cluster.
- **Value Chain:** Supports the complete telecom manufacturing ecosystem, including **mobile handsets, optical fibre cables, antennas, routers, satellite communication equipment, and semiconductor chips**.

SHAHEED UDHAM SINGH

Context

The nation recently commemorated the **87th martyrdom anniversary** of revolutionary freedom fighter **Shaheed Udham Singh**.

About Shaheed Udham Singh

- **Identity:** **Shaheed Udham Singh** (born **Sher Singh**) was a **revolutionary nationalist** associated with the **Ghadar Party** and the **Hindustan Socialist Republican Association (HSRA)**.

- **Early Life:** Orphaned at a young age and brought up at the **Central Khalsa Orphanage, Amritsar**, where he was renamed **Udham Singh**.
- **Freedom Movement:** Joined the **Ghadar Party** in **1924**, worked among Indian expatriates, returned to India in **1927** at **Bhagat Singh's** call to transport arms and revolutionary literature, and was imprisoned for **five years** by the British.
- **Martyrdom:** Assassinated **Michael O'Dwyer** to avenge the **Jallianwala Bagh Massacre (1919)** at **Caxton Hall, London**; adopted the name **Ram Mohammad Singh Azad** to symbolise communal unity, and was executed at **Pentonville Prison** on **31 July 1940**.

REPUBLIC OF NAOERO

Context

The Pacific island nation of **Nauru** has officially changed its name to the **Republic of Naoero**, restoring its traditional indigenous name to strengthen national identity and cultural heritage.

About Republic of Naoero

- **Location:** The **Republic of Naoero** is an **island republic** in the **southwestern Pacific Ocean**, comprising a **raised coral island** in **southeastern Micronesia**, about **40 km south of the Equator**.
- **Size:** It is the **world's smallest independent republic**, covering **21 sq. km** with a population of around **12,000**.
- **Capital & Currency:** It has **no official capital**; government offices are located in **Yaren**. The **Australian Dollar** is its official currency.
- **Political System:** A **republic with a Westminster-style parliamentary system**, the **President**, elected by the **unicameral Parliament**, serves as both **Head of State and Head of Government**, and all Members of Parliament contest elections as **independents**.
- **Physical Features:** The island has **no rivers or lakes** and is surrounded by an **Exclusive Economic Zone (EEZ)** extending **200 nautical miles (about 370 km)** offshore.
- **Economy:** Once among the world's wealthiest countries due to **phosphate mining**, it now relies on **fishing licence revenues**, while agriculture, fishing, tourism, and manufacturing contribute modestly following depletion of phosphate reserves.

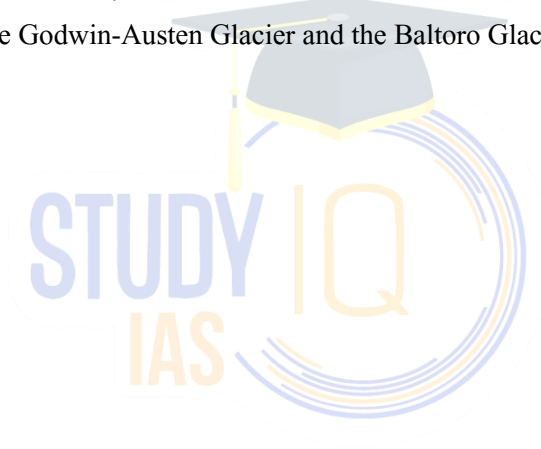
BROAD PEAK

Context

A massive avalanche recently struck a **10-member international mountaineering expedition** on **Broad Peak** in the **Karakoram Range**.

About Broad Peak

- **Location: Broad Peak** (locally known as **Falchan Kangri**) is the **12th-highest mountain in the world**, located in the **Karakoram Range** on the border of **Gilgit-Baltistan (Pakistan)** and **Xinjiang (China)**.
- **Elevation:** It rises to **8,051 m (26,414 ft)** above sea level and lies **southeast of K2** in the **Gasherbrum Massif**.
- **Geology & Glaciers:** Formed by the collision of the Indo-Australian and Eurasian tectonic plates; its snowfields feed the Godwin-Austen Glacier and the Baltoro Glacier.



Mains Exam Topics

URBAN FIRE DISASTERS

Context

Recent urban fire incidents in Lucknow and Delhi demonstrate that recurring fire disasters are rooted in structural weaknesses in urban governance, particularly poor enforcement, unauthorized construction, and limited municipal capacity.

How has the nature of urban fire disasters evolved into a governance problem?

- **Risk Transformation:** Rapid urbanisation has created dense, high-rise, and mixed-use buildings, where complex fire risks exceed the assumptions of outdated fire safety codes, making urban fires a systemic challenge rather than isolated accidents.
 - **Example:** The **2019 Anaj Mandi fire (Delhi)** killed 43 workers in a factory-cum-warehouse where combustible materials, residential use, and a single narrow staircase exposed the inadequacy of existing fire safety norms.
- **Regulatory Non-Compliance:** Owners increasingly make illegal occupancy changes, unauthorized floor additions, and block escape routes to maximize profits, turning violations into a systemic problem.
 - **Example:** The **2019 Surat coaching centre fire** killed 22 students after a commercial building was illegally converted into an educational institution without the required fire safety approvals.
- **Enforcement Capacity Gap:** Widespread regulatory violations overwhelm inspection, certification, and audit systems, making fire safety enforcement a capacity challenge rather than just a technical one.
- **Emergency Accessibility Failure:** As unsafe buildings continue to operate, congested roads, encroachments, and inadequate firefighting infrastructure delay emergency response, increasing casualties.
 - **Example:** During the **2022 Mundka fire (Delhi)**, narrow approach roads delayed fire tenders from reaching the illegally converted building, contributing to the loss of 27 lives.
- **Institutional Fragmentation:** Divided responsibilities among multiple agencies weaken accountability, delaying reforms and making urban fire safety a persistent governance challenge.

- **Example:** After the **Uphaar Cinema fire**, legal proceedings lasted over two decades as responsibility was shared across multiple agencies, highlighting how fragmented institutional mandates hinder accountability.

Why are repeated fire disasters emerging as the hidden cost of India's informal urban economy?

- **Cost Minimisation Logic:** Informal enterprises operating on thin profit margins often cut spending on fire safety to reduce costs, embedding fire risk into their business model.
 - **Example:** The **2018 Bawana fire (Delhi)** killed 17 workers in an illegal firecracker packaging unit that lacked licensed storage and proper ventilation, removing key safeguards against fire.
- **Regulatory Invisibility:** To avoid licensing and compliance costs, many enterprises remain unregistered or under-report their operations, escaping inspections and allowing unsafe practices to continue.
- **Labour Concentration:** As unregulated units escape occupancy and land-use checks, they overcrowd workers in premises used as both factories and dormitories, turning fires into mass-casualty incidents.
- **Cost Externalisation:** As overcrowded workplaces often employ workers without formal contracts or insurance, the economic and human costs of fires fall on workers and their families, while owners avoid the consequences of unsafe practices.
- **Weak Corrective Incentives:** As businesses profit from cutting safety costs while facing limited penalties, there is little incentive to improve fire safety, allowing the same hazardous practices to persist across the informal urban economy.

Why do cities like Tokyo experience far fewer catastrophic urban fires despite comparable urban density?

- **Design-Stage Risk Absorption:** Tokyo integrates fire safety into building design through fire-resistant materials, compartmentalisation, and mandatory firebreaks, reducing fire risk before construction.
 - **Example:** After the **1923 Great Kantō Earthquake** triggered devastating urban fires, Japan mandated fire-resistant materials and created firebreak zones in dense wooden-house areas, limiting the spread of fires.
- **Continuous Compliance Enforcement:** Japan treats fire safety as a continuous responsibility by requiring periodic inspections and certification, making non-compliance an ongoing legal liability rather than a one-time violation.

- **Example:** Under **Japan's Fire Service Act**, owners of eligible buildings must regularly submit fire safety inspection reports, with penalties for non-compliance.
- **Distributed Early Detection:** Regular maintenance ensures alarms, sprinklers, and detection systems remain functional, enabling fires to be detected early and contained before they spread.
 - **Example:** Tokyo's automatic fire alarm systems, linked directly to fire department dispatch centres, help achieve average response times of **6–7 minutes**, enabling early intervention.
- **Response Infrastructure Matching:** As fires are detected early, Tokyo uses firefighting infrastructure suited to its dense urban layout, ensuring rapid access even through narrow streets.
 - **Example:** The **Tokyo Fire Department** deploys motorcycle-mounted pump units to reach fires in narrow lanes where conventional fire engines cannot operate.
- **Institutional Learning Loop:** Early containment enables accurate investigation of fire causes, allowing lessons from each major fire to strengthen regulations and improve future fire safety.
 - **Example:** The **1972 Sennichi Department Store fire**, which killed 118 people, led to amendments to Japan's **Fire Service Act**, making sprinklers and emergency lighting mandatory in high-rise buildings.

Way Forward

- **Establish a Uniform National Fire Safety Framework:** Replace fragmented state-level regulations with a legally enforceable national fire safety code that prescribes uniform standards for prevention, inspection and emergency preparedness across all urban areas.
- **Institutionalise Digital Third-Party Fire Audits:** Mandate annual independent fire safety audits for commercial and public buildings, with reports uploaded to a digital public portal. Renewal of trade licences, occupancy certificates and insurance should be contingent upon compliance.
- **Promote Fire-Resilient Building Design:** Require compartmentalisation of large buildings through fire-rated walls and doors to confine fire and smoke within designated zones, providing critical time for evacuation and firefighting operations.
- **Strengthen Smoke Management Systems:** Make automated smoke extraction and mechanical ventilation systems mandatory in high-rise and high-occupancy buildings, recognising that smoke inhalation accounts for the majority of fire-related fatalities.

- **Develop Context-Specific Fire Response Infrastructure:** Deploy compact fire tenders, motorcycle-mounted firefighting units and other agile equipment tailored to congested markets, old city areas and informal settlements where conventional fire engines cannot operate effectively.
- **Institutionalise Community Fire Preparedness:** Make periodic evacuation drills compulsory in schools, residential complexes, hospitals and commercial establishments to familiarise occupants with emergency procedures and evacuation routes.
- **Integrate Fire Safety into School Education:** Embed practical fire safety education-including safe electrical practices, LPG handling, emergency evacuation and basic extinguisher use within school curricula to build lifelong safety awareness and community resilience.

