

**ECONOMY[GS-III]****Critical Mineral Recycling**

The Ministry of Mines is designing a Production Linked Incentive (PLI) scheme to promote the recycling of critical minerals in India.

**Status of the PLI scheme**

- The PLI scheme is yet to be finalized.

**What are critical minerals?**

- Critical minerals are the minerals essential for economic growth and national security.
- If these minerals aren't available or are concentrated in a few places, it can create vulnerabilities in supply chains.

**Significance of critical minerals for India**

- Economic Growth and Industrial Development
  - Resource Base: Critical minerals are vital raw materials for industries like electronics, automotive, aerospace, and renewable energy.
  - Manufacturing: They are essential in making semiconductors, batteries, and magnets.
- National Security and Strategic Importance
  - Defense Sector: Critical minerals are indispensable for defense technologies such as missile guidance systems and radar.
  - Reducing Dependence: Developing local sources of these minerals can reduce India's dependence on imports from politically sensitive regions.
- Transition to Clean Energy
  - Renewable Energy: Minerals like lithium, cobalt, and rare earth elements (REEs) are crucial for EV batteries and renewable energy storage.
    - Access to these minerals helps India reduce carbon emissions and adopt cleaner energy sources.
- Technological Advancements
  - Innovation: Critical minerals drive innovations in technologies like 5G networks and advanced medical devices.
    - A strong supply chain promotes research and development in cutting-edge technologies.
- **Job Creation and Skill Development**
  - Mining and Processing: Developing critical mineral resources creates jobs and enhances skills.
    - This includes both mining operations and processing facilities.

**About PLI Scheme for Recycling Critical Minerals**

- The PLI scheme will focus on recycling e-waste, also known as "urban mining," to recover important minerals.
  - The proposed PLI scheme aligns with recommendations from NITI Aayog.
  - The rules complement the Battery Waste Management Rules (BWMR), 2022.
    - BWMR, 2022 requires phased recycling of used EV lithium-ion batteries.
- Recycling of these batteries will start gradually from 2026.
- Objective: To foster a circular economy and strengthen domestic supply chains.
- Key minerals to be targeted include lithium, copper, cobalt, graphite, chromium, and silicon.
- **These minerals are essential for:**
  - Clean energy technologies like solar PV modules and wind turbines
  - Energy storage systems and electric vehicles (EVs)
  - Consumer electronics

**Benefits of Recycling minerals**

- Reducing Mining Needs: Research shows that effectively recycling critical minerals can greatly reduce the need for new mining activities.
- Environmental Conservation: Recycling helps conserve the environment and avoid the social and economic impacts of opening new mines.

**Challenges of PLI Scheme for Recycling Critical Minerals**

- **Disagreements on Beneficiaries**
  - High-Purity Extraction: Some recyclers believe only those who extract high-purity critical minerals, similar to virgin ores, should be rewarded by the scheme.
  - Black Mass Production: Others argue the scheme should also support the production of "black mass," a less pure mixture of minerals from shredded e-waste.
    - Most Indian recyclers currently can't extract battery-grade minerals from black mass.

- **India's Growing E-Waste Problem**
- Increase in E-Waste: The amount of e-waste in India is increasing rapidly due to the growth of solar panels, wind turbines, and electric vehicles (EVs).
- Projections: By 2030, India is expected to have:
  - 340,000 tonnes of solar panel waste (up from 100,000 tonnes in 2023)
  - 500,000 tonnes of used EV batteries needing recycling

### **AGRICULTURE: MSP [GS-III]**

#### **Legalising Minimum Support Price in India**

The recent increases in Minimum Support Prices (MSP) for 14 kharif crops have disappointed farmers, as they do not adequately reflect the rising input costs.

#### **What is MSP?**

The Minimum Support Price (MSP) is a minimum price for any crop at which the government purchases it from farmers, and is based on a calculation of at least one-and-a-half times the cost of production incurred by the farmers.

MSP does not have any legal basis but has been implemented since the 1960s with the following objectives:

- Ensuring food security in the country.
- Protection from price drop for farmers
- Incentivise desirable crop production.

#### **Importance of MSP:**

- **Safeguard against Price volatility:** The system of MSP acts as a tool for the government to control sharp falls and rises in the prices of any crops
- **Surety of minimum prices:** The MSP is announced before the sowing season so that farmers can make an informed decision. Hence, supporting farmers from distress sales.
- **Control crops short in supply:** by offering more price support for these crops so that more and more farmers are tempted to grow these crops.
- **Crop Diversification:** MSP for crops promotes their diversification and curbs import-dependence and food inflation (e.g., there was a notable increase in the MSP of pulses and oilseeds in 2021 in order to incentivise its domestic production)
- **Food security:** The government can use these crops to be sold at government fair price shops at a price lower than the market rate to the below poverty line people at a lower price.
- **Developmental schemes like PM-POSHAN, ICDS, Anganwadi Services Scheme, and TPDS** rely on grains procured by FCI at MSP.

#### **Limitations of MSP:**

- **Lack of legal guarantee:** Farmers cannot demand MSP as a matter of right. The only crop where MSP payment has some statutory element is sugarcane.
- **Issues with the cost of production:** Farm activists say that the 1.5-times MSP formula — originally recommended by the National Commission for Farmers headed by agricultural scientist M S Swaminathan should have been applied to the C2 costs.
- **Lack of effective data:** The CACP does not do any field-based cost estimates itself.
- **Ineffective coverage:** Though government announces MSP for 23 crops only.
- **Highly unequal across states:** In 2019-20 roughly 90% of the rice produced in Punjab, and Haryana was procured by the government whereas roughly 1% was procured in Karnataka and Gujarat.
- **Ineffectively Implemented:** The Shanta Kumar Committee, in its report in 2015, stated that only 6% of farmers receive MSP, which directly means that 94% of the farmers in the country are deprived of the benefit of the MSP.
- **Lack of awareness:** NITI Aayog on the MSP revealed that only 10 per cent of the farmers were aware of MSP prices right price before the sowing season.

Therefore, the legalization of MSP is needed:

1. Legalizing MSP enables farmers to claim MSP rights, enforceable through courts.
2. Improved price realization from the private sector could boost the rural economy.
3. Diversification of any of the MSP crops helps farmers avoid the high input costs of select crops.
4. Increased production of pulses and millets promotes climate-smart agriculture.

However, there are major impediments to legalizing it:

- It would lead to a heavy subsidy burden on the government.
- **Ineffective grain management:** Legalising MSP will further aggravate the issues related to grain management in India.
- **Market distortion** as the natural cycle of demand-supply would be disturbed.

- It is more of a “One size fits all” approach; as the ultimate solution for agricultural stagnation in the country is not MSP.

Legalizing MSP alone doesn’t ensure financial sustainability in farming. Income-support schemes like PM-KISAN and price deficiency systems like PM-AASHA offer more progressive solutions.

As suggested by the Swaminathan Commission the methods of calculation need to be restructured to make it more profitable for farmers and encourage crop diversification. But at the same time, other aspects such as irrigation, soil, irrigation, knowledge input, etc. also need to be considered to impart holistic development in the agricultural sector of the country.

### **GS PAPER-3- INDIAN ECONOMY AND ISSUES RELATING TO PLANNING, MOBILIZATION OF RESOURCES, GROWTH, DEVELOPMENT AND EMPLOYMENT**

#### **Need for De-dollarization**

The article critically examines India’s dollar-denominated economic targets and advocates for a shift towards rupee-based goals. China and India are reducing their dependence on dollar reserves: China’s US Treasury holdings now comprise less than 25% of its \$3.2 trillion reserves, while India has also increased its gold reserves by purchasing 24 tonnes from January to April 2024, up from 16 tonnes in 2023.

What are the reasons behind wider acceptance of dollars in the global economy?

- Safe Haven**– The US dollar remains the preferred safe haven currency and is widely used for international transactions.
- Euro’s Role and Limitations** –The euro has not filled this role due to the Eurozone’s rapid expansion without sufficient fiscal controls.
- Aggressive Behavior**-The Chinese yuan faces trust issues because of China’s perceived aggressive behavior.
- Impact of Ukraine War**-Due to the Ukraine war, Europe has become too reliant on the US for security to pursue monetary independence. The dollar dominates because other countries struggle to unite on alternative approaches

#### **What are the reasons behind the rising trend of De-dollarization?**

##### **1) Weakening of the US Dollar-**

A) After the 2008 financial crisis, many countries, including the US, printed large amounts of money to stabilize their economies. This continued during the Covid-19 pandemic to support economic recovery and prevent further downturns.

B) Following the Ukraine war, the US and its allies-imposed sanctions on Russia, which included freezing or seizing Russian dollar reserves held in international accounts.

2) **Lack Gold Backing-** The USA has delinked the dollar from gold way back in 1971. Any solution that lacks gold backing will not benefit the US dollar in the long run.

##### **3) Future Scenarios-**

A) Potential creation of a gold-backed reserve currency by a group of nations may diminish the dominance of the dollar in the near future.

B) In 2021, the US Fed reported that 45% of US cash dollars are held overseas, mostly in \$100 notes, by governments, individuals, and criminal groups. Predicting their future moves, like possibly shifting to cryptocurrency, real estate, or gold, poses significant challenges to the dollar’s dominance.

4) **Worsening US Economic Situation-** US national debt rose sharply from 7.8% of GDP in 1971 to 120% in 2023. In recent years, the US has been accumulating \$2 trillion in additional debt annually.

What should be the way forward for India?

- India should gradually reduce its dependence on the dollar in its economy.
- India should set its national economic goals based on real rupee terms rather than dollar values. This approach aligns with India’s capability to manage and control its own macroeconomic policies effectively.

### **GS PAPER-3-ECONOMY**

#### **Impacts of Heatwaves on India’s Core Industrial Sectors**

The article discusses how India’s core industrial sectors slowed down in May due to a severe heatwave. Despite this, coal and electricity sectors grew. The article also mentions a rebound in factory activity in June as indicated by the HSBC India Manufacturing PMI.

#### **How Did the Heatwave Affect India’s Core Industrial Sectors?**

- Power Demand Increase:** Due to the heat, there was a higher usage of cooling systems, leading to increased demand for electricity. Power generation expanded by 12.8%.
- Coal Production Boost:** Coal production, necessary for power plants, grew by 10.2% to meet the rising electricity demand.
- Decrease in Other Sectors:** Production in sectors like crude oil, fertilizers, and cement declined due to reduced activity. For example, fertilizer production contracted for the fifth consecutive month, highlighting ongoing challenges in agriculture.

4. **Construction Slowdown:** The extreme heat led to decreased construction activities, which lowered the demand for cement and steel.

**What Challenges Does the Manufacturing Sector Face?**

1. **Heatwave Impact:** The severe heatwave in May significantly lowered factory output to a three-month low, illustrating vulnerability to extreme weather conditions.
2. **Rising Costs:** Increases in staff expenses, material costs, and transportation led to higher manufacturing costs. This has forced companies to raise their selling prices, the largest increase observed in over two years.
3. **Inflationary Pressures:** The higher costs are contributing to inflation within the sector, complicating pricing strategies and potentially reducing competitiveness.
4. **Decreased Confidence:** Future output confidence dipped to a three-month low, indicating worries about ongoing economic conditions despite a rebound in June's PMI (India Manufacturing Purchasing Managers' Index), which stood at 58.3, up from 57.5 in May.

**Way forward**

The upcoming Union Budget is an opportunity for policymakers to implement changes to support key industrial sectors. This could help maintain and strengthen economic momentum despite recent challenges.

**PRELIM FACT**

**1.Coking Coal**

- India's Steel Ministry is **looking to diversify its sourcing of coking coal**, with Russia and Mongolia identified as key new markets

**Coking Coal:**

- **About:** Coking coal, also **known as metallurgical coal**, is essential for producing high-quality coke.
- **Role:** This substance is a crucial fuel and reactant in the blast furnace process of primary steelmaking.
- **Characteristics:** Coking coal is **characterised by low ash, moisture, sulfur**, and phosphorus content.
  - It can be classified as a type of bituminous coal based on its chemical composition.
- **Reason for Imports:** India, the **world's second-largest producer of crude steel**, also leads as the largest importer of coking coal, a critical raw material for steel production. The domestic demand stands at 57 million tonnes (mt), with the majority fulfilled through imports.
- **By products from coke production:** Tar, benzole, ammonia sulphate, and sulphur.

**2.Cyclone Freddy**

- The **World Meteorological Organization (WMO)** has stated that cyclone Freddy, which struck southeast Africa in early 2023, is the longest-lasting tropical cyclone ever recorded.

**Cyclone Freddy:**

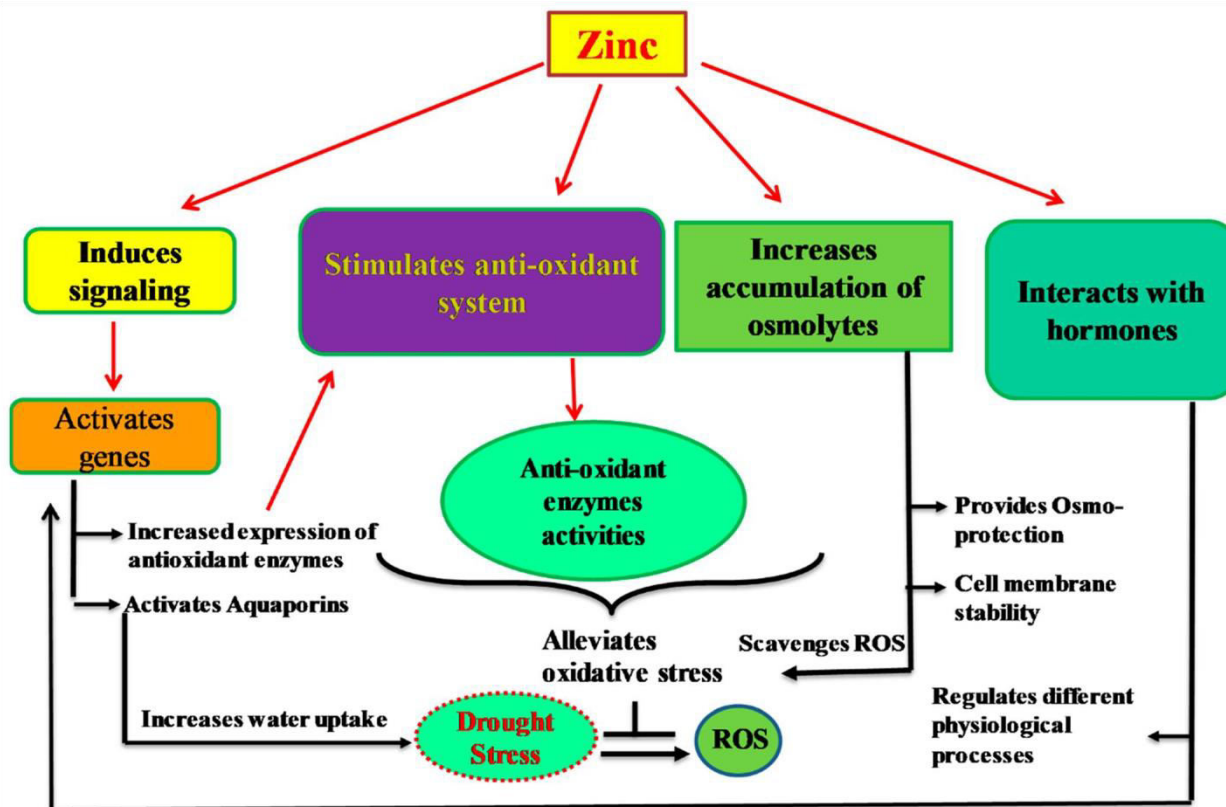
- **Origins:** It started **near the northern coast of Australia** in 2022.
- **Longevity:** Cyclone Freddy made history by lasting as the longest-lived tropical cyclone on record, maintaining its strength for an unprecedented 36 days.
- **Energy Accumulation:** Freddy gathered an extraordinary amount of energy, akin to an entire North Atlantic hurricane season, fueled by warm sea surface temperatures in the southern Indian Ocean.
- **Impacts:** The cyclone caused extensive internal displacement, affecting around 1.4 million people across six African countries.
  - Malawi recorded the highest displacement, impacting 659,000 people, and reported significant loss of life, with 12,000 deaths or missing individuals.

**3.Zinc's role in making legumes resilient to climate change**

Researchers have discovered that zinc plays a crucial role in enhancing the health and climate resilience of legume crops.

- The study reveals zinc's importance in nitrogen fixation, where atmospheric nitrogen is converted into ammonia, essential for plant growth.
- Legumes form a symbiotic relationship with rhizobia bacteria, which fix atmospheric nitrogen in root nodules sensitive to environmental factors like temperature, drought, and soil salinity.
- The study also identified a transcription factor called Fixation Under Nitrate (FUN) that controls nodule breakdown when soil nitrogen levels are high.

Zinc acts as a secondary signal to regulate nitrogen fixation efficiency, with the zinc sensor FUN playing a key role. Understanding how zinc and FUN regulate nitrogen fixation can help optimize this process in legume crops, leading to increased nitrogen availability, improved yields, and reduced reliance on synthetic fertilizers.



#### 4. Abhaya Mudra

Rahul Gandhi invoked the 'abhaya mudra' during his first speech as Leader of Opposition in Lok Sabha.

1. Abhaya Mudra is a gesture characterized by an open palm facing outward, often interpreted as a signal to stop.
2. It is known as the "fearlessness gesture," derived from the Sanskrit word "abhaya" meaning fearlessness.
3. Symbolism: It represents protection, peace, and the dispelling of fear. In yoga, it is believed to promote courage and reduce fear and anxiety.
4. It is common in many South Asian religions, including Hinduism, Buddhism, Jainism, and Sikhism. It is particularly significant in Thailand and Laos, where it is associated with images of the walking Buddha.
5. According to a Stanford University newsletter, "the open palm gesture likely originated as a natural sign of good intentions, used since prehistoric times. The raised, unarmed hand proposed friendship or peace.
6. In antiquity, it also symbolized power, as seen in the "magna manus" of Roman Emperors, who used the gesture to legislate and grant peace simultaneously.
7. The gesture appears to have evolved from a universal form of human communication, later integrated into major South Asian religions.

Religious significance in Buddhism

**Buddha and Devadatta:** A legend recounts that Devadatta, a jealous cousin of Buddha, tried to kill Buddha by unleashing a rampaging elephant. As the elephant approached, Buddha displayed the Abhaya Mudra, calming the animal instantly. This gesture thus symbolizes not only the calming of the senses but also the absence of fear.

#### 5. Polio Vaccine

Poliovirus is now restricted to rural pockets of Afghanistan and Pakistan, is reappearing in cities due to vaccine hesitancy. The WHO's Global Polio Eradication Initiative is expected to miss its 2024 deadline for eradication.

##### Key Developments in Polio Vaccine

1. **Discovery of Poliovirus Growth in Non-Nerve Cells:** In 1948, microbiologists John F. Enders, Thomas Weller, and Frederick Robbins found a way to grow poliovirus in non-nerve cells, which was a breakthrough that enabled mass production for vaccine research.
2. **Salk's Inactivated Polio Vaccine (IPV):** Jonas Salk developed the first successful polio vaccine by inactivating the virus with formaldehyde. This vaccine induced systemic immunity by being injected into muscles.
3. **Sabin's Oral Polio Vaccine (OPV):** Albert Sabin created a live, weakened vaccine administered orally. It induced strong mucosal immunity and directly target the virus's entry point in the gut.

**4. Global Impact and Strategy:**

- i) Countries used a combination of IPV and OPV to combat polio. OPV’s ease and superior protection were pivotal in high-incidence areas, while IPV was used when polio cases dropped to zero due to its enhanced safety.
- ii) Notably, both vaccines were not patented, allowing widespread use.

**5. Challenges:** Despite these efforts, eradication remains elusive due to challenges like misinformation and limited access in conflict zones. Continued global cooperation and vaccination campaigns are crucial to achieving complete eradication.

**Comparative Advantages and Challenges**

IPV (Inactivated Polio Vaccine)	OPV (Oral Polio Vaccine):
1. Safer as it contains inactivated virus particles. 2. Induces systemic immunity, protecting blood and organ systems. 3. Requires syringes and trained personnel for administration.	1. Easier to administer, needing no syringes or trained personnel. 2. Induces mucosal immunity, offering greater protection at the viral entry site. 3. Rarely, the weakened virus can revert and cause

**ANSWER WRITING**

**Q. Stampedes at mass gatherings continue to pose a significant threat to public safety in India, often resulting in tragic loss of life. Analyze the socio-economic, psychological, and administrative factors contributing to such incidents. Suggest comprehensive strategies to mitigate the risk of stampedes in the future.**

Recently, a tragic stampede in Hathras, Uttar Pradesh, claimed the lives of around 121 people, mostly women, during a religious gathering. Stampedes, characterised by impulsive mass movements of crowds, often result in severe injuries and fatalities. Notably, 79% of all stampedes in India between 1954-2012 occurred during religious mass gatherings, as reported in the study “Human Stampedes During Religious Festivals: A Comparative Review of Mass Gathering Emergencies in India.”

**Stampedes: Threat to Public Safety in India:**

- **Loss of Lives:** Stampedes often result in tragic loss of lives, primarily due to **overcrowding** and the ensuing **panic**. In crowded events like **religious gatherings** or **festivals**, a sudden surge or bottleneck can lead to people being trampled or suffocated.

**For example:** During the **2013 Kumbh Mela** in **Allahabad** (now Prayagraj), more than **36 people lost their lives** and dozens were injured in a stampede at the Allahabad railway station, triggered by pilgrims rushing to board trains.

- **Injuries and Trauma:** Beyond fatalities, stampedes cause injuries from **minor to severe**. The **chaotic nature** can lead to **pushing, falling, and getting caught in the crush**, resulting in **fractures, bruises, and internal injuries**. Survivors often suffer **long-lasting psychological trauma** from the harrowing experience.

**For example:** In **2013, Ratangarh Temple stampede** in **Datia district, Madhya Pradesh** left at least **115 people injured**, with many sustaining fractures and bruises.

- **Social and Economic Disruption:** Stampedes not only affect individuals directly involved but also have broader social and economic repercussions. They can disrupt **public order, strain emergency services, and impact local businesses/ infrastructure**.

**For example:** The stampede at **Elphinstone Road railway station footbridge** in **Mumbai** in **2017** is a stark example of the social and economic disruption caused by such incidents.

**Factors Contributing to Stampedes in India:**

**Socio-economic Factors:**

- **Overcrowding due to High Population Density:** India’s large population density means that events, especially **religious gatherings**, often **attract massive crowds**. This can lead to overcrowding, which heightens the risk of stampedes as people jostle for space.

**For example:** The **2013 stampede** at the **Allahabad Railway Station** during the **Kumbh Mela**, where **millions gather for the festival**, highlighted how high population density and the influx of pilgrims can lead to overcrowding and subsequent stampedes.

- **Poverty and Lack of Infrastructure:** **Limited financial resources** in many regions of India result in **poor infrastructure**, such as narrow pathways, inadequate exits, and insufficient safety measures, which contribute to the severity of stampedes.

**For example:** The **2005 stampede** at **Mandher Devi temple** in **Maharashtra** was exacerbated by **inadequate infrastructure**

- **Cultural and Religious Practices:** India's rich cultural and religious traditions often involve large gatherings, where **safety measures** may be **overlooked** in favour of **accommodating as many participants as possible**. **For example:** The **2011 Sabarimala stampede** in **Kerala** occurred during a religious pilgrimage where the sheer number of devotees far exceeded the capacity of the venue

**Psychological Factors:**

- **Panic and Fear:** In a crowded setting, any **unexpected event or rumour** can quickly lead to panic, causing people to **rush without direction**, which can result in a stampede. **For example:** The **2014 stampede** at the **Gandhi Maidan** in **Patna** during **Dussehra celebrations** saw panic spreading rapidly after rumours of a live wire causing a rush and resulting in a deadly stampede.
- **Herd Mentality:** When people are in large groups, they often follow the actions of those around them without **individual decision-making**, especially in **high-stress situations**. **For example:** The **2008 stampede** at the **Naina Devi temple** in **Himachal Pradesh** was driven by **herd mentality**
- **Desperation and Urgency:** In situations where individuals feel a strong need to reach a particular place or event quickly, the urgency can lead to **chaotic** and **unsafe movements** within a crowd.

**Administrative Factors:**

- **Inadequate Crowd Management:** Effective crowd management is often lacking, with **insufficient planning** and **control measures** to ensure orderly movement. This deficiency can create chaotic conditions, increasing the risk of stampedes.
- **Deficient Emergency Preparedness:** Many events suffer from a lack of emergency preparedness, with **no clear evacuation plans** or readily available **medical support**. **For example:** The **2008 Jodhpur stampede** at **Chamunda Devi temple** highlighted the lack of a well-prepared emergency response.

**Strategies to Mitigate the Risks of Stampedes in the Future:**

- **Enhanced Crowd Management:** Implementing effective crowd control measures, such as **designated entry and exit points**, **barriers**, and **trained personnel**, can help manage the flow of people and prevent overcrowding.
- **Improved Infrastructure:** Upgrading venues with **wider pathways**, **multiple exits**, and **robust safety barriers** ensures that large crowds can move safely and evacuate quickly in case of an emergency.
- **Emergency Preparedness:** Developing and regularly updating **comprehensive emergency plans**, including **clear evacuation routes** and readily available **medical aid**, ensures **prompt and efficient responses** to crises. **For instance:** After the tragic stampede at the **Chamunda Devi temple** in **Jodhpur** in **2008**, **authorities emphasised emergency preparedness** by developing comprehensive plans, establishing clear evacuation routes, and ensuring the availability of medical aid to provide prompt and efficient responses to any future crises.
- **Public Awareness Campaigns:** Educating the public on **safe behaviour** during **large gatherings** and the importance of remaining **calm in emergencies** can reduce panic and the risk of stampedes.
- **Use of Technology:** Leveraging technology, such as **surveillance cameras**, **real-time crowd monitoring systems**, and **mobile apps for communication**, can help authorities track crowd movements and respond quickly to potential hazards. **For example:** During the **Kumbh Mela(2021)** in **Haridwar**, authorities utilised surveillance cameras, real-time crowd monitoring systems, and mobile apps to track crowd movements and respond swiftly to potential hazards, ensuring the safety of millions of attendees.

Leveraging AI for real-time crowd monitoring and predictive analytics has the potential to revolutionise public safety at mass gatherings in India. Additionally, enhanced virtual reality training and smart infrastructure will transform event management, making large-scale events safer and more efficiently controlled.

**MCQS**

1. Consider the following statements about the Battery Waste Management Rules (BWMR), 2022:
  1. The rules cover all types of batteries including electric vehicle batteries.
  2. The BWMR mandated phased recycling of used electric vehicle (EV) lithium-ion batteries from 2022.
3. Producers of batteries are accountable for managing the waste generated by their products under the BWMR. Which of the above statements is/are correct?
  - a) 1 and 2 only
  - b) 1 and 3 only
  - c) 2 and 3 only
  - d) 1, 2, and 3
2. Consider the following statements: The Government of India provides Minimum

Support Price for niger (*Guizotia abyssinica*) seeds.

1. Niger is cultivated as a Kharif crop.
2. Some tribal people in India use niger seed oil for cooking.

How many of the above statements are correct?

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

3. Consider the following statements:

1. Zinc is essential for the human body and plays a role in immune function, DNA synthesis, and cell
2. Zinc deficiency is rare and has no significant impact on
3. The human body can store excess zinc for long periods, similar to fat-soluble

How many of the above statements is/are correct?

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

4. With reference to Global India AI Summit 2024, consider the following statements:

1. Ministry of Electronics and Information Technology (MeitY) is hosting Global India AI Summit 2024.
2. The Summit aims to position India as a global leader in AI innovation.
3. Application of AI in space exploration is one of the key focus areas of the Summit.
4. 'AI for Climate Change' is a theme of the Global India AI Summit 2024.

How many of the statements given above are correct?

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

5. Consider the following statements:

1. India is the largest importer of coking coal in the world.
2. Mongolia is major coking coal exporting country to India.

Which of the statement(s) given above is/are correct?

- a) **1 only**                      b) 2 only  
c) Both 1 and 2                      d) Neither 1 nor 2

6. Consider the following

1. The Central Government sets a minimum support price (MSP) for various crops every year based on a formula that takes into account both paid-out costs (A2) such as seeds, fertilizers and pesticides as well as the imputed value of unpaid family labor (FL).
2. There is currently no statutory backing for the MSP, nor any law mandates their
3. The Central Government procures almost all the stocks of wheat and rice crops throughout the country at MSP

How many of the above statements is/are correct?

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

7. With reference to Buddhist Mudras, consider the following pairs:

S. No	Mudra	Meaning
1.	Bhumisparsha Mudra	Moment of the Buddha's enlightenment.
2.	Dharmachakra Mudra	Generosity, compassion, and the granting of wishes.
3.	Abhaya Mudra	Warning or Protection against evil forces.

How many of the above pairs are correctly matched?

- a) **Only one pair**                      b) Only two pairs  
c) All three pairs                      d) None of the pairs

8. Consider the following statements regarding coking coal:

1. Coking coal is primarily used in the production of steel.
2. India has abundant reserves of high-quality coking coal.
3. The global demand for coking coal is significantly declining due to the increased use of renewable energy sources.

Which of the above statements is/are correct?

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

9. Consider the following statements about Polio Vaccine:

1. Oral Polio Vaccine (OPV) contains live attenuated polioviruses.
2. The Oral Polio Vaccine vaccine provides a much greater degree of protection relative to the Inactivated Polio Vaccine.

Which of the statements given above is/are correct?

- a) 1 only                      b) 2 only  
c) **Both 1 and 2**                      d) Neither 1 nor 2

10. With reference to Water Hyacinth, consider the following statements:

1. It grows slowly in aquatic environments.
2. It blocks sunlight and oxygen from reaching submerged plants.
3. It is helpful in bioremediation of wastewater by absorbing pollutants.

Which of the statements given above are correct?

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