



**UPSC  
Mentorship**  
A Unit of Mentorship India

# DAILY CURRENT AFFAIRS

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SOURCES



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## GS I

# 1. First batch of elephants begins journey to Mysore to take part in Dasara festivities

**Source:** The Hindu

**Context:** The first batch of nine caparisoned elephants that will take part in the Mysuru Dasara festivities in October began their journey from the Veeranahosahalli gate.

**Event Overview:**

- **Occasion:** The arrival marks the beginning of preparations for the Mysuru Dasara festivities, which start on October 3.

**Elephant Journey:**

- **Starting Point:** Veeranahosahalli gate on the outskirts of Nagarahole Tiger Reserve.
- **Journey Type:** The event, known as 'Gajapayana,' is a ceremonial march of the elephants from jungle camps to the city of Mysore.

**Lead Elephant:**

- **Name:** Abhimanyu
- **Role:** Abhimanyu will carry the golden howdah during the Jamboo Savari, a prominent feature of the Dasara celebrations.

**Public and Cultural Significance:**

- **Public Interest:** The ceremonial march and the arrival of the elephants drew significant public attention and set the stage for the upcoming festivities.
- **Cultural Tradition:** The participation of the caparisoned elephants is a traditional and integral part of the Mysuru Dasara celebrations.

**Key Facts about the Elephant:**

- **Project Elephant:**
  - Initiation and Objectives:
  - Launched in 1992 as a Centrally Sponsored Scheme.
  - **Aims:** Protect elephants, their habitat, and migration routes; address human-elephant conflicts; and improve welfare of captive elephants.
- **Status and Distribution:**
  - India houses over 60% of wild Asian elephants.
  - 31 elephant reserves exist, covering approximately 76,508 sq km in 14 states.
  - Notable reserves include Dandeli (Karnataka), Singphan (Nagaland), and Lemru (Chhattisgarh).
- **Asian Elephants:**
  - **Three subspecies:** Indian, Sumatran, Sri Lankan.
  - Known for the longest gestation period (up to 22 months).
  - Matriarch leads the herd; smaller herd sizes compared to African elephants.
- **Conservation Challenges:**
  - **Habitat Loss:** Shrinking due to human activities.
  - **Fragmentation:** Habitat divided by infrastructure and settlements.
  - **Unlawful Killing:** Retaliation and poaching for ivory.





- **Poaching:** Targeted mainly at males with tusks.
- **Project Goals and Measures:**
  - Protect elephants and their habitat.
  - Reduce human–elephant conflicts.
  - Promote elephant–friendly policies.
- **Steps Taken:**
  - Improved infrastructure in reserves.
  - Anti–poaching and anti–depredation teams deployed.
  - **Awareness Programs:** Gaj Yatra to highlight the importance of elephant conservation.

## 2. Was the Sicily yacht hit by a waterspout? Meteorologists explain how climate change fuels storms

**Source:** Euro News

**Context:** Recently, a luxury yacht sank off Sicily, Italy, during a violent storm, resulting in one confirmed death and six individuals missing, possibly due to a waterspout.

**Waterspouts:**

- Waterspouts are **striking meteorological phenomena** characterised by rotating columns of air that form over water surfaces.
- These tornado–like formations, often seen over seas or large lakes, are typically less intense than tornadoes, lasting around 5–10 minutes with an average diameter of about 50 metres (165 feet).
- Wind speeds in waterspouts can reach up to 100 km/h (60 mph).

**Formation and Types:**

Waterspouts develop through specific conditions:

- **Fair–Weather Waterspouts:**
  - Occur when cool air moves over warm water, drawing water upwards to form the spout.
  - These are generally less intense and are not associated with thunderstorms.
- **Tornadic Waterspouts:**
  - These are essentially tornadoes that form over water, often starting as tornadoes on land before moving over water.
  - They are linked to severe thunderstorms and can be accompanied by hazardous conditions like high winds, large hail, and lightning.
- **Snowspouts:**
  - Extremely rare, these waterspouts form under snow squalls and are sometimes called snow devils.
  - They are usually weak but can occasionally reach EF1 tornado strength.



### Development Stages:

Waterspouts evolve through a five-stage process:

- **Dark Spot:** A light-coloured disk appears on the water's surface, surrounded by a darker, blurred area.
- **Spiral Pattern:** Bands of light and dark colours spiral outward from the dark spot.
- **Spray Ring:** The dark spot generates a swirling ring of sea spray, resembling the eye of a hurricane.
- **Mature Vortex:** The spray ring forms a spinning funnel extending from the water's surface to the clouds.
- **Decay:** The vortex weakens and dissipates as warm air disrupts it.

### Geographical Occurrence:

- While waterspouts are most common in tropical and subtropical regions, they can also appear in various global locations, including Europe, the Middle East, and even Antarctica.
- Recent studies, such as one from the University of Barcelona, indicate that warmer sea surface temperatures may increase the frequency of waterspout events.
- For example, sea surface temperatures near Sicily have been recorded as 2.5 to 3 degrees Celsius above the long-term average, potentially leading to more frequent waterspouts in the region.

## GS II

### 3. Centre plans to take caste count during Census

Source: The Hindu

**Context:** The Indian Census, a vital tool for demographic analysis and policy-making, has faced delays and controversy in recent years.

#### Key Points:

- **Census Delay and Planning:**
  - The Census, last conducted in 2011, was initially planned to occur in two phases: **houselisting and housing schedule** in 2020, and **population enumeration** in 2021.
  - The process has been delayed indefinitely, with the National Population Register (NPR) also pending updates.
  - The Census was disrupted primarily due to the COVID-19 pandemic.
- **Caste Enumeration Debate:**
  - There is ongoing discussion about including caste enumeration in the upcoming Census. This discussion arises from persistent demands by various political parties and stakeholders.
  - A caste census has not been conducted since the 1931 Census, which recorded a broad array of castes.
  - The 2011 Socio-Economic and Caste Census (SECC), a separate exercise, recorded a significantly higher number of castes and sub-castes but faced criticisms for inaccuracies.
  - The Union government's affidavit to the Supreme Court in 2021 criticised the SECC data for containing numerous errors and questioned its reliability for policy decisions.



- **Methodological Changes and Innovations:**
  - The **upcoming Census is expected to be the first digital Census**, allowing respondents to complete their questionnaires online, which aims to streamline data collection.
  - The first phase, houselisting and housing schedule, has 31 questions, while the second phase, population enumeration, has 28 questions pending finalisation.
- **Recent Developments:**
  - Bihar recently published a caste census report in 2023, using a list of 215 caste categories for enumeration.
  - Karnataka commissioned a caste census in 2015, but the results remain unpublished.

**Conclusion:**

The delay in conducting the Census and the potential inclusion of caste data reflect broader concerns about demographic accuracy and policy implications. Accurate and timely data collection is crucial for informed policy-making and social planning. As the Union government navigates these complex issues, it must address both methodological concerns and the need for comprehensive and transparent data collection.

## 4. Prime Minister addresses the Indian Community in Poland

**Source:** PIB

**Context:** Prime Minister addressed the Indian diaspora at an event organised in his honour by the Indian community in Warsaw today.

**India-Poland Relations: An Overview:**

- **Background:**
  - **Diplomatic Ties:** India and Poland established diplomatic relations in 1954, with India opening its embassy in Warsaw in 1957.
  - **Shared Ideals:** Both countries have historically opposed colonialism, imperialism, and racism.
  - **Communist Era Relations:** During Poland's communist period (1944-1989), the two nations enjoyed close and cordial relations, marked by regular high-level visits, trade, and economic interactions, facilitated by state trading organisations and rupee clearing arrangements.
  - **Post-1989 Developments:** The relationship remained strong after Poland transitioned to democracy in 1989. With Poland's accession to the European Union in 2004, the bilateral relationship grew, with Poland becoming a significant economic partner for India in Central Europe.
- **Economic and Commercial Relations:**
  - **Trade:**
    - Poland stands as India's largest trade partner and export destination in Central Europe. Bilateral trade increased nearly seven-fold over the past decade.
    - In 2019, bilateral trade reached USD 2.36 billion. Polish imports accounted for only 0.15% of India's total imports, while Indian exports to Poland constituted 0.48% of India's total exports.
    - There was a 2.5% increase in bilateral trade in 2019 compared to previous years.



- **Investment:**
  - Indian investments in Poland exceed USD 3 billion.
  - Polish investments in India are estimated at USD 672 million.
  - From April 2000 to March 2019, Poland contributed USD 672 million in Foreign Direct Investment (FDI) to India, representing 0.16% of India's total FDI inflows during this period.
- **Cultural and Educational Relations:**
  - **Indology:** Poland has a rich tradition of Indology, with Polish scholars translating Sanskrit into Polish as early as the 19th century.
- **Commemorations:**
  - In 2019, Poland celebrated the 150th anniversary of Mahatma Gandhi, including the issuance of a commemorative stamp by the Polish Post (Poczta Polska).
  - Events were organised at Gurudwara Sahib, Poland, for the 550th Prakash Purab of Guru Nanak Dev ji.
- **International Day of Yoga:** On June 21, 2015, Poland marked the first International Day of Yoga with events across 21 cities, drawing around 11,000 participants.
- **Indian Community in Poland:** The Indian community, estimated at about 10,000, includes traders (textiles, garments, electronics) who arrived after the fall of communism, as well as professionals working with multinational or Indian companies, software/IT experts, and a growing number of students.

## GS III

### 5. Thailand reports Mpox case in traveller from Africa

**Source:** The Indian Express

**Context:** Thailand has detected an mpox case in a European man.

**Mpox:**

- **Mpox (Monkeypox):** Mpox is a viral disease caused by a DNA virus from the Poxviridae family. Initially identified in monkeys in 1958, it has since been known to infect humans as well.
- **Transmission:** Mpox is mainly spread to humans through direct contact with infected animals (mainly rodents and primates) or contaminated objects.
- **Symptoms:** Human infections typically start with fever, headache, and muscle aches, followed by a distinctive rash that evolves from macules to papules to vesicles and pustules.
- **Vaccination:** There is a vaccine for mpox, but it is not widely available, and its effectiveness varies.
- **Global Outbreaks:** Mpox gained significant attention during a global outbreak in 2022-2023, affecting over 100,000 people in more than 118 countries. This outbreak featured high human-to-human transmission, particularly through close contact and sexual routes.
- **WHO Declaration:** The World Health Organization declared the outbreak a public health emergency, prompting global efforts to control it.
- **Genomic Features:**
  - **Clades:** Mpox viruses are divided into clades I and II, with clade IIb, which emerged during the 2022 outbreak, showing better adaptation for human-to-human transmission.





- **Genomic Accordion:** This refers to the virus's ability to expand or contract its genome through gene duplication or deletion, adapting to different hosts and conditions.

**Difference Between Smallpox, Chicken Pox, Mpox:**

Feature	Smallpox	Monkeypox	Chickenpox
Virus	Variola virus	Monkeypox virus	Varicella-zoster virus (VZV)
Severity	Highly severe, often fatal	Milder than smallpox, rarely fatal	Mild
Status	Eradicated in 1980	Endemic in Central and West Africa, cases emerging elsewhere	Common childhood illness, less common due to vaccination
Transmission	Highly contagious through respiratory droplets and contact with infected lesions	Spread through contact with infected animals, lesions, or bodily fluids	Highly contagious through respiratory droplets and contact with lesions
Symptoms	Fever, headache, severe fatigue, vomiting, followed by a deep-seated, pus-filled rash	Fever, headache, swollen lymph nodes, followed by a rash that progresses through stages	Fever, fatigue, loss of appetite, followed by an itchy, fluid-filled rash
Vaccination	No longer needed	Not routinely recommended, may be given to high-risk individuals	Routine vaccination for children and adults who haven't had chickenpox





## 6. Genome Editing- ISDra2TnpB

**Source:** The Indian Express

**Context:** A recent breakthrough in plant genome editing comes from a collaborative effort between the ICAR-National Rice Research Institute in Cuttack, India, and Pennsylvania State University, USA.

**Genome Editing:**

- Genome editing enables precise modifications to an organism's DNA, offering transformative potential in agriculture by enhancing crop yields, resistance to pests and diseases, and introducing traits such as drought tolerance.
- The most renowned tool in this field is CRISPR, known for its precision and efficiency.

**CRISPR Limitations in Plant Editing:**

- CRISPR technology, using proteins like Cas9 and Cas12, is effective in genome editing but faces challenges in plant systems.
- The large size of these proteins makes them difficult to deliver into plant cells efficiently, necessitating the development of smaller, more adaptable tools.

**Introducing ISDra2TnpB:**

- A new genome-editing tool, ISDra2TnpB, derived from the bacterium *Deinococcus radiodurans*, addresses these challenges. It is significantly smaller than Cas9 and Cas12, making it more suitable for plant cells.

**Key Features of ISDra2TnpB:**

- **Size Advantage:** At less than half the size of Cas9 and Cas12, ISDra2TnpB allows for efficient delivery and functionality within plant cells.
- **High Editing Efficiency:** Demonstrates a 33.58% editing efficiency in average plant genomes.
- **Versatility:** Effective in both monocot (e.g., rice) and dicot (e.g., Arabidopsis) plants.
- **Base Editing:** Includes a hybrid base editor for precise single nucleotide swaps.

**Agricultural Applications:**

ISDra2TnpB holds promise for various agricultural improvements:

- **Pest Resistance:** Can create pest-resistant crop varieties.
- **Nutritional Enhancement:** Useful for removing anti-nutrient factors, thus boosting crop nutritional value.
- **Environmental Resilience:** Potential to develop crops with improved resilience to environmental stress, such as creating shorter rice plants less susceptible to cyclone damage.



## Editorial, Ideas and Opinions

### 7. Imports weaken Indian pharma

Source: The Hindu

**Context:** India's pharmaceutical sector faces challenges due to increasing reliance on imports. Recent government measures, including global tenders for medicines and customs duty cuts on cancer drugs, could undermine domestic production.

**Key Issues and Analysis:**

- **Reliance on Imports:**
  - The government's plans to procure 120 medicines via global tenders and cut customs duties on cancer drugs aim to improve affordability but could unintentionally harm domestic pharmaceutical producers.
  - The DoE order's focus on specific brands could boost foreign market dominance and limit opportunities for local producers.
- **Challenges Faced by Domestic Producers:**
  - **Patent Protection:** Patent protection limits affordable generics and biosimilars in India, and compulsory licences for non-affordable medicines are rarely issued.
  - **Regulatory Barriers:** India's outdated biosimilar approval guidelines, requiring unnecessary animal studies and trials, hinder domestic producers' competitiveness.
- **Government Measures and Their Impact:**
  - The proposed reduction in customs duty on cancer medicines might not significantly reduce their high prices due to the already exorbitant costs of these drugs.
  - The **reliance on global tenders and duty waivers could disincentivize local pharmaceutical production**, leading to increased dependency on imports and weakening the domestic industry's capacity to innovate and remain competitive.

**Recommendations:**

- **Promote Local Production:**
  - The government should **prioritize creating a competitive environment** for critical medicines by supporting local manufacturing.
  - This can be achieved through **incentivizing domestic production and removing barriers to entry** for local companies.
- **Revise Patent and Regulatory Policies:**
  - **Compulsory Licenses:** Increase the issuance of compulsory licenses for medicines that are not affordably priced to enhance access and affordability.
  - **Regulatory Reforms:** Update the regulatory guidelines for biosimilars to align with international standards, reducing the burden on domestic producers and facilitating faster market entry.

**Conclusion:** The current approach of relying on imports and reducing customs duties, while well-intentioned, may undermine the long-term sustainability of India's pharmaceutical industry. To ensure a robust and self-reliant sector, the government must align its policies to support local production and address the regulatory and patent-related challenges faced by domestic producers. Strengthening the domestic pharmaceutical industry will not only enhance the accessibility and affordability of medicines but also secure India's position as a global leader in healthcare innovation.



## 8. Were 8 crore new jobs created in three years?

Source: The Hindu

**Context:** Prime Minister recently asserted that India created “eight crore new jobs” in the past three to four years, using data from the India-KLEMS database.

### Key Points:

- **Employment Data Claims:**
  - Net increase of 7.8 crore workers from 2020-21 to 2023-24, based on the India-KLEMS database.
  - The State Bank of India (SBI) supported this claim by comparing data from India-KLEMS with the NSSO’s **Annual Survey of Unincorporated Sector Enterprises (ASUSE)**, 2022-2023.
- **Methodological Concerns:**
  - **India-KLEMS Database:**
    - Originally an academic project, it estimates total factor productivity and includes employment data as inputs.
    - The RBI uses data from the Central Statistics Office, Census of India, and Periodic Labour Force Surveys (PLFS) for its estimates.
  - **Issues with Population Estimates:**
    - The database uses interpolated population figures from outdated sources, neglecting recent demographic changes such as reduced fertility rates.
    - Discrepancies arise from outdated projections and assumptions about uniform population growth across rural and urban areas.
- **Contradictory Trends:**
  - **International Trends:**
    - The **International Labour Organization (ILO)** notes stagnant or declining employment-to-population ratios in East Asia, South-East Asia, and the Pacific.
  - **Domestic Trends:**
    - PLFS data shows a fluctuating worker population ratio (WPR), with significant increases in unpaid, self-employment in rural areas.
    - The rise in rural female employment is largely attributed to unpaid family work rather than formal job creation.
- **ASUSE Comparison Issues:**
  - The SBI report’s claim that ASUSE data aligns with India-KLEMS is flawed due to differing sampling frames and methodologies.
  - ASUSE covers only non-agricultural establishments, while India-KLEMS aggregates data across various sectors, leading to inflated estimates.
- **Census and Data Accuracy:**
  - The lack of a recent decadal Census has led to reliance on inaccurate population projections.
  - This undermines the validity of economic analyses and fosters political narratives based on questionable data.

**Conclusion:** The employment figures presented by the government, derived from the India-KLEMS database, face significant methodological challenges and discrepancies. The reliance on outdated and interpolated population estimates, coupled with the discrepancies between different data sources, undermines the credibility of the reported job growth. Accurate, up-to-date population data is crucial for reliable economic analysis and policy formulation. The ongoing debate highlights the need for improved data collection and transparency to support effective economic policymaking.





## In Brief

### 9. Karnataka CM seeks Centre's approval to increase height of Almatti dam; to meet PM

Source: The Hindu

Context: Karnataka Chief Minister has urged the Centre to clear the decks for increasing the height of the Almatti dam over the Krishna river.

#### Almatti Dam:

- Almatti Dam, also known as the **Lal Bahadur Shastri Dam**
- Located on the **Krishna River** in Bijapur, Karnataka, India
- **Completion and Project:**
  - Completed in July 2005
  - Part of the Upper Krishna River Project (UKRP)
- **Purpose:**
  - **Multipurpose:** irrigation, flood control, and hydroelectric power generation
- **Specifications:**
  - **Gross water storage capacity:** 123.08 TMC (Thousand Million Cubic feet) at 519 meters MSL (Mean Sea Level)
  - **Power station capacity:** 290 MW
  - **Annual electrical output target:** 560 GWh (Gigawatt-hours)
- **Dispute:**
  - Karnataka and Andhra Pradesh had a dispute over the dam
  - Karnataka won a legal battle, allowing it to raise the height of the Almatti reservoir to 524 metres

#### Krishna River:

- **Second longest river** of Peninsula that flows towards east.
- Originates near **Mahabaleshwar in Western Ghats**
- **Basin states:** Andhra Pradesh, Maharashtra and Karnataka having a total area of 2,58,948 Sq.km

Left bank tributaries	Right bank tributaries
Bhima (2nd largest)	Venna
Musi (Hyderabad located at bank)	Koyna
Munneru	Panchganga



Paleru	Dudhganga
Don	Ghatprabha
	Malaprabha
	Tungabhadra (Largest)

## 10. ICAR, Penn State team makes a tool small enough to edit plant genomes

Source: The Hindu

**Context:** Researchers have developed a plant genome editor consisting of a protein derived from *Deinococcus radiodurans* bacteria — famous for being able to survive extreme conditions. The protein is less than half the size of the proteins CRISPR commonly uses to target specific parts of the DNA.

**Indian Council for Agricultural Research – Overview:**

- ICAR is an **autonomous organisation** under the **Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare, Government of India.**
- It was established on **16 July 1929.**
- ICAR was Formerly known as **Imperial Council of Agricultural Research.**
- **Headquartered at New Delhi,** ICAR has 101 institutes and 71 agricultural universities spread across the country.
- Indian Council of Agriculture Research is the **apex body for coordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences in the entire country.**
- **Union Minister of Agriculture is the ex-officio President of the ICAR Society.**
- 'ICAR Vision 2050', provides the strategic framework for innovation-led inclusive and sustainable agricultural growth in the country.



## Daily Quiz

**Q1. Which of the following statements about Mpox (monkeypox) is/are correct?**

1. Mpox is primarily transmitted to humans through contaminated water sources.
2. The 2022-2023 Mpox outbreak was associated with clade IIb, which is more adapted for human-to-human transmission.

**Which of the following options given is/are correct?**

- A. Only statement 1 is correct
- B. Only statement 2 is correct
- C. Both statements 1 and 2 are correct
- D. Neither statement 1 nor 2 is correct

**Q2. Which of the following groups of rivers are tributaries of the Krishna River?**

- A. Godavari, Tapi, and Mahi
- B. Koyna, Bhima, and Tungabhadra
- C. Ganges, Yamuna, and Chambal
- D. Yamuna, Ravi, and Chenab

**Q3. Consider the following statements about Pharmaceutical Industries of India:**

1. The Indian pharmaceutical industry is known for its significant role in producing generic drugs, and it is one of the largest suppliers of generic medicines globally.
2. The Drugs Price Control Order (DPCO), 2013, regulates the prices of all pharmaceutical drugs in India, ensuring uniform pricing across different brands and companies.

**Which of the above statements is/are correct?**

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

**Q4. Which of the following statements about the Census of India is/are correct?**

- A. The Census of India is conducted every 10 years, with the last one being held in 2011.

- B. The next Census, initially scheduled for 2021, was postponed indefinitely due to the COVID-19 pandemic.
- C. The Census includes caste enumeration as a regular part of its process since independence.
- D. The 2021 Census was the first time the process included digital data collection.

**Q5. The Almatti Dam, also known as the Lal Bahadur Shastri Dam, is situated on which of the following rivers?**

- A. Godavari
- B. Krishna
- C. Yamuna
- D. Ganges

**Q6. Which of the following statements correctly differentiate Mpox, Smallpox, and Chickenpox?**

1. Mpox and Smallpox are caused by viruses from the same family, whereas Chickenpox is caused by a virus from a different family.
2. Mpox and Chickenpox both primarily spread through respiratory droplets, while Smallpox spreads mainly through direct contact with infected bodily fluids.
3. Smallpox has been eradicated globally, Mpox continues to cause outbreaks, and Chickenpox remains endemic in many parts of the world.

**Choose the correct option given below:**

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





**Q7. Which of the following statements correctly differentiates between Asian elephants and African elephants?**

1. Asian elephants are generally smaller and have smaller ears compared to African elephants, which are larger with larger ears and two distinct species: African forest elephants and African savannah elephants.
2. African elephants are typically found in grasslands and forests across Africa, while Asian elephants are primarily located in South and Southeast Asia with significant cultural symbolism in the region.

**Which of the above statements is/are correct?**

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

**Q8. A virus is made up of \_\_\_\_\_.**

- A. Protein coat and nucleic acid
- B. Protein coat and mitochondria
- C. Nucleic acid and cell membrane
- D. Nucleic acid, cell wall and cell membrane

**Q9. ISDra2TnpB, recently in the news, is:**

- A. A new type of CRISPR protein used for gene editing in animals
- B. A genome-editing tool derived from *Deinococcus radiodurans* designed for plant cells
- C. An advanced method for improving livestock genetics
- D. A software for analyzing genomic data from various organisms

**Q10. Which of the following statements about waterspouts is/are correct?**

1. Waterspouts are typically weaker than tornadoes and can last for about 5-10 minutes.
2. Fair-weather waterspouts are usually associated with severe thunderstorms and high wind conditions.

**Which of the given options is/are correct?**

- A. (a) Only 1
- B. (b) Only 2
- C. (c) Both 1 and 2
- D. (d) Neither 1 nor 2



## Solutions

### 1. Correct Answer is B

#### Explanation:

- **Statement 1:** "Mpox is primarily transmitted to humans through contaminated water sources." **This statement is incorrect.** Mpox is primarily transmitted to humans through direct contact with infected animals, particularly rodents and primates, or through contact with contaminated objects. It is not primarily spread through contaminated water sources.
- **Statement 2:** "The 2022-2023 Mpox outbreak was associated with clade I1b, which is more adapted for human-to-human transmission." **This statement is correct.** The 2022-2023 Mpox outbreak was indeed associated with clade I1b, a lineage of the virus that has shown better adaptation for human-to-human transmission compared to other clades.

### 2. Correct Answer is B

#### Explanation:

- **Godavari, Tapi, and Mahi:** These rivers are not tributaries of the Krishna River. The Godavari and Tapi are major rivers of their own, with the Godavari flowing into the Bay of Bengal and the Tapi flowing into the Arabian Sea. The Mahi River also flows into the Arabian Sea.
- **Koyna, Bhima, and Tungabhadra:** These rivers are tributaries of the Krishna River. The Bhima and Tungabhadra are significant tributaries flowing into the Krishna, and the Koyna River also contributes to the Krishna's flow.
- **Ganges, Yamuna, and Chambal:** These rivers are part of the Ganges basin and are not tributaries of the Krishna River. The Ganges and Yamuna flow into the Bay of Bengal, while the Chambal is a tributary of the Yamuna.

- **Yamuna, Ravi, and Chenab:** These rivers are in the Indus basin and are tributaries of the Indus River, not the Krishna River. They flow into the Arabian Sea, not the Krishna River.

### 3. Correct Answer is A

#### Explanation:

- **Statement 1 is correct.** The Indian pharmaceutical industry is indeed a major player in the global market for generic drugs, contributing significantly to the supply of affordable medicines worldwide.
- **Statement 2 is incorrect.** The Drugs Price Control Order (DPCO), 2013, regulates the prices of essential medicines listed under the National List of Essential Medicines (NLEM) but does not control the prices of all pharmaceutical drugs uniformly. It primarily focuses on controlling the prices of essential medicines to ensure affordability for the public.

### 4. Correct Answer is B

#### Explanation:

- **Statement A is correct.** The Census of India is indeed conducted every 10 years, with the last one held in 2011.
- **Statement B is correct.** The 2021 Census was postponed indefinitely primarily due to the COVID-19 pandemic.
- **Statement C is incorrect.** Caste enumeration has not been a regular part of the Census since independence, except for specific surveys.
- **Statement D is incorrect.** The 2021 Census was planned to be the first digital Census, but it was delayed indefinitely, so the digital aspect did not fully materialise.



### 5. Correct Answer is B

#### Explanation:

- The Almatti Dam is located on the Krishna River, making option b) the correct answer.
- The Godavari, Yamuna, and Ganges are distinct rivers and are not associated with the Almatti Dam.

### 6. Correct Answer is B

#### Explanation:

- **Statement 1: Correct.** Mpox (Monkeypox) and Smallpox are caused by viruses from the Poxviridae family, while Chickenpox is caused by the Varicella-Zoster Virus from the Herpesviridae family.
- **Statement 2: Incorrect.** Mpox primarily spreads through contact with infected bodily fluids and lesions, while Chickenpox spreads through respiratory droplets. Smallpox also spreads through respiratory droplets and contaminated materials.
- **Statement 3: Correct.** Smallpox has been eradicated globally, Mpox is still observed in outbreaks, and Chickenpox remains endemic in many regions despite the availability of a vaccine.

### 7. Correct Answer is C

#### Explanation:

- **Statement 1:** Asian elephants are indeed smaller and have smaller ears compared to African elephants. Additionally, African elephants are categorised into two subspecies: African forest elephants and African savannah elephants.
- **Statement 2:** African elephants are spread across Africa, while Asian elephants are native to South and Southeast Asia and hold significant cultural importance in the region.

### 8. Correct Answer is A

#### Explanation:

#### A virus is composed of:

- **Protein coat:** This is known as the capsid, which protects the viral nucleic acid and

helps the virus attach to and enter host cells.

- **Nucleic acid:** This is the genetic material of the virus, which can be either DNA or RNA. It carries the instructions for replication and protein synthesis within the host cell.

#### The other options are incorrect because:

- **Option B:** Mitochondria are organelles found in eukaryotic cells and are not part of the structure of a virus.
- **Option C:** Viruses do not have cell membranes; they only have a protein coat and nucleic acid. The cell membrane is a characteristic of living cells, not viruses.
- **Option D:** Viruses do not have cell walls or cell membranes. They only have a protein coat and nucleic acid.

### 9. Correct Answer is B

#### Explanation:

ISDra2TnpB is a cutting-edge genome-editing tool developed from the bacterium *Deinococcus radiodurans*. It is designed to overcome limitations faced by traditional CRISPR proteins, such as Cas9 and Cas12, which are too large to be efficiently delivered into plant cells. ISDra2TnpB's smaller size allows it to work effectively within plant systems, making it a promising tool for precise genetic modifications in agriculture.

### 10. Correct Answer is A

#### Explanation:

- **Statement 1 is correct** as waterspouts are indeed weaker than tornadoes and generally last for about 5–10 minutes.
- **Statement 2 is incorrect** because fair-weather waterspouts are not associated with severe thunderstorms; they form under calmer conditions, while tornadic waterspouts are linked to thunderstorms.





**MAINS PRACTISE QUESTION**

Q1. Discuss the methodological issues in the India-KLEMS database that affect the reliability of employment data. How do these issues impact the interpretation of job creation claims in India? What steps should be taken to ensure accurate and reliable employment statistics?





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