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Daily MCQs: 21-09-2024

1. Consider the following statements about the GSLV Mk-III launch vehicle.

1. It is a four stage vehicle powered by a cryogenic engine in the upper stage.
2. GSLV Mk III is designed to carry 4 tonne class of satellites into Geosynchronous Transfer Orbit or about 10 tonnes to Low Earth Orbit.
3. GSLV Mk III vehicle is proposed to be used in Gaganyaan mission.

Which of the statements given above is/are correct?

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

2. What is the significance of achieving "criticality" in a nuclear reactor?

- A. It indicates the reactor is unsafe and needs to be shut down immediately.
- B. It signifies the reactor has achieved a stable, self-sustaining chain reaction.
- C. It shows that nuclear fission has ceased in the reactor.
- D. It refers to the malfunctioning of reactor safety systems.

3. Consider the following statements about the International Big Cat Alliance

- 1) It is an initiative of the World WildLife Fund.
- 2) It aims at conserving the big cats and landscapes they thrive in.
- 3) Membership to the alliance is restricted to countries with natural big cat habitats.

Which of the statements given above is/are correct?

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

4. Which of the following countries share a land border with Lebanon?

1. Israel
2. Syria
3. Turkey
4. Jordan

Select the correct answer using the codes given below

- A. 1 and 2 only
- B. 1, 2, and 3 only
- C. 1, 3, and 4 only
- D. 1, 2, 3, and 4

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5. Among the following, which one is the largest producer of milk in the world?

- A. China
- B. India
- C. Myanmar
- D. Vietnam

Solutions:

1. Answer: B

Explanation

- **Statement 1 is incorrect:** GSLV Mk-III is a **three stage vehicle** designed for catering the need of carrying **heavier communication satellites to Geosynchronous Transfer Orbit (GTO)**.
- GSLV Mk-III is powered by a core liquid engine, has two solid boosters that are used to provide the massive thrust required during liftoff, and a cryogenic engine in the upper stage.
- **Statement 2 is correct:** GSLV Mk III is designed to carry 4 tonne class of satellites into GTO or about 10 tonnes to Low Earth Orbit (LEO).
- **Statement 3 is correct:** GSLV Mk III vehicle is proposed to be used in Gaganyaan mission.

2. Answer: B

Explanation

- Achieving "criticality" in a nuclear reactor means that the reactor has reached a state where the nuclear chain reaction becomes self-sustaining.
- In a nuclear reactor, the process of nuclear fission involves the splitting of atomic nuclei (usually Uranium-235 or Plutonium-239), releasing neutrons and a significant amount of energy. These released neutrons then cause further fission in nearby nuclei, creating a chain reaction.
- When the number of neutrons produced from fission exactly equals the number of neutrons lost through absorption or leakage, the reactor is said to be "critical." This balance is essential for maintaining a steady rate of energy production.
- Achieving criticality signifies that the reactor has reached a steady operational state, where the energy produced is stable and sustainable over time. It means the reactor is functioning as designed, and the chain reaction.

3. Answer: B

Explanation

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- **Statement 1 is incorrect and Statement 2 is correct: International Big Cat Alliance (IBCA) is an initiative of India** that aims to initiate 'Big Cat Diplomacy' and will focus on the protection and conservation of seven major big cats — tiger, lion, leopard, snow leopard, puma, jaguar and cheetah and the landscapes they thrive in..
- India has now formally joined the **International Big Cat Alliance (IBCA)**, which it launched in 2023.

What are 'Big cats'?

- 'Big Cat' is a term that is used in informal speech to apply to any large species of the family *Felidae*. Usually, it applies to the members of the genus *Panthera*.
- These include:
 1. **Tiger** (*Panthera tigris*)
 2. **Lion** (*Panthera leo*)
 3. **Jaguar** (*Panthera onca*)
 4. **Leopard** (*Panthera pardus*)
 5. **Snow Leopard** (*Panthera uncia*)
- Two other cats — **Puma** (*Puma concolor*) and **Cheetah** (*Acinonyx jubatus*) — are not part of *Panthera*. But they are usually included in most listings of 'big cats'.
- The Indian subcontinent has been historically home to the **Bengal tiger, Asiatic lion, Indian leopard, Indian/Asiatic cheetah as well as Snow leopard.**
- The **cheetah** was **declared extinct** in 1952. In 2022, the Government of India embarked on an ambitious programme to **introduce African cheetahs** to the **Kuno National Park in Madhya Pradesh.**

About IBCA

- **Statement 3 is incorrect: Membership** to the alliance will be open to **97 range countries**, which contain the natural habitat of these big cats, as well as **other interested nations, international organizations, etc.**
- The purpose of this alliance is to provide a platform for **dissemination of information on benchmarked practices, capacity building, resources repository, research and development, awareness creation**, etc. with regard to **protection and conservation of the Big cats.**
- Its major activities will include advocacy, partnership, knowledge e-portal, capacity building, eco-tourism, partnerships between expert groups and finance tapping.

Governance Structure

- The IBCA's governance structure will comprise a **General Assembly** consisting of all member countries, a **council** of at least seven but not more than 15 member countries elected by the General Assembly for a term of 5 years, and a **Secretariat.**
- Upon the recommendation of the Council, the General Assembly will appoint the **IBCA Secretary General** for a specific term.

Funding Mechanism

- India has committed to provide a **total grant assistance of \$100 million**, for **5 years**, post which the IBCA is expected to **sustain itself** through membership fees, and contributions from bilateral and multilateral institutions and the private sector.

4. Answer: A

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Explanation

- Lebanon is bordered by Israel to the south and Syria to the east and north.
- It does not border Turkey or Jordan.



5. Answer: B

Explanation

- **India** is the **world's top milk producer**, with production having reached 230.58 million tonnes during 2022-23.
- The **average yield** is, however, only 8.55 kg per animal per day for exotic/ crossbred animals, and 3.44 kg/ animal/ day for indigenous/ nondescript animals.
- The yield in Punjab is 13.49 kg/ animal/ day (exotic/ crossbred), but only 6.30 kg/ animal/ day in West Bengal.
- The **national per capita availability of milk is 459 grams/ day**, which is **higher than the global average** of 323 g/ day.
- The **top five milk producing states** are **UP (15.72%), Rajasthan (14.44%), Madhya Pradesh (8.73%), Gujarat (7.49%), and Andhra Pradesh (6.70%)**, which together contribute **53.08% of the country's total milk production**.