

Solutions to MCQs – Based on Current Affairs (7 July 2025)

Q1. With reference to the *National Biobank* launched under the Phenome India initiative, consider the following statements:

1. It collects genomic and clinical data from over 1 lakh individuals annually.
2. It is modeled on the UK Biobank but customised for India's genetic diversity.
3. It will support development of indigenous CRISPR therapies in India.

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

Answer: B – 2 and 3 only

Explanation:

- ✗ *Statement 1* is incorrect: The Biobank aims to collect data from **10,000 individuals**, not 1 lakh.
- ✓ *Statement 2* is correct: It is **inspired by the UK Biobank** but reflects India's ethnic and lifestyle diversity.
- ✓ *Statement 3* is correct: It will help develop **low-cost CRISPR-based gene therapies**.

Q2. Which of the following correctly distinguishes Pressurised Heavy Water Reactors (PHWRs) from other reactor types?

- A. They use enriched uranium as fuel and heavy water as coolant.
- B. They use natural uranium and require frequent shutdown for refuelling.
- C. They allow online refuelling and use heavy water as both moderator and coolant.
- D. They are based on thorium breeding cycle and use molten salt as coolant.

Answer: C – They allow online refuelling and use heavy water as both moderator and coolant

Explanation:

- ✓ C is correct: PHWRs use **natural uranium** and **heavy water (D₂O)** as both coolant and moderator. They allow **online refuelling**, reducing downtime.

- ✗ A is incorrect: PHWRs **do not use enriched uranium**.
 - ✗ B is incorrect: No frequent shutdown is needed due to online refuelling.
 - ✗ D is incorrect: Thorium-molten salt reactors are part of **Gen-IV concepts**, not PHWRs.
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Q3. Nipah virus can be transmitted through which of the following routes?

1. Eating fruits contaminated by bat saliva
2. Consuming pasteurised cow's milk
3. Direct exposure to body fluids of infected persons
4. Airborne aerosol transmission over long distances

Select the correct answer using the code below:

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

Answer: B – 1 and 3 only

Explanation:

- ☒ 1 & 3 are correct: Virus spreads through **bat-contaminated fruits** and **human fluids**.
 - ✗ 2 is incorrect: No evidence suggests pasteurised milk transmits the virus.
 - ✗ 4 is incorrect: No airborne long-distance transmission (unlike influenza).
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Q4. Regarding the *International Treaty on Plant Genetic Resources for Food and Agriculture*, consider the following:

1. It legally binds signatory countries to share all plant germplasm through bilateral agreements.
2. It recognizes and protects Farmers' Rights including seed saving and exchange.
3. It is associated with the Food and Agriculture Organization (FAO) and Convention on Biological Diversity (CBD).

Which of the statements is/are correct?

- A. 2 and 3 only

B. 1 and 2 only

C. 1 and 3 only

D. 1, 2 and 3

Answer: A – 2 and 3 only

Explanation:

- ✗ *Statement 1* is incorrect: The treaty uses a **Multilateral System (MLS)**, not bilateral sharing.
 - ✓ *Statement 2* is correct: Farmers' rights (Art. 9) are protected—seed saving, exchange, and recognition of traditional knowledge.
 - ✓ *Statement 3* is correct: Linked to **FAO and CBD**.
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Q5. Consider the following pairs regarding the ancient city Penico:

Feature Description

1. Located in coastal Colombia
2. Known for ceremonial architecture and trade hub role
3. Contemporary to Egypt and Sumerian Bronze Age

Which of the pairs are correctly matched?

A. 1 and 3 only

B. 2 and 3 only

C. 1 and 2 only

D. 1, 2 and 3

Answer: B – 2 and 3 only

Explanation:

- ✗ *1* is incorrect: Penico is in **Peru**, not Colombia.
 - ✓ *2* is correct: Excavations revealed ceremonial temples and central trade activity.
 - ✓ *3* is correct: It dates to ~1800–1500 BCE—parallel to early Bronze Age.
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Q6. In the context of the 17th BRICS Summit, which of the following statements is/are correct?

1. Indonesia became the first Southeast Asian country to join BRICS.

2. The summit was held in Rio de Janeiro and adopted a declaration promoting reforms in WTO and IMF.
3. BRICS originally started as a formal international treaty signed in 2001 by five countries.

Select the correct answer using the code below:

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

Answer: A – 1 and 2 only

Explanation:

- ☒ 1 is correct: Indonesia joined BRICS in 2025.
- ☒ 2 is correct: Rio Declaration called for reforms in **WTO, IMF, and UNSC**.
- ☐ 3 is incorrect: BRICS began as **informal dialogue in 2009**, not as a formal treaty.

Q7. The Seine River, recently reopened for swimming, flows through which of the following regions in France?

1. Burgundy
2. Île-de-France
3. Normandy

Select the correct answer using the code below:

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

Answer: D – 1, 2 and 3

Explanation:

- ☒ 1: River originates in **Burgundy (Côte d'Or)**.
 - ☒ 2: Flows through **Île-de-France**, including **Paris**.
 - ☒ 3: Empties into **English Channel** at **Normandy**.
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Q8. Which of the following objectives are associated with India's National Biobank initiative?

1. Support personalised medicine based on genome profiling
2. Develop treatments for rare genetic diseases and lifestyle disorders
3. Share India's genomic data with multilateral treaty bodies under WHO

Select the correct answer using the code below:

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

Answer: A – 1 and 2 only

Explanation:

- ☒ 1 & 2 are correct: Biobank enables **precision medicine** and **research on rare/lifestyle diseases**.
 - ☐ 3 is incorrect: **No mandatory WHO data sharing**; India maintains data sovereignty.
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Q9. Which of the following are unique features of India's 700 MWe indigenous PHWRs?

1. Use of light water as coolant and heavy water as moderator
2. Online refuelling without shutting down the reactor
3. Twin fast shutdown systems and passive heat removal
4. Entirely based on imported reactor design and fuel supply

Select the correct answer using the code below:

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

Answer: B – 2 and 3 only

Explanation:

- ☐ 1: PHWRs use **heavy water** as both **coolant and moderator**.
- ☒ 2: They allow **online refuelling**, enhancing efficiency.

- ☒ 3: Feature **dual shutdown systems and passive safety**.
 - ☐ 4: They are **fully indigenised**, developed by **BARC and NPCIL**.
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Q10. Consider the following provisions under the Plant Treaty:

1. Multilateral system of access to 64 food crops
2. Global Information System to share genetic data
3. Legally mandated sharing of all native seeds with FAO, overriding domestic laws

Which of the above is/are correct?

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

Answer: A – 1 and 2 only

Explanation:

- ☒ 1: MLS covers **64 key food and forage crops**.
- ☒ 2: Article 17 establishes a **Global Info System**.
- ☐ 3: India opposes any provision that **overrides national sovereignty**; no such clause is enforced.