

1. Consider the following statements regarding the functions of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA):

1. It functions as an open-ended, multidisciplinary intergovernmental scientific advisory body under the Convention on Biological Diversity (CBD).
2. It was established under Article 25 of the Convention on Biological Diversity.
3. It has the authority to impose criminal penalties on countries that fail to achieve biodiversity targets.

Which of the statements given above is/are correct?

- 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**Statement 1 is correct:**

The **Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA)** is an open-ended, multidisciplinary, intergovernmental scientific advisory body established under the CBD. It provides scientific and technical advice to the Conference of the Parties (COP) on issues related to the implementation of the Convention.

Statement 2 is correct:

SBSTTA was constituted under **Article 25 of the Convention on Biological Diversity**. It undertakes scientific assessments, identifies emerging biodiversity issues, and recommends measures for effective implementation of the Convention.

Statement 3 is incorrect:

SBSTTA is only an advisory body. It has **no judicial or enforcement powers** and cannot impose criminal penalties or sanctions on countries. Implementation of biodiversity commitments remains the responsibility of individual Parties under the CBD framework.

2. Consider the following statements about Project SARATHI:

1. It is integrated with the MY Bharat digital portal for volunteer registration and management.
2. Student volunteers under the project are permitted to independently perform clinical and medical duties in hospitals.

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

Answer: A. 1 only

Explanation

Statement 1 is correct:

Project SARATHI (Students' Alliance for Responsible Action to Transform Healthcare Institutes) is integrated with the **MY Bharat (Mera Yuva Bharat)** digital platform. The portal enables volunteer registration, deployment, monitoring, and certification under various youth engagement initiatives.

Statement 2 is incorrect:

Student volunteers are assigned **only non-clinical responsibilities**, such as guiding patients, assisting with registrations, helping elderly and differently-abled patients, facilitating hospital navigation, and supporting queue management. They are **not authorised to perform clinical or medical duties**.

3. Consider the following statements regarding the Geological Survey of India (GSI):

1. It functions as an attached office under the Ministry of Mines.
2. It is responsible for generating, maintaining, and updating India's national geoscientific database.
3. It was established in 1851 primarily to identify coal deposits required for the expansion of the Indian railway network.

Select the correct answer using the code given below.

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

Answer: D. 1, 2 and 3

Explanation

Statement 1 is correct:

The **Geological Survey of India (GSI)** is an attached office under the **Ministry of Mines**, Government of India. Its headquarters are located in Kolkata.

Statement 2 is correct:

GSI is India's premier geoscientific organisation responsible for geological mapping, mineral exploration, geophysical and marine surveys, glaciological studies, and the creation and maintenance of the country's geoscientific database.

Statement 3 is correct:

The organisation was established on **4 March 1851** during British rule with the primary objective of locating **coal deposits** to meet the fuel requirements of the expanding railway network.

4. Consider the following statements regarding the implementation and monitoring framework under the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013:

1. The Act provides for Vigilance Committees at the district and sub-divisional levels, along with Monitoring Committees at the State and Central levels.

2. The National Commission for Safai Karamcharis (NCSK) is empowered to monitor the implementation of the Act, examine complaints regarding non-compliance, and advise both the Central and State Governments.
3. The Act repealed the Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993, while expanding the legal framework from prohibition alone to comprehensive rehabilitation and protection of dignity.

How many of the statements given above are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

Answer: C. All three

Explanation

Statement 1 is correct:

The **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 (PEMSR Act)** provides for the establishment of **Vigilance Committees** at the district and sub-divisional levels and **Monitoring Committees** at the State and Central levels to oversee implementation and rehabilitation efforts.

Statement 2 is correct:

The Act authorises the **National Commission for Safai Karamcharis (NCSK)** to monitor implementation, investigate complaints relating to violations or non-implementation, advise governments, and take suo motu cognisance of relevant issues.

Statement 3 is correct:

The 2013 Act repealed the **Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993**. It broadened the legal framework by prohibiting hazardous manual scavenging while introducing comprehensive rehabilitation measures, including financial assistance, skill development, housing support, and livelihood opportunities, thereby adopting a dignity-based approach.

5. The Pamba River is most appropriately associated with which one of the following?

- A. A west-flowing river in Kerala, associated with the Sabarimala pilgrimage and draining into Vembanad Lake
- B. A Himalayan river flowing along the India–Nepal border before joining the Ganga river system
- C. An east-flowing peninsular river entering the Bay of Bengal after crossing the Eastern Ghats
- D. A seasonal river of Rajasthan that disappears into inland saline depressions before reaching the sea

Answer: A

Explanation

The **Pamba River**, also known as the **Dakshina Bhagirathi**, is the **third longest river in Kerala**. It originates from the **Peerumedu Plateau** in the Western Ghats (Idukki district) and flows westward through **Pathanamthitta** and **Alappuzha** districts before draining into **Vembanad Lake**, one of India's largest Ramsar wetlands.

The river is regarded as sacred in Hinduism because it is closely associated with the **Sabarimala Temple**, dedicated to Lord Ayyappa. Pilgrims traditionally take a holy dip in the Pamba River before beginning the trek to the shrine.

- **Option A** is correct.
- **Option B** describes Himalayan rivers such as the Sharda (Mahakali).
- **Option C** refers to east-flowing peninsular rivers like the Godavari or Krishna.
- **Option D** describes inland drainage rivers of Rajasthan, such as the Luni.

6. Consider the following statements regarding the habitat and behaviour of the pygmy hog:

1. The pygmy hog constructs dome-shaped nests from dry grass and other vegetation for resting and shelter.
2. Its natural habitat consists primarily of dense tropical rainforests in the Nilgiri Biosphere Reserve.

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

Answer: A

Explanation

The **pygmy hog (*Porcula salvania*)** is the world's smallest and one of the rarest wild pig species. It is endemic to the **tall wet alluvial grasslands of the Himalayan foothills (Terai region)** and is currently found mainly in **Assam**, particularly in **Manas National Park**, **Orang National Park**, and **Sonai Rupai Wildlife Sanctuary**.

- **Statement 1 is correct.** The pygmy hog is unique among wild pigs because it constructs **dome-shaped nests** using dry grasses and other vegetation. These nests provide protection from predators and harsh weather conditions.
- **Statement 2 is incorrect.** The species does **not** inhabit tropical rainforests or the **Nilgiri Biosphere Reserve**. Instead, it depends on **tall floodplain grasslands** in the foothills of the Himalayas.

7. Consider the following assertion:

Synthetic biology offers significant opportunities but also raises governance, ecological and equity-related concerns.

Which of the following statements support the above assertion?

1. It may help in ecosystem restoration and control of invasive species.
2. Accidental release of engineered organisms may create ecological risks.
3. Patents concentrated in developed countries may create unequal access and benefit-sharing concerns.

Select the correct answer using the code given below.

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

Answer: D

Explanation

Synthetic biology combines biology with engineering to design or modify organisms for specific purposes. While it offers transformative applications, it also raises important ethical, ecological, and governance challenges.

- **Statement 1 is correct.** Synthetic biology can assist in **ecosystem restoration**, conservation of endangered species, and **control of invasive species** through advanced genetic interventions.
- **Statement 2 is correct.** The accidental release of genetically engineered organisms into natural ecosystems could disrupt biodiversity, alter food chains, and lead to unintended ecological consequences.
- **Statement 3 is correct.** The concentration of patents and intellectual property in developed countries may create inequitable access to technologies and complicate **Access and Benefit Sharing (ABS)** under frameworks such as the **Nagoya Protocol**.

Hence, all three statements support the assertion.

8. Which of the following statements regarding OPEC is/are correct?

1. It is a permanent intergovernmental organization of oil-exporting developing nations.
2. OPEC was initially headquartered in Geneva, Switzerland, before shifting its permanent headquarters to Vienna, Austria, in 1965.
3. Russia is a member of OPEC.

Select the correct answer using the code given below.

- A. 1 only

B. 1 and 2 only

C. 2 and 3 only

D. 1, 2 and 3

Answer: B

Explanation

The **Organization of the Petroleum Exporting Countries (OPEC)** was established in **1960** during the Baghdad Conference by **Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela**. Its objective is to coordinate petroleum policies among member countries and stabilize global oil markets.

- **Statement 1 is correct.** OPEC is a **permanent intergovernmental organization** of major oil-exporting countries.
- **Statement 2 is correct.** The organization was initially headquartered in **Geneva, Switzerland (1960–1965)** before relocating permanently to **Vienna, Austria**, in 1965.
- **Statement 3 is incorrect. Russia is not an OPEC member.** It participates in the broader **OPEC+** grouping, which includes non-OPEC oil-producing countries cooperating with OPEC on production policies.

9. Which of the following non-transportation applications utilize electromagnetic technologies or principles derived from Maglev development?

1. Active magnetic bearings in industrial turbines to eliminate oil lubricants.
2. Electromagnetic Aircraft Launch Systems (EMALS) on naval aircraft carriers.
3. Contactless component handling in semiconductor cleanroom manufacturing.
4. Diamagnetic levitation systems for microgravity biological research.

Select the correct answer using the code given below.

A. 1 and 2 only

B. 3 and 4 only

C. 1, 2 and 3 only

D. 1, 2, 3 and 4

Answer: D

Explanation

The technologies developed for **Maglev (Magnetic Levitation)** systems have found applications far beyond high-speed transportation.

- **Statement 1 is correct. Active Magnetic Bearings (AMBs)** use electromagnetic levitation to support rotating shafts without physical contact, reducing friction and eliminating the need for lubricants.

- **Statement 2 is correct.** Electromagnetic Aircraft Launch Systems (EMALS) employ linear induction motor technology, similar to that used in Maglev trains, to launch aircraft from naval carriers.
- **Statement 3 is correct.** Semiconductor manufacturing uses **contactless magnetic transport systems** to move delicate components while maintaining ultra-clean conditions.
- **Statement 4 is correct.** High-strength magnetic fields enable **diamagnetic levitation**, allowing biological samples and small objects to be suspended for microgravity research on Earth.

Thus, all four statements are correct.

10. With reference to Norway, consider the following seas:

1. North Sea
2. Norwegian Sea
3. Barents Sea
4. Black Sea

How many of the above border Norway?

- A. Only one
- B. Only two
- C. Only three
- D. All four

Answer: C

Explanation

Norway occupies the western part of the Scandinavian Peninsula and possesses one of the world's longest coastlines. It is bordered by three major seas.

- **North Sea** – Borders Norway to the southwest and contains significant offshore oil and gas reserves.
- **Norwegian Sea** – Lies to the west of Norway and forms part of the Arctic Ocean.
- **Barents Sea** – Located to the north and northeast of Norway, shared with Russia.
- **Black Sea** – Does **not** border Norway; it lies much farther southeast and is bordered by countries such as Türkiye, Bulgaria, Romania, Ukraine, Russia, and Georgia.

Therefore, **three** of the listed seas border Norway, making **Option C** the correct answer.