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Daily MCQs: 12-12-2024

1. The 'G33 grouping', sometimes seen in the news, is related to

- A. Protecting the interest of the developing countries in agricultural trade negotiations in WTO
- B. Reform the UN Security Council through an expansion in permanent and non-permanent seats
- C. Group of Small Island Developing States which share similar climate change vulnerabilities
- D. Group of former Soviet Union countries to act as a bulwark against expansion of NATO

2. With reference to Black Carbon, consider the following statements.

- 1. Black carbon is formed by the incomplete combustion of fossil fuels, wood and other fuels.
- 2. Black carbon is a short-lived climate pollutant.
- 3. Black carbon is an important contributor to global warming.

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

3. With reference to The National Commission for Safai Karamcharis (NCSK), consider the following statements:

- 1. It functions as a statutory body under the Ministry of Social Justice and Empowerment.
- 2. The NCSK monitors the implementation of the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013.

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

4. Consider the following countries.

- 1. Egypt
- 2. Sudan
- 3. Oman
- 4. Jordan
- 5. Eritrea

Which of the countries mentioned above share their border with the Red sea?

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- A. 1, 2 and 5 only
- B. 2, 3 and 5 only
- C. 1, 4 and 5 only
- D. 1, 2, 3, 5 only

5. Consider the following statements about neutrinos.

1. They lack electrical charge and hardly interact with other forms of matter.
2. They cannot be produced through artificial processes.
3. Studying neutrinos can help us understand the interior of the sun.

Which of the statements given above is/are correct?

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

Solutions:

1. Answer: A

Explanation:

G33 countries

- The G33 is a **forum of developing countries** including India, Brazil, South Africa etc. formed during the **Cancun Ministerial Conference (2003)** of the World Trade Organization (WTO), to **protect the interest of the developing countries in agricultural trade negotiations**.
- It was created in order to help group countries which were all facing similar problems. The G33 has proposed special rules for developing countries at WTO negotiations, like allowing them to continue to restrict access to their agricultural markets.
- The group, despite its name, has **47 members currently**.



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2. Answer: D

Explanation:

- Black carbon, or soot, is part of fine particulate air pollution (PM2.5) and contributes to climate change.
- **Statement 1 is correct:** Black carbon (BC) is **formed by the incomplete combustion** of fossil fuels, wood and other fuels. Complete combustion would turn all carbon in the fuel into carbon dioxide (CO₂), but combustion is never complete and CO₂, carbon monoxide, volatile organic compounds, and organic carbon and black carbon particles are all formed in the process.
- **Statement 2 is correct:** Black carbon is a **short-lived climate pollutant** with a lifetime of only days to weeks after release in the atmosphere. During this short period of time, black carbon can have **significant direct and indirect impacts on the climate, the cryosphere (snow and ice), agriculture and human health.**
- **Statement 3 is correct:** Black carbon is the **second-largest contributor to warming the planet behind carbon dioxide (CO₂).**
- India is the **second largest emitter of black carbon** in the world, with emissions expected to increase dramatically in the coming decades.

3. Answer: B

Explanation:

- The National Commission for Safai Karamcharis (NCSK) was established in **1993** as a statutory body under the provisions of the **National Commission for Safai Karamcharis Act, 1993**, initially for the period upto March 31,1997. Later the validity of the Act was extended for five years and then again for two years i.e up to February 29, 2004.
- **Statement 1 is incorrect:** After that it was lapsed and the tenure of the commission was extended as a **non-statutory body** under the **Ministry of Social Justice and Empowerment.** The tenure of the Commission was being extended from time to time through government resolutions.
- The major beneficiaries under the commission are the **Safai Karamcharis and identified manual scavengers** in the country. According to the government data, there were 58,098 manual scavengers identified in the country as on December 31, 2021.
 - *Safai Karamchhari means a person engaged in, or employed for any sanitation work and includes his/her dependents.*

Functions

- The NCSK has been giving its recommendations to the Government regarding specific programmes for welfare of Safai Karamcharis, study and evaluate the existing welfare programmes for Safai Karamcharis, investigate cases of specific grievances etc.

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- **Statement 2 is correct:** Also as per the provisions of the **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013**, the NCSK has been assigned the work to monitor the implementation of the Act, tender advice for its effective implementation to the Centre and State Governments and enquire into complaints regarding contravention/non-implementation of the provisions of the Act.

4. Answer: A

Explanation:



- The Red Sea is a semi-enclosed, inlet (or extension) of the Indian Ocean between the continents of Africa from Asia. It is connected to the Arabian Sea and the Indian Ocean to the

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south through the Gulf of Aden and the narrow strait of Bab el Mandeb. The northern portion of the Red Sea is bifurcated by the Sinai Peninsula into the Gulf of Aqaba and the Gulf of Suez, where it is connected to the Mediterranean Sea via the famous Suez Canal.

- A total of **6 countries** of Asia and Africa, border the Red Sea. The countries of **Yemen and Saudi Arabia** border the Red Sea to the east. The Red Sea is bordered by **Egypt** to the north and west, and by **Sudan, Eritrea, and Djibouti** to the west.

5. Answer: D

Explanation:

- A neutrino is a **fundamental elementary particle**, and atmospheric neutrinos can be **studied when solar radiation hits the earth's atmosphere**.
- **Statement 1 is correct:** They are very **hard to detect as they hardly interact with other forms of matter due to their lack of electrical charge**.
- **Statement 2 is incorrect:** They are **produced in high-energy processes such as within stars and in supernovae**. On earth, they are produced by **particle accelerators and nuclear power plants**.
- Neutrino detectors are often built underground to isolate them from cosmic rays from space and any other sources of background radiation. Because neutrinos are so small, they barely interact with matter, passing through most atoms, and thus most matter, without interaction.
- So far, neutrino physics has been mostly limited to outer space sources, observing neutrinos from farther-away stars and galaxies. There are about 20 or so neutrino detectors, telescopes, and experiments around the world.

Significance

Properties of the sun

- **Statement 3 is correct:** The visible light that reaches us from the sun is emitted from the surface of the sun. The neutrinos which also take close to this time to reach us from the sun, known as **solar neutrinos**, were produced in the core of the sun. Therefore they give us information about the interior of the sun. Studying these neutrinos can help us **understand what goes on in the interior of the sun**.

Probing Early Universe

- Neutrinos interact very little with the matter around them, so they **travel long distances uninterrupted**. Since they take time to cross these distances, they are in effect uninterrupted for very long times. The extragalactic neutrinos we observe may be coming from the distant past. These inviolate messengers can give us a **clue about the origin of the universe and the early stages of the infant universe, soon after the Big Bang**.

Medical Imaging

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- Apart from direct future uses of neutrinos, there are **technological applications** of the detectors that will be used to study them. For instance, X-ray machines, PET scans, MRI scans, etc., all came out of research into particle detectors. Hence the INO detectors may have applications in **medical imaging**.

