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Daily MCQs: 04-06-2024

1. Consider the following statements about Postal Ballots

- 1) It is a method of voting in which electors cast their ballots by mail rather than in person at a polling station.
- 2) Postal ballots can be used by members of the armed forces only.

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

2. Consider the following statements

- 1) According to the constitution, the power to bifurcate a state lies in the exclusive domain of the Parliament.
- 2) It is not mandatory for the Parliament to seek the views of the legislature before bifurcating a state.

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

3. Which type of coal is known for having the highest carbon content?

- A) Bituminous
- B) Lignite
- C) Anthracite
- D) Peat

4. With reference to Critical Minerals, consider the following statements

- 1) They are mineral deposits with high economic vulnerability and high global supply chain risk.
- 2) Till now, India imported critical minerals to meet the shortages of domestic supply, but now India is self-sufficient in coal production.

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

5. Which of the following statements is/are correct about Agnibaan SOrTeD?

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- A) It is India's first private launch vehicle to be launched from a private launchpad.
- B) It uses a completely 3D-printed, single-piece, semi-cryogenic engine.
- C) It can carry payloads of up to 500 kg to a Low Earth Orbit (LEO).
- D) Both (a) and (b)

Solutions:

1. Answer: A

Explanation

- **Statement 1 is correct:** Postal voting, also known as **absentee voting**, is a method of voting in which **electors cast their ballots by mail** rather than in person at a polling station.
- This method is particularly useful for individuals who are **unable to vote in person** due to various reasons, such as being away from their home constituency, having a disability, or being engaged in essential services on election day.

Who is eligible for postal ballots?

- The eligibility criteria for postal ballots **vary depending on the specific election and jurisdiction**. However, some **common categories** of eligible voters include:
 - **Service voters:** Members of the armed forces, paramilitary forces, and other government employees deployed on election duty far from their home constituencies.
 - **Absentee voters:** Individuals who are unable to vote in person due to reasons such as being away from their home constituency for work, illness, or disability.
 - **Electors on election duty:** Government officials and polling staff who are assigned duties at polling stations other than their own.
 - **Electors under preventive detention:** Individuals who are detained under preventive custody orders during the election period.
 - **Hence statement 2 is incorrect.**

Applying for Postal Ballot

- To apply for a postal ballot, eligible voters must submit an application to the **Returning Officer (RO)** of their respective constituency.
- The application form typically requires personal details, voter identification information, and the reason for seeking a postal ballot.
- The RO verifies the eligibility of the applicant and issues the postal ballot if the criteria are met.

Counting of Postal Ballot

- Postal ballots are **counted separately** from votes cast at polling stations.
- The RO and election officials scrutinise the postal ballots to ensure their validity and integrity. Valid postal ballots are then added to the respective candidate's vote count.

2. Answer: A

Explanation

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- **Statement 1 is correct: Article 3 of the Constitution** clearly keeps the **power to bifurcate a state** in the **exclusive domain of Parliament**.
- Article 3 makes three things clear:
 - (1) A state is bifurcated by an **Act of Parliament and Parliament only**.
 - (2) Before enactment by Parliament, the **President has to refer** the draft bill to the legislature.
 - (3) The legislature has to **express** its views.
- **Statement 2 is incorrect: Seeking the views of the legislature** to be affected is **mandatory** for Parliament before bifurcating a state.
- But the views of the legislature are **not binding on Parliament**. Parliament can make a law bifurcating a state in whatever manner it deems fit, independent of whatever may be the views expressed by the legislature concerned.

3. Answer: C

Explanation

Coal

- **Coal** is a **readily combustible, black or brownish-black sedimentary rock**, predominantly made of **carbon**.
- Coal is classified as a **nonrenewable energy source** because it takes millions of years to form.
- **Coal** is a **fossil fuel** and comprises a mixture of **carbon, ash, moisture** and other impurities.
- Coal is primarily used for **Power generation** in Thermal Power Plants, in **steel production**. It also finds application in **alumina refineries, paper manufacturing, and chemical and pharmaceutical industries**.

Grade of coal

- The **Gross Calorific Value (GCV)**, or the amount of heat or energy that can be generated from burning the coal, determines the **grade of coal**.
- The higher the **available carbon** in a unit of coal, the greater is its **quality** or **'grade.'**
- As per the **Coal Ministry**, there are **17 grades of coal**.

Types of coal found in India

- **Anthracite**: It is the **highest grade of coal** containing a **high percentage of fixed carbon**. It is hard, brittle, black and lustrous. It is found in smaller quantities in regions of **Jammu and Kashmir**. Hence **option C is correct**.
- **Bituminous**: It is a **medium grade of coal** having **high heating capacity**. It is the most commonly used type of coal for electricity generation in India. Most bituminous coal is found in **Jharkhand, Odisha, West Bengal, Chhattisgarh, and Madhya Pradesh**.
- **Subbituminous**: It is black in color, dull (not shiny) and has a **higher heating value** than lignite.
- **Lignite**: It is the **lowest grade coal** with the least carbon content. It is found in the regions of **Rajasthan, Tamil Nadu, and Jammu & Kashmir**.

Characteristics of Indian Coal

- **Indian coal** has been evaluated as being **high in ash content** and **low in calorific value** compared to **imported coal**.

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- The **average GCV of domestic thermal coal** ranges from **3,500-4,000 kcal/kg** compared to **imported thermal coals** of **+6,000 kcal/kg of GCV**.
- The average **ash content of Indian coals** is **more than 40%** compared to **imported coal** which has less than **10% ash content**.
- High-ash coal when burnt results in the emissions of higher **particulate matter, nitrogen and sulfur dioxide**.

4. Answer: A

Explanation

What are Critical Minerals?

- **Statement 1 is correct:** There is **no global definition** of critical minerals, but essentially, they are **mineral deposits with high economic vulnerability and high global supply chain risk**.
- Globally, there is a gap between projected supply and projected demand for many critical minerals by the end of this decade, especially in **cobalt and lithium**.
- They are used for making **EV batteries** and are also critical for making **semiconductors and high-end electronics manufacturing**.
- These minerals are also used in **manufacturing fighter jets, drones, radio sets and other critical equipment, hence it is critical for aerospace, communications and defence industries**.

Who are the top producers of critical minerals?

- According to a report released by the **International Energy Agency**, the major producers of critical minerals globally are **Chile, Indonesia, Congo, China, Australia and South Africa**.
- **China** dominates in terms of processing.

Scenario in India

- **India heavily relies on imports for the majority of its critical minerals**, with a few exceptions like copper, gallium, graphite, cadmium, phosphorus, potash, and titanium. Hence **statement 2 is incorrect**.
- **India has only tapped into 10-20 percent of its actual capacity** in terms of critical mineral exploration.

5. Answer: D

Explanation

- Agnibaan is a **two-stage launch vehicle** designed to be **highly customisable** and capable of carrying a **300 kg payload to a 700 km orbit**. Hence **statement C is incorrect**.
- The Agnilet engine used in the Agnibaan is the world's first **semi-cryogenic rocket engine** that uses **sub-cooled liquid oxygen and Aviation Turbine Fuel (ATF)**.
- Agnibaan SOrTeD is **India's first launch from a private launchpad**, called 'Dhanush', established by Agnikul. Hence **statement A is correct**.

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- It is also **India's first semi-cryogenic engine-powered rocket launch** and the **world's first single piece 3D-printed engine designed and built indigenously**. Hence **statement B is correct**.
 - *Single piece using 3D printing means that the entire part was made as one continuous piece using a 3D printer, rather than being assembled from multiple parts.*
- As both statements A and B are correct, **Option D is the correct answer**.

