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Daily MCQs: 01-02-2025

1. Potomac river, recently seen in news, flows through which of the capital cities?

- A. Washington
- B. Tokyo
- C. Moscow
- D. Budapest

2. Consider the following statements about the microplastics

- 1) They are biodegradable in nature.
- 2) Microplastics can exhibit tendencies of biomagnification across food chains.
- 3) Primary Microplastics are particles that result from the breakdown of larger plastic items.

How many of the statements given above is/are correct?

- A) Only one
- B) Only two
- C) All the three
- D) None of the above

3. Consider the following statements about coal

- 1) India occupies the second position globally in terms of coal production.
- 2) Peat has a lower carbon content compared to Anthracite.
- 3) More than 90 per cent of India's total coal reserves are gondwana coal.

How many of the above statements are correct?

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

4. Consider the following statements about the Sangeet Natak Akademi

- 1) It is the apex body in the field of performing arts in India.
- 2) The President of India is the Chairman of the Akademi.
- 3) It is an autonomous body of the Ministry of Culture.

How many of the statements given above are correct?

- A) Only one

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- B) Only two
- C) All three
- D) None

5. Consider the following species

- 1) Frogs
- 2) Lichens
- 3) Gangetic dolphins

How many of the above are examples of indicator species?

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

Solutions:

1. Answer: A

Explanation:

- Recently, the U.S. ' deadliest air disaster in two decades happened in Washington's Potomac river. **Hence, option A is correct.**
- A civilian aircraft came into collision with a military helicopter leading to the death of many people.

2. Answer: A

Explanation:

- **Microplastics** are **plastics less than 5 mm in length** and occur in the environment as a consequence of **plastic pollution**.
- Microplastics consist of **carbon** and **hydrogen** atoms bound together in **polymer chains**.
- Other chemicals, such as **phthalates, polybrominated diphenyl ethers** and **tetrabromobisphenol A**, are present in microplastics.
- There are two categories of microplastics: **Primary** and **Secondary**.
 - **Primary microplastics** are tiny particles designed for commercial use, such as **cosmetics, microfibers** shed from clothing, **fishing nets**.

- **Secondary microplastics** are particles that result from the **breakdown** of larger plastic items, such as **water bottles**. This breakdown is caused by exposure to environmental factors, such as **erosion** action of **ocean waves**. **Hence, statement 3 is incorrect.**

Impacts of microplastics

- Microplastics are not **biodegradable** and once in the environment, they tend to **accumulate** and **persist** for a longer period of time. **Hence, statement 1 is incorrect.**
- Microplastics are a source of **air pollution**, occurring in **dust** and **airborne fibrous particles**.
- **Ingestion** of microplastics can cause aquatic species to consume **less food** thereby having **less energy** to carry out **life functions**, such as **feeding , breeding**, etc
- Microplastics can exhibit tendencies of **biomagnification** across **food chains**, **ie**, the concentration of **chemicals** can increase across **food chains**, **ie**, from zooplankton to small fish and large fish. **Hence, statement 2 is correct.**
 - **Biomagnification** refers to increase in the concentration of a toxicant at **successive trophic levels**.

3. Answer: C

Explanation

All the statements are correct.

- India occupies the **second** position globally in terms of **coal production** and possesses the **fourth-largest estimated coal reserves**.
- Given that **72% of the electricity in India is generated from coal**, it becomes a very strategic sector for the nation's development.
- This fossil fuel is found in a form of **sedimentary rocks** and is often known as '**Black Gold**'.
- It originated from **organic matter wood**. When large tracts of forests are buried under sediments, wood is burnt and decomposed due to heat from below and pressure from above. The phenomenon makes coal but **takes centuries to complete**.

Classification of Coal

Classification	Anthracite	Bituminous	Lignite	Peat

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Carbon content	Anthracite is the best quality of coal which carries 80 to 95 percent carbon content .	Bituminous carries 60 to 80 percent of carbon content and a low level of moisture content .	Lignite is often brown in color. It carries 40 to 55 percent carbon content .	Peat has less than 40 per cent carbon content .
Calorific Value	It ignites slowly with a blue flame. It has the highest calorific value .	It is widely used and has high calorific value .	It is an intermediate stage which happens during the alteration of woody matter into coal. It has high moisture content so it gives smoke when burnt.	It is in the first stage of transformation from wood to coal. It has low calorific value and burns like wood.
Distribution	It is found in small quantities in Jammu and Kashmir .	It is found in Jharkhand, West Bengal, Odisha, Chhattisgarh and Madhya Pradesh .	It is found in Rajasthan, Lakhimpur (Assam), and Tamil Nadu .	Peat deposits are found primarily along the western coast of India , particularly in the states of Kerala, Karnataka, and Goa .

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Types of coal on the basis of a time period

- **Gondwana coal:** Around **98 per cent of India's total coal reserves** are from Gondwana times. This coal was formed about **250 million years ago**.
- **Tertiary coal** is of **younger age**. It was formed from **15 to 60 million years ago**.

4. Answer: B

Explanation

- **Statements 1 and 3 are correct:** Sangeet Natak Akademi is the **apex body in the field of performing arts** in India. It is an **autonomous body of the Ministry of Culture**.
- The Akademi was set up in **1953** for the **preservation and promotion of the vast intangible heritage of India's diverse culture** expressed in forms of music, dance and drama.
- The management of the Akademi vests in its **General Council**.
- **Statement 2 is incorrect:** The **Chairman** of the Akademi is appointed by the **President of India** for a term of **five years**.
- Its headquarters is located in **New Delhi**.

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5. Answer: C

Explanation

All the three given species are examples of indicator species.

- **Indicator species** are defined as species which can provide **information on environmental changes**.
- They are also referred to as **sentinel species, indicator organisms, biological indicators, etc**
- The presence or absence of indicator species can be used to **determine the health of the ecosystem**.
- They are **sensitive to changes** and also known as and give **early warning signals** regarding the ecosystem.
- For instance: **Frogs and toads** are very sensitive to habitat and climate change. Their absence denotes that a habitat is undergoing change and is under threat.
- Other examples of indicator species: **lichens, butterflies, gangetic dolphin, tubifex worms**.