

Q: Researchers develop has developed a nanocomposite using lignin and nanoparticles of cadmium sulfide from agricultural waste. Consider the following statement:

1. They used green methods to synthesise extremely tiny particles of cadmium sulfide
2. Lignin is a complex, woody biopolymer.
3. Lignin is poor in carbon, polyphenols, and antioxidants

Choose the correct option from the codes given below:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) 1, 2 and 3

Ans: a

Explanation:

- The present study is an attempt to derive biodegradable nanomaterials for biomedical applications.
- They used green methods to synthesise extremely tiny particles of cadmium sulfide, an inorganic compound with lignin forming the matrix for the material.
- Lignin is a complex, woody biopolymer that gives mechanical support to plants and helps transport water and nutrients. Post-harvest, lignin is left over as stubble, either burnt or used as cattle feed.
- However, it is found that lignin is rich in carbon, polyphenols, and antioxidants, besides having antimicrobial properties.

Q: In a bid to meet India's commitment to exceed its Paris agreement climate targets, the Centre plans to table the Energy Conservation (Amendment) Bill 2022. Consider the key provision:

1. States can issue energy savings certificates to those industries, which consume less than their maximum allotted energy.
2. Centre can prohibit the manufacture, sale, purchase or import of any particular equipment unless it conforms to specified norms issued six months/ one year before.
3. Violation under this act shall attract a penalty of Rs ten lakh with an additional penalty of Rs. 10,000 for each day the offence continues.

Choose the correct option from the codes given below:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) 1, 2 and 3

Ans: b

Explanation:

- According to the Act, the Centre can issue energy savings certificates to those industries which consume less than their maximum allotted energy. However, this certificate can be sold to customers who consume higher than their maximum allowed energy threshold, providing for a framework for energy trading.
- The Act allows the Centre to prohibit the manufacture, sale, purchase or import of any particular equipment unless it conforms to specified norms issued six months/ one year before.
- In case of any violations under this Act, each offence shall attract a penalty of Rs ten lakh with an additional penalty of Rs. 10,000 for each day the offence continues.
- Consumers who utilize excess energy will be penalized according to their excess consumption. Any appeals against any such order passed by the Central or state government will be heard by the appellate tribunal already established under the Electricity Act, 2003.

Q: Consider the following:

1. Pala wetland: Mizoram
2. Karikili Bird Sanctuary: Telangana
3. Sakhya Sagar: Madhya Pradesh

The correct match of the recent recognised Ramsar site are

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) 1, 2 and 3

Ans: c

Explanation:

Karikili Bird Sanctuary:

- **Located in Kanchipuram district**, nearly 86 kilometers away from Chennai, this bird sanctuary is spread over a five-kilometer-wide belt and is home to cormorants, egrets, grey heron, open-billed stork, darter, spoonbill, white ibis, night herons, grebes, grey pelican among others.

Pala wetland:

- Palak Dil or Pala Tipo means swallowing lake in Mara language, and the wetland, located near Phura village in Saiha district of Mizoram, is home to a wide range of animals, birds, and reptiles.

Sakhya Sagar:

- Created from the Manier River in 1918, Sakhya Sagar is located near Madhav National Park in the Shivpuri district of Madhya Pradesh.

Q: Consider the following statement:

1. Five Indian sites have been recognised as Wetland under Ramsar Convention.
2. Total Ramsar sites in India reached 54.
3. Ramsar is city situated on Caspian Sea.

Choose the correct option from the codes given below:

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) 1, 2 and 3

Ans: d

Explanation:

- Recently, five more Indian sites have been recognised as wetlands of international importance under the Ramsar Convention.
- Three of these wetlands are in Tamil Nadu and one each in Mizoram and Madhya Pradesh, making a total of 54 Ramsar sites in the country.
- It is named after the Iranian city of Ramsar, on the Caspian Sea, where the treaty was signed on February 2, 1971.

Q: Which among the following country had decided to quit International Space Station (ISS) after 2024?

- a) Russia
- b) US
- c) Canada
- d) Japan

Ans: a

Explanation:

- Russia has decided to **quit the International Space Station (ISS) after 2024** and focus on creating its own orbital outpost.
- The development had been on the cards ever since Russia announced the invasion of Ukraine and Russian forces marched towards Kyiv nearly four months ago.