

Q: Recently concentration of uranium had been evident from groundwater in India. Consider the following statement:

1. Water sample with uranium concentration is analysed through Inductively Coupled Plasma Mass Spectrometry (ICP-MS) method.
2. In certain district of Bihar, high concentration of uranium had been evident from groundwater.
3. World Health Organisation have set drinking the water standards for uranium in drinking water as 40 g/L.

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 high concentration of uranium in groundwater in certain districts in Bihar has left the authorities worried and 100 water samples from ten districts have been sent to Central Ground Water Board (CGWB) center in Lucknow for scientific analysis.
- The water samples have been sent for isotopic uranium analysis through Inductively Coupled Plasma Mass Spectrometry (ICP-MS) method which measures isotopic ratios at a reasonably high accuracy.
- Districts from where the groundwater samples have been recently collected are Nalanda, Nawada, Katihar, Madhepura, Vaishali, Supaul, Aurangabad, Gaya, Saran and Jehanabad.
- The Bureau of Indian Standard has not mentioned any standard for uranium in drinking water, while the World Health Organisation have set drinking the water standards for uranium in drinking water as 30 g/L.

Q: Consider the following statement:

1. Currently Madhya Pradesh does not produce green energy.
2. Madhya Pradesh has set an ambitious target of generating 20,000 Megawatt (MW) of green power by 2030.
3. Madhya Pradesh is setting up of a solar plant in the Chambal region.

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:

- Madhya Pradesh has set an ambitious target of generating an additional 20,000 Megawatt (MW) of green power by 2030 through renewable energy sources, including setting up of a solar plant in the Chambal region once notorious for dacoits, and supplying it to other states.
- The state currently produces 5,500 MW of green energy through various renewable power sources and a major part of it is sourced through solar power.

Q: Consider the following statement regarding Indian Virtual Herbarium:

1. Scientists of the Botanical Survey of India (BSI) develop it
2. It is the biggest virtual database of flora in the country.

Choose the correct option from the codes given below:

- a) 1 Only
- b) 2 Only
- c) 1 and 2
- d) None of the above

Ans: c

Explanation:

- Developed by scientists of the Botanical Survey of India (BSI), Indian Virtual Herbarium was inaugurated on July 1 in Kolkata.
- With details of about one lakh plant specimens, Indian Virtual Herbarium, the biggest virtual database of flora in the country.
- Herbarium specimens are considered important tools for plant taxonomy, conservation, habitat loss and even climate change.

Q: Consider the following statement regarding Mineral Security Partnership (MSP):

1. India is a member of this alliance.
2. The goal of the alliance is to produce rare earth mineral, Titanium in abundance.

Choose the correct option from the codes given below:

- a) 1 Only
- b) 2 Only
- c) 1 and 2
- d) None of the above

Ans: d

Explanation:

- The United States recently announced the formation of a global alliance called the Mineral Security Partnership (MSP).
- Apart from the US, the other countries to have joined this partnership are: Australia, Canada, Finland, France, Germany, Japan, the Republic of Korea, Sweden, the UK, and the European Commission.
- The goal of the alliance is to ensure that critical minerals are produced, processed, and recycled in a manner that supports the ability of countries to realise the full economic development benefit of their geological endowments.
- The focus would be on the supply chains of minerals such as Cobalt, Nickel, Lithium and also the 17 “rare earth” minerals.

Q: Consider the following statement regarding “Critical Mineral”:

1. Rare earth (RE) comprises seventeen elements.
2. The major critical minerals are Graphite, Lithium and Cobalt.
3. India is one of the major producer of critical mineral.

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:

- There is no global definition of critical minerals, but essentially, they are mineral deposits with high economic vulnerability and high global supply chain risk.
- Rare earth (RE) comprises seventeen elements and are classified as light RE elements (LREE) and heavy RE elements (HREE).
- The major critical minerals are Graphite, Lithium and Cobalt.
- They are used for making EV batteries and are also critical for making semiconductors and high-end electronics manufacturing.
- The major producers of critical minerals globally are Chile, Indonesia, Congo, China, Australia and South Africa.