

GS Test 18 (8th May 2022) (SOLUTION)

28. Correct Answer D

Explanation :

- Heavy Metals are defined as heavy metals either due to their high atomic weight or because of their high density. Nowadays, the word 'heavy metal' has been used to describe metallic chemical elements and metalloids which are toxic to the environment and humans. Some metalloids and also lighter metals such as selenium, arsenic and aluminium are toxic. They have been termed heavy metals while some heavy metals are typically not toxic such as the element gold. Heavy metals normally occur in nature and are essential to life but can become toxic through accumulation in organisms. Arsenic, cadmium, chromium, copper, nickel, lead and mercury are the most common heavy metals which can pollute the environment. Mercury, lead and cadmium are of greatest concern because of their ability to travel long distances in the atmosphere.
- Sources of heavy metals include mining, industrial production (foundries, smelters, oil refineries, petrochemical plants, pesticide production, chemical industry), untreated sewage sludge and diffuse sources such as metal piping, traffic and combustion by-products from coal-burning power stations.
- Heavy metals can enter our bodies in different ways. We might consume them in the food we eat or absorb them through our skin. Heavy metal poisoning occurs with heavy or frequent exposure, usually over a long period of time. Occasional exposure won't lead to heavy metal poisoning. So, statement 1 is correct.
- When the heavy metals are swallowed or inhaled into our bodies, they bioaccumulate in our system. Thus they are classified as dangerous. This bioaccumulation causes biological and physiological complications. Some heavy metals are necessary for life and are called essential elements which are required for a variety of biochemical and physiological functions. However, they can be toxic when present in large amounts. So, statement 2 is correct.
- Plants can be used to clean up heavy-metal contaminated soil by a process called phytoextraction. Some plant species can take up heavy metals and concentrate them in their tissue. The plants can be harvested and the contaminated plant material disposed of safely. Another way plants are used to treat heavy metal contamination is called rhizofiltration. In this method, heavy metals are removed directly from water by plant roots. The plants are grown directly in water or in water-rich materials such as sand, using aquatic species or hydroponic methods. So, statement 3 is correct.

Therefore, option (d) is the correct answer.

Relevance: Many of the beaches in India are now facing the threat of different types of environmental pollution, of which, heavy metal pollution from both natural and anthropogenic sources is emerging as one of the potential threats.

29. Correct Answer B

Explanation :

- National Afforestation and Eco-Development Board (NAEB) was set up in August 1992 for promoting afforestation, tree planting, ecological restoration and eco-development activities in the country, with special attention to the degraded forest areas, lands adjoining the Forest Areas, National Parks, Sanctuaries, other Protected Areas and as well as the Ecologically Fragile Areas like the Western Himalayas, Aravallis, Western Ghats, etc. So, statement 1 is correct.
- The NAEB is headed by the Minister of Environment, Forest and Climate Change as its Chairman, and Secretaries to the Government of India in the Departments of Rural Development, Agriculture Research and Education, Expenditure, Science & Technology, Agriculture and Cooperation, Animal Husbandry & Dairying, Water Resources, and Wasteland Development, representatives of ten State Governments, Member of Parliament (Lok Sabha and Rajya Sabha), and representatives of voluntary agencies, and tribals, etc. as other members. So, statement 2 is correct.
- National Afforestation Programme Scheme (NAP) is the flagship scheme of NAEB, in so much as it provide support, both in physical and capacity building terms, to the Forest Development Agencies (FDAs) which in turn are the main organ to implement Joint Forest Management. The FDA has been conceived as a federation of Joint Forest Management Committees (JFMCs) at the Forest Division level to undertake holistic development in the forestry sector with people's participation. This is a paradigm shift from the earlier afforestation programmes wherein funds were routed through the State Governments. This decentralized twotier institutional structure (FDA and JFMC) allows greater participation of the community, both in planning and implementation, to improve forests and livelihood of the people living in and around forest areas. The village is reckoned as a unit of planning and implementation and all activities under the programme conceptualized at the village level. The two-tier approach, apart from building capacities at the grassroots level significantly empowers the local people to participate in the decision making process. Under Entry Point Activities, community assets are created with a 'care and share' concept. So, statement 3 is correct.

Therefore, option (d) is the correct answer.

Relevance: Minister of State for Environment recently said in the Rajya Sabha that National Afforestation and Eco-development Board (NAEB) is implementing National Afforestation Programme (NAP) for ecological restoration of degraded forests and adjoining areas through people's participation. An amount of Rs 203.95 crore has been released to the states to treat area of 37,110 hectares during last three years and current year under NAP.