

CBSE Test Paper 03
Ch-16 Environmental Issues

1. Assertion: Deforestation causes loss of biodiversity.
Reason: Loss of biodiversity occurs due to habitat loss of organisms.
 - a. Both assertion and reason are incorrect.
 - b. Both assertion and reason are correct.
 - c. Reason do not explain the assertion correctly.
 - d. Assertion is correct but reason is incorrect.
2. Various methods applied for removing particulate pollutants from air employs:
 - a. Bioreactors and electrostatic precipitators
 - b. activated charcoal and calcium hydroxide
 - c. CNG and HFC
 - d. methanogens and bioreactors
3. Biodegradable is
 - a. Dacron
 - b. Polyethylene
 - c. Fiberglass
 - d. Crude oil
4. Cadmium :
 - i. Is a cumulative poison.
 - ii. resembles Zn chemically and may replace it in enzymes destroying their catalytic activity.
 - iii. replaces bone calcium.
 - a. only ii & iii are correct.
 - b. only i & ii are correct.
 - c. all are correct.
 - d. only (ii) is correct.
5. Ozone layer in upper atmosphere is being destroyed by
 - a. Chlorofluorocarbon
 - b. Photochemical oxidants
 - c. Smog
 - d. SO_2

-
6. Which type of UV radiation can be lethal to organisms
 7. DDT content in the water of lake that supplies drinking water to the nearby villages is found to be 0.003 ppm. The kingfishers of that area are reported to have 2 ppm of DDT. Why has the concentration increased in these birds. What harm will this cause to the bird population? Name the phenomenon.
 8. It has been recorded that the temperature of the earth's atmosphere has increased by 0.6°C. (a) What has caused this increase? (b) Explain its consequence.
 9. Expand BOD and COD.
 10. How does a scrubber function?
 11. What is integrated organic farming?
 12. Sanjeev lives in a remote village where electricity has not reached every home. He discovered that people keep their kerosene oil lamp lit in their rooms while sleeping. Next day he called a meeting of all the residents and explained the ill effects of the smoke. They met the village head and requested for electrification of their village at the earliest.
 - i. What values did Sanjeev show here?
 - ii. What could be the ill effect of the oil lamp?



13.
 - i. A decade back, the enormous vehicular traffic in Delhi had made Delhi rank 4th among polluted cities of the world. Two measures taken by the Delhi Govt. brought marked improvement in air quality by 2005. What were these two measures and how did they reduce air pollution?
 - ii. What is the norm set by Euro II for petrol and diesel vehicles?
14. What initiatives were taken for reducing vehicular air pollution in Delhi? Has air quality improved in Delhi?
15. Create an aquatic food chain in a water body into which effluents flow from a pesticide factory. Diagrammatically represent biomagnifications in this food chain. Explain why a decline in the predator bird population is expected, when it feeds on the tertiary consumers of this food chain.

CBSE Test Paper 03
Ch-16 Environmental Issues

Answer

1. b. Both assertion and reason are correct, **Explanation:** A number of microorganisms and other organism live in forest and get their food and shelter.
Deforestation causes loss of biodiversity. Loss of biodiversity occurs due to habitat loss of organisms.
2. b. activated charcoal and calcium hydroxide, **Explanation:** For removing particulate pollutants from air various methods are applied such as use of activated charcoal and calcium hydroxide that absorbs the particulate matters form polluted air.
3. d. Crude oil, **Explanation:** All the substances that can be broken into simpler forms due to action of microbes are called biodegradable. Crude oil decomposed into petrol, kerosene, gasoline etc. It is an organic substance can be changed into simpler forms.
4. c. all are correct, **Explanation:** Cadmium shows a danger of cumulative effects in the environment due to its acute and chronic toxicity.
Chemically cadmium is very similar to zinc, and the two metals can replace each other in many geochemical and biochemical processes. Both metals are found in (+2) oxidation state in water. This means that cadmium can replace zinc in some enzymes of our body, thereby altering the stereo-structure of the enzyme and impairing its catalytic activity. The acute cadmium poisoning in humans expresses as high blood pressure, kidney damage, destruction of testicular tissue and red blood cells.
5. a. Chlorofluorocarbon, **Explanation:** Ozone layer in upper atmosphere is being destroyed by chlorofluorocarbon. CFC's breaks the molecular O_3 into O_2 and O. Thus layer of ozone get thinner and not able to prevent UV radiations.
6. UV- B radiations

7. The DDT accumulated by the organisms can neither be metabolized nor excreted, hence the concentration of DDT has increased in the body of birds. DDT at high concentration interferes with calcium metabolism decline in bird population due to thinning of egg shell leading to premature breaking of eggs. This phenomenon is called Biomagnification.

8.

a. Increase in level of greenhouse gases causing global warming.

b. Polar caps and glaciers will melt, rise in sea level, mutation of DNA are some consequences.

9. **Biochemical oxygen demand (BOD**, also called biological oxygen demand) is the amount of dissolved oxygen needed (i.e., demanded) by aerobic biological organisms to break down organic material present in a given water sample at certain temperature over a specific time period.

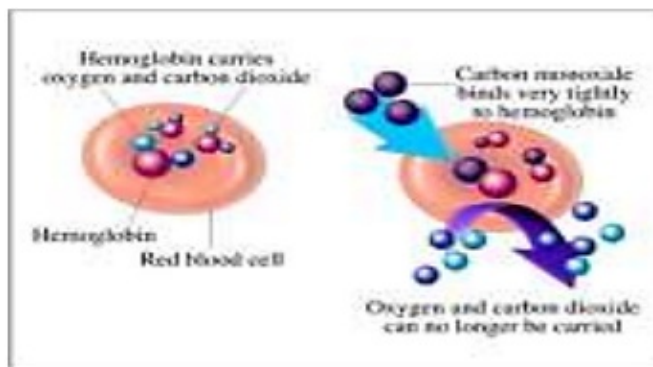
Chemical oxygen demand (COD) is an indicative measure of the amount of oxygen that can be consumed by reactions in a measured solution. It is commonly expressed in mass of oxygen consumed over volume of solution which in SI units is milligrams per litre(mg/L).

10. Scrubbers are generally employed in removing gaseous pollutants. In a scrubber, the exhaust is passed through a spray of water or lime. Water dissolve gases and lime reacts with sulphur dioxide to form a precipitate of calcium sulphate or sulphite.

11. It is a cyclic, zero waste procedure, where waste products from one process are cycled as nutrients for other processes. This allows the maximum utilization of resource and increases the efficiency of production.

12. i. Health Consciousness, kindness for humanity and leadership quality.
ii. Carbon monoxide is produced by common household appliances. When not properly ventilated, carbon monoxide emitted by these appliances is accumulated. Carbon monoxide is an odourless, tasteless, and colourless gas and is known as the "silent killer. "Early symptoms of carbon monoxide poisoning such as headaches, nausea, fatigue, Dizziness, Weakness, Nausea, Vomiting, Chest pain. Prolonged

exposure can lead to brain damage and even death.



13. **(i) The two measures are:**

Switching over the entire fleet of public transport (buses) from diesel to compressed natural gas (CNG) CNG burns most efficiently and very little of it is left unburnt and hence reduction in pollution.

Phasing out of old vehicles : Phasing out of old vehicles and application of stringent pollution level norms for vehicles reduced vehicular pollution as the old vehicles are not efficient in the burning of fuel and liberated smoke and unburnt components.

(ii) The EURO-II norms emphasis to control use of sulphur at 350 ppm in diesel but 150 ppm in petrol oil. The aromatic HC's due to be controlled at 42% in the fuel. Further engines in vehicles must be upgraded and all vehicles and automobiles would observe **Bharat Stage II** from 1st April 2004 to improve air quality in our country.

14. The state Govt. of Delhi took following measures to improve the quality of air -

- i. Use of CNG buses as public transport system
- ii. Use of unleaded petrol
- iii. Phasing out of old vehicles
- iv. Use of low sulphur diesel
- v. Use of catalytic converters in the vehicles
- vi. Application of Euro-II norms for vehicles Yes, the air quality has certainly improved with a substantial fall in the concentration of carbon monoxide, oxides of sulphur and nitrogen.

15. Due to biomagnifications of DDT, i.e. excess presence of DDT in the body of the bird interferes with calcium metabolism and causes thinning of eggs shell hence the eggs break prematurely and there is a decline in the bird population.

