

Chapter 18: Pollution of Air and Water

Multiple Choice Questions

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1. (d) 2. (a)

EXERCISE

A. Tick (✓) the correct options.

1. (b) 2. (c) 3. (a) 4. (c) 5. (b) 6. (a)

B. Fill in the blanks.

1. carbon dioxide 2. temperature 3. Chlorofluorocarbons
4. Potable 5. Pesticides 6. air

C. Match the following.

1. (b) 2. (d) 3. (a) 4. (c)

D. Very Short Answer Questions.

1. Eutrophication
2. Hydroelectric energy
3. Sulphuric acid and nitric acid
4. Alum
5. April, 1985
6. (a) sulphur dioxide, sources – burning of fossil fuels
(b) carbon monoxide, sources – incomplete combustion of fossil fuels

E. Short Answer Type-I Questions.

1. Global warming is the rise in average temperature of the atmosphere of the earth due to the increase in greenhouse effect.
2. Methods to control air pollution:
 - (i) We should use catalytic converters in automobiles which convert harmful gases into harmless gases.
 - (ii) We should grow more plants and trees to reduce carbon dioxide concentration in the air.
3. Washing away of fertilisers into water bodies causes increased growth of algae and other weeds in water bodies. This is called algal bloom.
4. Smoke and dust that arise from forest fires or volcanic eruptions are the natural sources of air pollution.
5. (i) Excessive use of fertilisers and pesticides should be discouraged.
(ii) Dead bodies should not be disposed of in a river or a lake.
6. The increase in concentration of harmful chemical substances like pesticides in the body of living organisms at each trophic level of a food chain is called biological magnification.

F. Short Answer Type-II Questions.

1. Damaging effects of ozone layer depletion are:
 - (a) Harmful ultraviolet radiations reaching the earth cause various diseases in human beings such as cataract, skin cancer, dimming of eyesight, etc.
 - (b) Harmful ultraviolet radiations can bring about changes in the gene structure leading to mutations.
 - (c) Harmful ultraviolet radiations cause damage to early developmental stages of fishes, crabs and other animals.
2. The main causes of water pollution are :
 - (a) **Industrial sewage** : The discharge of untreated industrial sewage directly into water bodies is one of the main causes of water pollution.

- (b) **Domestic sewage:** Liquid wastes from domestic activities such as kitchen and toilets are discharged into rivers through sewage systems causing water pollution.
 - (c) **Human activities:** Bathing of human beings and animals in or near lakes, rivers, etc., pollutes the water bodies.
 - (d) **Agricultural wastes :** In modern agriculture, we use large quantities of pesticides and fertilisers than required by the plants. Excess of these inorganic chemicals find their way to water bodies which results in water pollution.
 - (e) **Oil spill:** Oil spill from huge tankers is one of the major cause of water pollution which affects the marine plants and animals.
3. Damaging effects of acid rain are:
- (a) Acid rain increases the acidity of soil and thus, affects the plant and animal life living in it. It leads to the loss of soil fertility.
 - (b) Acid rain makes the water of lakes and rivers acidic leading to destruction of aquatic plants and animals.
 - (c) Acid rain destroys monuments and buildings.
 - (d) Acid rain promotes corrosion of metallic objects like railway bridges, etc.
4. (a) No, Mr Mehta should not shift to petrol instead of CNG because CNG is a cleaner fuel and is good for the environment.
- (b) It is right to use catalytic converters in the cars because they convert the harmful gases into harmless gases.
5. Sedimentation, loading, filtration, chlorination and storage

G. Long Answer Questions.

1. Harmful effects of air pollution are as follows:
- (a) Carbon monoxide is a very poisonous gas coming out from automobiles. When inhaled in excess, it can kill a person without warning as it is a colourless and odourless gas.
 - (b) Oxides of sulphur (sulphur dioxide and sulphur trioxide) cause respiratory problems and damage lungs.
 - (c) Oxides of nitrogen cause lung congestion.
 - (d) Fumes coming out of chemical industries cause irritation in eyes, nose and throat.
 - (e) Particles of lead oxide present in the automobile exhausts can affect the brain of children.
 - (f) Particles of dust in air can cause bronchitis.
2. (a) The phenomenon due to which the earth's atmosphere traps solar radiations because of the presence of gases like carbon dioxide,

water vapour, methane and chlorofluorocarbons is called greenhouse effect. Carbon dioxide, methane are the greenhouse gases.

- (b) Global warming is the rise in average temperature of the atmosphere of the earth due to the increase in greenhouse effect.

Harmful effects of global warming are:

- (i) Polar caps would melt and water would flow into the sea. If the level of water in the sea increases, low lying areas near coasts would be submerged.
- (ii) Climate and rainfall pattern would change.

3. The steps involved in the purification of river or lake water—

- (a) Water from river or lake is first pumped into the sedimentation tank. Here, the large insoluble impurities settle down at the bottom. Some light insoluble impurities remain suspended.
- (b) Then water is passed to loading tank where these suspended impurities also settle down faster by the addition of some chemicals like alum.
- (c) Then, water is passed to filtration tank. Here it passes through the layers of sand, gravel and charcoal, which filter the remaining impurities.
- (d) Then chlorine is added to the water, which kills all the germs present in the water.
- (e) The water is now fit and safe for drinking.