

**EXERCISE****A. Answer the following questions.**

1. What is the effect of air pollution on life in general?

**Ans.** Effects of air pollution on life :

- **Short-term health hazards:** These results from temporary exposure to harmful materials and last for a short while. For example, skin allergies.
- **Long-term health hazards:** these last for a long time due to continuous exposure to hazardous materials. Eg., asthma and allergies.
- Oxides of Nitrogen impair function of enzymes in respiratory system.
- Gaseous hydrocarbons causes change in the structure of DNA which may result in lung cancer.
- Benzene has been linked with an increase in cancer.

2. Name any three human activities which cause pollution of air.

**Ans.** Three human activities which cause pollution of air are:

- **Nitrogen cycle:** Human activities have caused an imbalance in these cycles. For instance, farmers use fertilisers which are rich in nitrogen. When these fertilisers are washed away into water bodies, the growth of bacteria and algae increases by the nitrogen present in the water. Marine life is thus affected.
- **Carbon and oxygen cycles:** Burning of fossil fuels disturb this cycle when oil and coal, carbon dioxide is released into the atmosphere. Phytoplankton absorbs this carbon dioxide and same is released into the atmosphere and absorbed by the forests. This will not be possible if huge amount of vegetation on Earth is destroyed.
- **Deforestation:** Depletion of forests leads to Global warming which in turn may cause havoc on earth due to climate change.

3. How does increase in carbon dioxide affect atmosphere?

**Ans.** Increase in carbon dioxide leads to Global warming. This ultimately leads to climate change.

4. What are the adverse effects of radiation on human beings?

**Ans.** Radition is known to cause an increase in the incidence of cancer and many such related disorders.

5. What is meant by Global warming?

**Ans.** Global warming is the observed and projected increases in the average temperature of Earth's atmosphere and oceans due to increase in large amount of carbon dioxide.

6. How does soil pollution affect human life?

**Ans.** Effects of soil pollution on human life:

- Various chemicals and organic materials present in soil results in various health hazards for humans.
- Chemical fertilizers washed into waterways poison water supplies and kill aquatic life
- These fertilizers destroy the soil's natural balance which in turn affects the agricultural activities.
- The soil pollution leads to erosion, lacks in nutrients and starts a vicious cycle in which more fertilisers must be used to make up for soil depletion.

7. Suggest two ways by which atmosphere is affected by industrial pollution.

**Ans.** The two ways in which atmosphere is affected by industrial pollution are:

- Manufacturing industries release a wide range of pollutants in the air.
- Oil refineries discharge harmful gases like Ammonia, Hydrocarbons and Sulphur oxides.
- Aluminium plants release fluoride dust.
- Cement industries emit plenty of dust which is very harmful.
- Increasing quantity of these harmful gases may increase global warming and results in melting of ice in Polar Regions.

8. State the effects of chemicals on human beings.

**Ans.** Effects of chemicals on human beings are

1. **Fluorides** cause fluorosis, humped back, stiffness of bone joints and dental fluorosis.
2. **Lead** is toxic to both central and peripheral nervous system. It can accumulate in the bones.



3. **Pesticides** can cause tumours, chromosomal alterations, brain damage, impotency and cancer.
4. **Arsenic** in mild doses cause nausea, vomiting and stomach burns. In lethal doses it may cause death due to shock and vascular failure.
5. **Mercury** damages the nervous system. It may lead to insomnia, tremors, bleeding of gums etc. Methyl mercury may cause Minamata disease which is a form of mercury poisoning.

9. What does Eutrophication mean?

**Ans.** Eutrophication is the process of depletion of oxygen from water bodies, such as lake and estuaries due to natural or human factors.

10. Write short notes on :

(a) Bhopal gas tragedy

**Ans.** ● The Bhopal Gas tragedy was the worst industrial accident that occurred on 3rd December 1984. The accident was caused by release of 40 tonnes of Methyl Iso Cyanate (MIC) into the atmosphere from Union Carbide's pesticide factory in Bhopal.

● Effects of Bhopal Gas Tragedy:

- The blood of the victims in the tragedy had permanently got toxified, leading to the damage of the brain, kidneys, lungs, muscles and gastro intestinal system etc.
- MIC also interfered severely with the reproductive ability of men and other animals.
- The various plant species have suffered from chromosomal aberrations.

(b) Chernobyl disaster.

**Ans.** ● It occurred on April 26, 1986 at the Chernobyl Nuclear plant in Ukraine. It happened in the early hours when the operators were conducting an experiment in the nuclear plant premises.

- The main reasons for Chernobyl disaster were poor plant design, incompetence and poorly designed safety measures.

**Effects of Chernobyl Disaster:**

- Whole of Western USSR and other European countries were contaminated by gamma emissions deposited in soil.

- Meat and dairy products were contaminated.
- Radioactive clouds travelled across Europe and spread the dust at random everywhere.
- Thousands of people became exposed to Chernobyl radiation, affecting living organisms.
- They may cause genetic disorders, variety of cancers, and Leukaemia.

**11.** Why do people in cities suffer from viral fever, allergies etc.?

**Ans.** People in cities suffer from viral fever, allergies etc., because:

- Of the chemical toxicants and micro-organisms present in the polluted water which may lead to malaria, dengue, chickengunia, etc.
- Oxides OF Nitrogen in the air may cause asthma, impairs functions of enzymes in respiratory system.
- Ozone is a toxic gas that causes irreversible damage to the respiratory track and lung tissue.

**12.** What are the effects of Noise Pollution?

**Ans. Effects of Noise Pollution**

Noise pollution causes discomfort and may lead to temporary or permanent damage to hearing. It may adversely affect humans –

- Sleep disturbances
- Hearing loss
- Interference with communication
- Annoyance
- Headache
- General fatigue
- Rise in blood pressure
- Problems with the digestive system.

**B. Choose the correct option.**

**1.** Which of the following substance is responsible for causing fluoro-sis?

- |             |               |
|-------------|---------------|
| (a) Lead    | (b) Fluorides |
| (c) Arsenic | (d) Mercury   |

2. Which of the following substance is responsible for causing Minamata disease?
- (a) Lead (b) Fluorides  
(c) Arsenic (d) Mercury
3. Which of the following process is responsible for the depletion of oxygen from the water body?
- (a) Biomagnification (b) Bioaccumulation  
(c) Eutrophication (d) Oxygen cycle
4. Bhopal Gas Tragedy (3rd December, 1984) was caused by the release of
- (a) CFC (b) Nitrogen dioxide  
(c) Sulphur dioxide (d) MIC
5. Chernobyl disaster occurred on April 26, 1986 due to
- (a) Oil spillage  
(b) Overflow of river water  
(c) Meltdown in a nuclear reactor  
(d) Leakage of poisonous gas
6. The process by which the toxic compound enter a food chain & increases its concentration in the tissues of organism as it travels up the food chain, is called
- (a) Eutrophication (b) Biomagnification  
(c) Bioradiation (d) Bioaccumulation

**Answer**

1. b    2. d    3. c    4. d    5. c    6. b

