

# Effects of Pollution

## Exercises

### I. Short Answer Questions.

#### Question 1.

How does noise pollution affect animals ?

#### Answer:

Noise from industries, railways, crackers, explosions and commotion in the cities and aircraft, affect animals, birds, mice, fishes and domestic animals. Birds avoid migrating to places where noise level is above 100 dB. The noise emissions caused by supersonic aircraft and railways may cause miscarriage in mammals and fishes as well. Some of the birds have been found to have stopped laying eggs due to noise pollution

#### Question 2.

What major harm is done to the human beings by air pollution ?

#### Answer:

It causes irritation in eyes, nose, throat, asthma etc, headache, slurring of speech, lung cancer, damage to nerves, brain fiver and kidneys.

#### Question 3.

How are the animals affected by air pollution ?

#### Answer:

Polluted grass is eaten by the animals cause arsenic poisoning. Lead poisoning results in bronchitis and lack of appetite in pet animals.

#### Question 4.

What is the effect of oil spills on marine life ?

#### Answer:

Sea water polluted with oil leakage causes oil spills which contaminate sea water and lead to the death of marine organisms.

#### Question 5.

What causes waterborne diseases ? Name two waterborn diseases.

#### Answer:

Phosphates and Nitrates from fertilizers, industrial effluents e.g. Arsenic, Mercury, Cadmium, Lead etc. Gastrointestinal problems, typhoid etc.

#### Question 6.

In what way does soil pollution affect human beings?

#### Answer:

Human beings are affected through food chains e.g. Nitrogenous fertilizers produce

toxic concentration of nitrate and nitrite in the leaves through soil, pollution of soil by underground water polluted by industrial wastes. Eutrophication causes pollution of water and soil making it infertile and unsuitable for plant growth.

**Question 7.**

Give the impact of radiations on the human body.

**Answer:**

Damage is caused to the offsprings and organs of the body. Several diseases are caused e.g., breast cancer, thyroid cancer, lung cancer, brain cancer and defective eye sight.

**Question 8.**

Why are nuclear radiations more dangerous than other forms of pollution ?

**Answer:**

Nuclear radiations survive for a long period upto hundred years resulting in widespread effects to pollute the natural environment.

**Question 9.**

What caused the Bhopal gas tragedy ?

**Answer:**

This was the worst industrial accident on December 3 1984, when about 40 tons of methyl isocyanate (MIC) leaked into the atmosphere from Union Carbides pesticide factory in Bhopal in Madhya Pradesh.

**Question 10.**

What caused the Chernobyl disaster ?

**Answer:**

This was a radioactive accident in 1986 in Chernobyl in Ukraine on April 26. When a reactor of nuclear power complex at Chernobyl exploded. A massive steam explosion, the core of the reactor combined with water to produce hydrogen exploded blowing toxic radioactive gases into the air.

**Question 11.**

What were the after-effects of the Bhopal gas tragedy?

**Answer:**

The tragic after effects were blinding people, choking their breathing and suffocating them, damaged the eyes, lungs and nervous system, upset the urine system and loss of unborn babies, different plant species were also damaged.

## II. Long Answer Questions

### Question 1.

Noise pollution is detrimental to human health and environment. Discuss.

#### Answer:

Noise pollution has ill effects not only on the human beings but also on the environment.  
Human Health

1. **Effect on hearing or Deafness** : Continuous exposure to noise levels above 100 dB has an adverse effect on hearing ability within a fairly short time. Many workers who are exposed to the noise of jet aircraft or very noisy workshops for even moderate periods soon develop detectable hearing defects.
2. **Effect on Communication** : External sounds can interfere with conversation and use of the telephone, as well as the enjoyment of radio and television programmes.
3. **Repeated interference with sleep** : Different people have different depths of sleep and they can adjust to natural sounds. However, noisy conditions near residential areas at night causes difficulties in sleeping.
4. **Mental or Physiological Effects** : Many people complain that noise makes them mentally ill. Experiments have been performed to attempt to confirm or disprove these claims. Doctors and scientists have now medically confirmed that \*noise disturbs the biological organisms and their respective functions.
5. **Effects on Physical health and Psychological problems** : Noise has little physical effect on the biological performance provided that the noise level is below about 90 dB. Damage to the inner ear may result if continuous noise levels exceed about 100 dB and can lead to physical illness. Psychiatrists and psychologists have in recent researches made observations that noise has certain relation with physical health causing tension resulting in problems such as speech interference, annoyance, fatigue, sleep interference and emotional distress.  
**Effects on Environment** : The noise booms cause cracks in national and archaeological monuments Very high levels of noise are the cause of cracks in hills. High intensity explosions can break glass panes and vibrations in the buildings.

### Question 2.

How does air pollution affect human beings and environment

#### Answer:

Air pollution affects human health in various harmful diseases e.g. irritation in eyes, headache, vomiting, respiratory disease, cancer, damage to liver and kidneys. SO<sub>2</sub> causes harm to plants by yellowing the leaves, NO<sub>2</sub> causes suppressed growth of plants. Animals eating the polluted grass are affected with arsenic poisoning. Soot, dust and fumes discolour the fabrics and buildings. The Taj Mahal has suffered damage caused by SO<sub>2</sub> in the air by getting discoloured and corroded. SO<sub>2</sub> and H<sub>2</sub>SO<sub>4</sub> causes corrosion of metals like steel, copper and zinc.

### Question 3.

Explain how the accumulation of nutrients and chemicals in the water prove fatal for the marine organisms.

#### Answer:

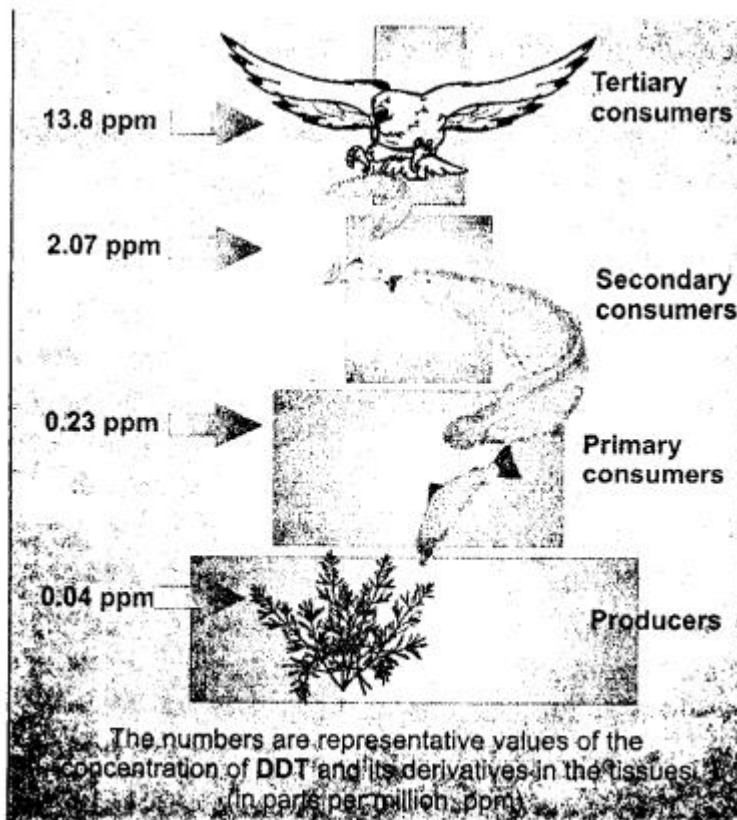
Eutrophication causes in growth of phytoplankton and algae which reduce the penetration of oxygen, light and heat into the water bodies, so, the marine organisms suffer greatly and mostly die.

### Question 4.

Explain with the help of a diagram how the accumulation of toxic substances increases as we move up the food chain.

#### Answer:

Nitrogenous fertilizers produce toxic concentration of nitrate and nitrite in the leaves, which are eaten by animals and as ; vegetables by men, which is very harmful for health. Eutrophication is dangerous to marine life and the secondary consumers eating fish etc. are also adversely affected through complicated diseases. Harmful pathogens are transferred to human through vegetables and fruits.



**Biomagnification**

### Question 5.

Explain the effects of soil pollution on human beings and environment.

#### Answer:

Soil pollution causes contamination of plants which may affect the human health and the scarcity of oxygen disturbs the natural composition of air and air pollution promotes unwanted diseases.

### Question 6.

Explain with examples the effects of radiations on the environment and on humans.

#### Answer:

Radiations emitting from radioactive materials and the disposal of radioactive wastes cause pollution and damage the environment. The high level products of nuclear wastes remain in the environment for several hundred years. Radioactive threats to the environment are the accidents connected with the activities of nuclear reactors, nuclear-powered vessels and satellites, etc. On human being it causes genetic variations, and somatic variation i.e. damage to body organs, breast cancer, thyroid cancer, lung cancer, brain cancer and defective eyesight.

### Question 7.

What was the immediate and long term effects of the leakage of MIC gas from the Union Carbide's pesticide factory in Bhopal ?

#### Answer:

This accident killed 3500 people and 40,000 people were affected in an area of 100 sq. km. Gas leakage did the people blind, loss of body control, loss of unborn babies, damage to brain, kidney, lungs, intestinal diseases, damaging the reproductive ability and plant species.

### Question 8.

What harm did radioactive pollution do in the Chernobyl disaster ?

#### Answer:

After the disaster, four square kilometres of pine forest near the reactor turned reddish-brown and died. Horses also died 6 km. away by thyroid damage whole of western USSR and other European countries are contaminated by gamma emitters deposited on the soil. Meat and dairy products were contaminated with Caesium-137. About 7,00,000 people became exposed to Chernobyl radiation, expecting bad health problems.

### Question 9.

What Is the impact of toxic compounds on human beings ?

#### Answer:

**Toxic Compounds :**

- Mercury, Methyl mercury
- Heavy metals, Cadmium

- Arsenic
- Fluoride

**Impact on Human beings :**

- 'Minamata' disease in Japan.
- 'Itai-itai' disease in Japan.
- Cancer, ulcers, kidney failure.
- 'Fluorosis' discolouring of teeth.