

# Sources of Pollution

## Exercises

### I. Short Answer Questions

#### Question 1.

Name any three air pollutants and the sources of each of them.

**Answer:**

**Pollutant :**

1. Carbon Monoxide (CO) :
2. Nitrogen Oxides (NO<sub>x</sub>) :
3. Sulphur Oxides (SO<sub>x</sub>) :

**Sources :**

1. Gasoline fuel, motor vehicles fuel, burning of wood and coal, solid waste disposal, Industrial processes.
2. Primary sources are motor vehicles and power generation stations, combustion of organic matters, furnace stacks, incinerators.
3. Mainly due to burning of coal, smelting operations, refineries, chemical plants, open burning of garbage and municipal incinerators.

#### Question 2.

What are natural sources of air pollution ?

**Answer:**

Natural sources are volcanic eruptions, sand, dust, forest fires etc.

#### Question 3.

Name one industry which pollutes the atmosphere with gaseous as well as with particulate matter.

**Answer:**

Automobile industry.

#### Question 4.

What is known as smog ? What harm is done by smog especially in winter ?

**Answer:**

Smog means smoke + fog. In winter season smog is responsible for many accidents due to the obstacle in visibility.

**Question 5.**

Name three gases emitted during burning of garbage.

**Answer:**

These are Carbon dioxide, Sulphur dioxide, Nitrogen oxides.

**Question 6.**

Mention any two sources of water pollution.

**Answer:**

**Two sources of water pollution are :**

- household detergents and sewage,
- oil spills

**Question 7.**

Name two heavy metals from industries that pollute water.

**Answer:**

Heavy metals are Lead and Mercury.

**Question 8.**

Mention any four sources of soil pollution.

**Answer:**

These are industrial wastes, domestic waste, chemical fertilizers and pesticides.

**Question 9.**

Why are radioactive pollutants very dangerous ?

**Answer:**

The emission of radioactive minerals Uranium 235 Plutonium 239, make the whole surroundings radioactive after fission and carried away by wind to long distances. These are dangerous to health, as these remain as it is for a long time.

**Question 10.**

What kind of solid and liquid pollutants does the offshore drilling produce ?

**Answer:**

Drilling produces dust, stones etc and crude oil spills pollute largely the oceanic water and disturb marine life.

**Question 11.**

What are primary pollutants ?

**Answer:**

The pollutants that are directly emitted from the sources and are found in the atmosphere in the form in which they are emitted are known as primary pollutants, e.g., ash, radioactive compounds, oxides of sulphur and nitrogen etc.

**Question 12.**

With an example, state what are secondary pollutants?

**Answer:**

The pollutants that are formed in the atmosphere by chemical interactions between primary pollutants and atmospheric constituents are known as secondary pollutants. Examples of secondary pollutants are Sulphur trioxide, Ozone, Peroxyacetyl Nitrate (PAN), Ketones etc.

**Question 13.**

What is the connection between urbanisation and air pollution ?

**Answer:**

The major connection between urbanisation and air pollution are automobiles, industries, burning of garbage and brick kilns. These sources release pollutants such as oxides of carbon, oxides of sulphur, oxides of nitrogen, and hydrocarbons, ozone, chlorofluoromethanes, etc.

**Question 14.**

How much are the automobiles responsible for air pollution ?

**Answer:**

Automobiles are mainly responsible for 80% air pollution, emitting Carbon monoxide, Hydrocarbons, Nitrogen monoxide etc.

**Question 15.**

How are brick kilns a source of gases and particulate matter that cause air pollution ?

**Answer:**

Brick kilns produce huge amount of Carbon oxides, smoke and dust etc.

**II. Long Answer Questions :****Question 1.**

**With reference to noise pollution, answer the following:**

1. How does traffic contribute to noise pollution ?
2. Why are the construction sites considered as worse than factories in their contribution to noise pollution ?
3. How do the airplanes cause noise pollution ?

**Answer:**

1. The increasing number of vehicles on the roads are a big source of noise pollution. Increasing traffic jams in congested areas lead to repeated hooting of horns by impatient drivers causing noise pollution.

2. Noise from construction sites is generally far worse than noise originating from factories. This is because whatever construction takes place noise emissions levels are higher as well as the equipment is inherently noisy.
3. Noise pollution caused by airplanes has been increasing steadily during recent years, especially in the areas close to international airports. This problem has mainly arisen because of the widespread use of heavy long-range jet aircraft. Noise made by jet planes is more disturbing than that of the old propeller driven aircraft because it is of far higher pitch. Jet noise is caused by the violent mixing of the jet of gases from the engine with the surrounding air. It is at maximum level during take-off when the engine delivers maximum thrust, and falls away rapidly as the aircraft climbs. During landing, the main source of high-frequency noise is the sound made by the air compressor and turbine blades. Aircraft pass close to the ground for quite a distance during the landing operation and this noise often constitutes a more sustained environmental nuisance than the intense noise of shorter duration produced during take-off.

### **Question 2.**

Air pollution is the contamination of air by pollutants. In this context answer the following :

**(i) How does the use of automobiles cause air pollution ?**

**Answer:**

Automobiles produce large amount of CO, hydrocarbons, oxides and suspended particulate matter and cause air pollution.

**(ii) Write short notes on industrial air pollution.**

**Answer:**

Industrial pollution cannot be avoided, as without it development is not possible. So it is an unavoidable problem faced by urban industrial areas, because harmful gases, garbage etc. is emitted by industrial activities, e.g. Industries release CO, oxides of Sulphur and Nitrogen, smoke, dust etc. to the air.

**(iii) What special kind of air pollution do the brick kilns produce?**

**Answer:**

Dust and smoke are the main elements produced by the brick kilns to pollute the air.

### **Question 3.**

With reference to the sources of water pollutants answer the following questions:

**(i) Why is it harmful to dispose of household detergents in water bodies ?**

**Answer:**

Detergents contain some phosphates which are helpful to produce algae and aquatic weeds which pollute the water.

**(ii) In what way does the industrial waste pollute water?**

**Answer:**

Many harmful wastes are produced by the industries which ; pollute water, e.g. Kanpur leather works continuously are polluting water of Ganga river creating a big problem. Industrial wastes mixed with water make it poisonous and unhygienic and may result in various diseases.

**(iii) How do the radioactive wastes get into the water bodies?**

**Answer:**

Wastes produced by nuclear power stations nuclear weapons / testing, research laboratories, and hospitals, are the main radioactive wastes which pollute the water bodies.

**(iv) How is the thermal pollution of water caused ? What are its effects ?**

**Answer:**

The thermal power plants located near the rivers use water for cooling purposes. They release the recycled hot water into the rivers leading to thermal pollution. The hot water makes the temperature of aquatic environment rise which endangers the aquatic ecosystem.

**Question 4.**

Write short notes on soil pollution by

**(a)** Pesticides

**(b)** Biomedical waste.

**Answer:**

**(a)** Pesticide waste mixed with the soil make it harmful for natural composition of soil and natural plants which cannot be taken in food material due to toxic material and the soil is contaminated for a long time.

**(b)** Biomedical waste Hospital wastes contain organic materials, chemicals, metal, needles, plastics contaminate the soil and make it unfit for growth of plants etc. Third world countries are facing this problem deeply.

**Question 5.**

What are the sources of radioactive pollution ? Describe each of them.

**Answer:**

These are natural sources from cosmic rays, man-made sources by use of X-rays, nuclear weapons, Atomic reactors and fuel, radioactive isotopes in research laboratories are the main reasons to pollute rivers, streams and lakes etc. through sewers.

**Question 6.**

What are the man-made sources of air pollution ?

**Answer:**

Man-made sources are human activities, e.g., industries, factories, urban settlement, aircraft, nuclear experiments, automobiles, agricultural and power plants etc. are the sources of air pollution.