

Board –CBSE

Class –8th

Topic – Pollution of Air and Water

Pollution

Pollution is the introduction of harmful or poisonous substances into environment that may cause adverse effects.

Air Pollution

It is the contamination of air, which takes place due to unwanted substances which causes harmful effects on both biotic and abiotic components.

The things which are responsible for contamination of air are called air pollutants. These pollutants may result from natural causes like smoke or dust from forest fires or volcanic eruptions and from man-made causes like burning of fuels, smoke from factories etc.

Effects of Air Pollution

1. Problems related to respiratory system might be caused due to air pollution.
2. O_2 carrying capacity of blood reduces because of improper burning of vehicle fuels.
3. Smog: It comprises of smoke and fog. It contains oxides of nitrogen and causes problems in breathing, cough, etc. Also, there are visibility problems in affected areas.
4. SO_2 resulting from burning of fuels such as coals might result in respiratory problems.
5. Electronic devices like refrigerators, air conditioners, etc. emit chlorofluorocarbons (CFCs). CFCs damage the ozone layer present in the atmosphere. And the ozone layer is responsible for protecting us from harmful ultraviolet rays of the sun.

Acid Rain

Gases like Sulphur and nitrogen react with the water vapour present in the

environment to form sulphuric acid and nitric acid.

The acids drop down with rain water, making the rain acidic. This is called acid rain. Acid rain can be harmful for living beings and also for non-living things. Acid rain corrodes the outer surface of buildings. This has caused the Taj Mahal becoming pale.

The Acid rain has corroded the marble of this monument. And this phenomenon is called "Marble cancer".

Greenhouse Effect

It is the trapping of radiations inside the earth's atmosphere. Along with other gases, CO_2 also gets trapped in the atmosphere which is responsible for Greenhouse Effect.

Because of human activities the amount of CO_2 level has increased in the atmosphere which traps heat and does not allow heat to escape into space. As a result, the average temperature of the earth's atmosphere is gradually increasing. This is called global warming.

Effect of Global Warming

1. Global warming can cause sea levels to rise dramatically. In coastal areas have already been flooded.
2. Global warming could result in wide ranging effects on rainfall patterns, agriculture, forests, plants and animals.

Key points to Prevent Air Pollution

1. Trees take up carbon dioxide and release oxygen. So, planting more number of trees will reduce the amount of carbon dioxide responsible for Greenhouse Effect.
2. We should use CNG; instead of petrol and diesel in automobiles.
3. Avoid unnecessary usage of vehicles.
4. Try using public transport more.
5. Location of factories and industries must be in remote areas to avoid problems resulting in air pollution.
6. Natural resources like solar energy, tidal energy, etc. should be used.

Water Pollution

The addition of undesirable and unwanted material in water which makes water harmful for biotic and abiotic components is called water pollution.

The things which pollute the water are known as water pollutants. Example includes washing of clothes, industrial waste from factories, etc.

Potable Water

The water which is convenient for consumption is known as potable water.

Effects of Water Pollution

1. River Ganga is one of the ten most endangered rivers in the world. Large quantities of garbage, untreated sewage, dead bodies, and many other harmful things are discharged into the river. All these have resulted into adverse conditions for the aquatic animals residing in the Ganga.
2. The harmful chemicals like arsenic, lead, etc. discharged by various industries have lead to many bad effects like impure water, acidity changes in water, etc.
3. The usage of pesticides and weedicides in the field gets mixed with water bodies during rainfall. Infact, this water seeps into ground and has polluted ground water too.
4. Various diseases like cholera, diarrhoea, jaundice, etc. results from water pollution.
5. Bacteria present in the faeces of mammals indicate the quality of water. If such fecal contaminated water is consumed then it can cause many infections.

Key points to Prevent Water Pollution

1. Some plans can be implemented for polluted rivers like Ganga Action Plan was launched in 1985 with the aim of reducing pollution levels in river.
2. Industries must treat the waste before discharging them into waters.
3. At household level, candle type filter can be used. Moreover, water must be boiled before using for drinking as it kills the germs inside the water.
4. Chemical process like chlorination can be used for treating water.

5. Laws for industrial units should be strictly implemented to stop the throwing of wastes in water.

6. Proper sewage treatment plan must be implemented.

7. The idea of reduce, reuse and recycle should be incorporated for prevention of water pollution.

3R's for Prevention of Water pollution

1. Reduce: Waste prevention reduces the generation of waste in the first place. So we should not create wastage by reducing the uses of goods.

(i) While brushing your teeth, leaving the tap running may waste several litres of water. A tap that drips once every second wastes a few thousand litres of water every year. So we should reduce the water uses for brushing teeth.

(ii) Purchasing durable, long-lasting goods.

(iii) Reduce the use of non-biodegradable materials like things made of plastic, disposals, polythene etc.

2. Reuse: We can reuse the things in our daily routine work so that it will reduce the amount of wastage.

(i) Reusing water used for washing and for other household tasks. For example, water used for washing vegetables may be used to water plants in the garden.

(ii) Refill bottles, Reuse boxes.

(iii) Reuse the cotton or jute bag instead of polythene carry bag.

(iv) Use empty jars into containers for leftover food.

3. Recycle: Recycling prevents the generation of many greenhouse gases and water pollutants, and saves energy.

(i) Materials made of plastic, paper, glass and metal should be recycled to make new items.

(ii) Using recycle material generates less solid wastage.

We should realise our responsibility and start using environment-friendly processes for survival of

