

Science

(Chapter – 18) (Pollution of Air and Water)

(Class – VIII)

Exercises

Question 1:

What are the different ways in which water gets contaminated?

Answer 1:

Water gets contaminated in the following ways:

- Various industrial units dispose - off wastage including harmful chemicals in rivers. These chemicals are poisonous and contaminate water.
- Water gets contaminated when sewage is disposed - off (without proper treatment) in rivers.
- Ground water gets contaminated by harmful insecticides and pesticides sprayed by farmers and it get mixed with drinking water through rain water.

Question 2:

At an individual level, how can you help reduce air pollution?

Answer 2:

Air pollution should be checked at individual level:

- At individual level, we can plant trees as trees reduce air pollution.
- We can use public transportation and encourage carpooling so that air pollution can be reduced.
- Instead of going by cars and scooters for short distances, we can go by foot or by bicycles.
- By saying no to crackers we can minimise air pollution as well as noise pollution.
- We should not burn garbage and dry leaves. The burning of dry leaves and garbage release greenhouse gases which are responsible for global warming.

Question 3:

Clear, transparent water is always fit for drinking. Comment.

Answer 3:

Transparent water is not always fit for drinking. It may contain harmful microorganisms, soluble salts and other pollutants. Sometime water looks like pure but it contains dissolved salts or bacteria which are not good for us. We should purify water before drinking. Water can be purified with the help of water purifier or by boiling it.

Question 4:

You are a member of the municipal body of your town.

Make a list of measures that would help your town to ensure the supply of clean water to all its residents.

Answer 4:

We can take following measures:

- Water should be treated properly to make it free from harmful germs, chemical and physical impurities.
- Enforce laws to treat water and chemicals before disposing into water bodies.
- Proper maintenance of pipes supplying tap water to avoid any corrosion, breakage and leakage.
- Organize awareness programmes to keep water resources clean and make a habit of conserving water.

Question 5:

Explain the differences between pure air and polluted air.

Answer 5:

Pure air consists of a mixture of gases in proper amount which is good for living being. If by volume, about 78% of this mixture is nitrogen, about 21% is oxygen, carbon dioxide, argon, methane, ozone and water vapour are also present in very small quantities, then it is called *pure air*.

When air is contaminated by unwanted substances which have a harmful effect on both the living and the non-living, it is referred to as *polluted air*.

Question 6:

Explain circumstances leading to acid rain. How does acid rain affect us?

Answer 6:

When harmful gases like sulphur dioxide and nitrogen dioxide, react with the water vapour present in the atmosphere to form sulphuric acid and nitric acid. The acids drop down with rain, making the rain acidic. This is called *acid rain*.

Acid rain causes skin irritation, inhibits germination of plants, causes corrosion to bridges and building. It changes the fertility of the soil, destroys plants and aquatic life.

Question 7:

Which of the following is not a greenhouse gas?

- (a) Carbon dioxide
- (b) Sulphur dioxide
- (c) Methane
- (d) Nitrogen

Answer 7:

- (d) Nitrogen

Question 8:

Describe the 'Green House Effect' in your own words.

Answer 8:

Green House effect is a process by which solar radiation is absorbed by greenhouse gases and the temperature of Earth atmosphere is increased. This increase in the temperature of the surroundings is responsible for global warming. Gases like CO₂, Methane, nitrous oxide, water vapour, etc. trap heat radiation and are called greenhouse gases.

Green houses are often used for growing flowers, vegetables and plants (Mainly in cold region). Now because of increase in concentration of greenhouse gases in our environment is adversely affecting the climate.

Question 9:

Prepare a brief speech on global warming that you have to make in your class.

Answer 9:

Continuous increase in temperature of the Earth due to increase levels of greenhouse gases is known as Global warming. Global warming is one of the biggest concern worldwide. Scientists believe climate shifting, melting of glaciers (e.g. Gangotri glacier), sudden floods in coastal areas are due to global warming. The Kyoto Protocol is one such agreement made among the countries to reduce emission of greenhouse gases.

Small contributions on our part can make a huge difference in the state of the environment.

We can plant trees and nurture the ones already present in the neighborhood.

Question 10:

Describe the threat to the beauty of the Taj Mahal.

Answer 10:

Due to increase of gases like sulphur dioxide and nitrogen dioxide, acid rain take place. Acid rain corrodes the marble of the monument. The phenomenon is also called “Marble cancer”. Suspended particulate matter, such as the soot particles emitted by Mathura oil refinery, has contributed towards yellowing of the marble.

Question 11:

Why does the increased level of nutrients in the water affect the survival of aquatic organisms?

Answer 11:

Excessive quantities of chemicals (fertilizers, weedicides, pesticides etc.) washed from the fields enter into ponds. These act as nutrients for algae to flourish. Once these algae die, they serve as food for decomposers like bacteria. In this process a lot of oxygen in these ponds gets used up. This results in a decrease in the oxygen level, which kills aquatic organisms.