NCERT Solution Class 8 Science Chapter 18 Pollution of Air and Water

Exercise Questions

1. What are the different ways in which water gets contaminated ?

Soln:

The different ways in which the water gets contaminated are:

i) Industrial waste: The harmful chemical wastes gets released by the industries into water sources .

ii) Sewage waste: kitchen, laundry and toilets release the waste materials and this pollutes water.

iii) Agricultural chemicals: Excessive amount of pesticides and fertilizers are used by the farmers for enhancing crop production. Rains and floods carry these harmful chemicals to water bodies which results in pollute water pollution.

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

Soln:

The following are the steps we can take for reduction of air pollution:

i) We should avoid the usage of personal cars and opt for public transport as much as possible.

ii) We should properly dispose of the garbage and not burn it.

iii) For shorter distances, avoid vehicles.

iv) We should control the number of emissions from household chimneys and vehicles.

v) We should replace our vehicle fuel, diesel and petrol by LPG and CNG.

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

Soln:

No, we don’t agree to the statement that clean water is always fit for drinking because water might appear clean but it may contain some disease-causing micro-organisms and several other dissolved impurities. Hence, we advise purifying the water by boiling or by any purifying system before drinking it.

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.

Soln:

The following are the measures taken by us to ensure the supply of clean water to our town resident:

a) We clean the area around the water pipes.

b) The main water source has to be built in a clean surrounding and should be maintained properly.

c) Chemical methods such as chlorination must be used for purifying water.

5. Explain the differences between pure air and polluted air.

Soln:

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The composition of pure air contains 78% nitrogen, 21% oxygen and 0.03% carbon dioxide. Besides these, there are some other gases like methane, argon, ozone and water vapors'. The air is said to be polluted when the composition of air is altered by the addition of harmful substances or gases such as sulphur dioxide, carbon monoxide, nitrogen dioxide and particulate matter.

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

Soln:

Sulphur dioxide and nitrogen dioxide are the type of pollutants, which are released into the atmosphere by the burning of fossil fuels like diesel and coal. These pollutants react with the water vapours present in the atmosphere to form nitric acid and sulphuric acid respectively. By precipitation, these acids come down and form the acid rain.

Effects caused by the acid rain:

a) It destroys the crops.

b) Harmful for the building especially to those made of white marble like the Taj Mahal.

7. Which of the following is not a greenhouse gas?

(a) Carbon dioxide

(b) Sulphur dioxide

(c) Methane

(d) Nitrogen

Soln:

Answer is (d) Nitrogen

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

Soln:

The greenhouse effect is the cause of global warming, i.e. overall increase in the temperature of the Earth. The greenhouse gases cause the greenhouse effect. Examples of greenhouses gases include methane, CO2 and water vapour. When solar radiation reaches the Earth, some radiations are absorbed by the Earth and then released back to the atmosphere. Greenhouse gases present into the atmosphere trap these radiations and do not allow the heat to leave. This helps our planet in keeping warm and thus helps in human survival. However, an indiscriminate increase in level of greenhouse gases, it can lead to an excessive increase in the Earth's temperature leading to global warming.

9. Prepare a brief speech on global warming. You have to deliver the speech in your class.

Soln:

The increase in the average temperature of the Earth's surface is known as Global warming. It occurs due to the increased concentration of greenhouse gases in the atmosphere. The greenhouse gases include methane, CO_2, and water vapour. These gases trap the solar radiations released back by the earth, which results in keeping our planet warm and helps in human survival. However, an increase in these gases can lead to an increase in the earth temperature resulting in global warming.

10. Describe the threat to the beauty of the Taj Mahal.

Soln:

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The major threat to the Taj Mahal is the acid rain. When the acid rain falls on the Taj, which is completely made of marble, they react with marble to form a powder like substance which is then washed away by the rain. This phenomenon is known as marble cancer. In addition, the soot particles emitted from the Mathura oil refinery located near Agra is leading to the yellowing of Taj Mahal marble.

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

Soln:

An increase in the level of nutrients in water body leads to an excessive increase in the population of algae in the water body. When these algae die, they serve as food for decomposers. A lot of oxygen is utilized in this process, consequently leading to a decrease in the level of oxygen dissolved in the water body. This in-turn causes fishes and aquatic organisms to die.

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