18. Pollution of Air and Water

Very Short Answer Type Questions

1. Question

Name the gas present in atmosphere which is mainly responsible for causing global warming.

Answer

Carbon dioxide is the gas which is mainly responsible for causing global warming. Carbon dioxide traps heat and does not allow it to escape into space causing an increase in the average temperature of the earth's atmosphere.

2. Question

Name two gases present in polluted air which can cause acid rain.

Answer

Sulphur dioxide and Nitrogen dioxide are the gases present in polluted air which causes acid rain.

3. Question

Name all the major pollutants of air.

Answer

The gases like carbon dioxide, carbon monoxide, Sulphur dioxide, nitrogen dioxide and chlorofluorocarbons are the major pollutants of air.

4. Question

Which air pollutant combines with the haemoglobin of our blood?

Answer

Carbon monoxide combines with the haemoglobin of our blood. It reduces the oxygen carrying capacity of blood.

5. Question

Name the various air pollutants discharged by motor vehicle exhausts.

Answer

The various air pollutants discharged by motor vehicle exhausts are carbon dioxide, carbon monoxide, nitrogen oxides and smoke.

6. Question

Which gas in the upper atmosphere prevents ultraviolet radiations of the sun from reaching the earth?

Answer

Ozone layer in the upper atmosphere prevents ultraviolet radiations of the sun from reaching the earth.

7. Question

Name any two diseases caused by drinking polluted water containing sewage.

Answer

Drinking of polluted water containing sewage causes diseases like cholera, typhoid and jaundice.

8. Question

Name any four toxic metals whose compounds are present in industrial wastes.

Answer

Arsenic, lead, mercury and fluorides are the toxic metals whose compounds are present in industrial wastes.

9. Question

Name any two types of chemicals used in agriculture which cause water pollution.

Answer

Pesticides and weedicides are the chemicals used in agriculture which cause water pollution.

10. Question

The use of excessive fertilizers in the fields lead to the deficiency of an important substance in the water of a nearby lake. Name the substance.

Answer

The use of excessive fertilizers in the fields lead to the deficiency of Oxygen in the water of a nearby lake. This may kill the aquatic organisms.

Short Answer Type Questions

11. Question

What is Ganga Action Plan? When and why was it launched?

Answer

The plan to save the river Ganga was launched in 1985 is called the Ganga Action Plan. It was aimed to reduce the pollution levels in the river. Recent study by WWF – World wide fund for nature have found that Ganga is one of the most endangered rivers in the world. Large quantities of garbage, untreated sewage, dead bodies and many other harmful things are thrown directly into the river. The river is almost dead at many places where the pollution level is very high and the aquatic life cannot survive.

12. Question

Name any four pollutants which cause water pollution. State any three ways of controlling water pollution.

Answer

The harmful substances like sewage, toxic materials, silt etc., when gets mixed with water, causes water pollution. The pollutants which cause water pollution are:

Chemical waste from industries, sewage, silt, agricultural chemicals and garbage thrown into water.

Water pollution can be controlled in the following ways:

● Water should go through the sewage treatment plants before discharging into the water bodies.

● Use of pesticides and weedicides should be limited in order to prevent pollution.

● Industrial waste should be treated for harmful chemicals before discharging into the water bodies. Water treatment plants should be installed in all the industrial areas.

● We should save water consciously and should prevent the wastage of water. We must reuse, recycle and reduce the usage of water. We must try to reuse water. For example, water used for washing vegetables can be used to water plants in the garden.

13. Question

How do industries cause water pollution?

Answer

Industries cause water pollution in the following ways:

● Industries such as oil refineries, paper factories, textile and sugar mills and chemical factories discharge harmful chemicals into rivers and streams. These chemicals include arsenic, lead and flourides which are very toxic to plants and animals.

● The soil is also affected by impure water which causes changes in acidity of soil and affects the growth of worms and plants etc.

● Some industries and power plants releases hot water into the rivers. Hot water can also be considered as a pollutant. It raises the temperature of the water body and adversely affects the plants and animals living in it.

14. Question

How can you help reduce air pollution at the individual level?

Answer

Pollution is not a distant phenomenon anymore. It is affecting the quality of our day to day lives. We must realize our responsibility and should start using the following environment- friendly processes:

● We should switch to cleaner fuels like CNG- Compressed natural gas and LPG- Liquified petroleum gas for both industries and automobiles.

● Automobiles should also use unleaded petrol.

● We should plant more trees which will help to control deforestation.

● Industrial waste should be treated for harmful chemicals before discharging into air the water bodies.

● We must switch to alternative fuels instead of fossil fuels. Alternative sources of energy can be solar energy, hydropower and wind energy.

● We must encourage the use a public transport, a bicycle or walking for short distances. This will help to reduce the use of fossil fuels.

● Burning of plant waste also causes pollution by the emission of smoke. Plant waste must be put in a compost rather than burning.

15. Question

Explain the difference between pure air and polluted air.

Answer

Pure air is a mixture of several gases that are invisible and odorless. It consists about 78% nitrogen, 21% is oxygen and less than 1% of Carbon dioxide and other gases like argon, methane and ozone and varying amount of water vapors. Polluted air on the other hand, is contaminated with the substances like smoke, dust and other harmful substances called pollutants.

These pollutants can come from natural sources like smoke and dust arising from forest fires or volcanic eruptions. Pollutants can also be added from the human activities. The sources of air pollution are automobile exhausts, power plants, factories and burning of firewood and dung cakes.

16. Question

What is 'greenhouse effect'? State its importance for us.

Answer

The sun's rays warms the surface of earth. A part of the radiation which falls on the earth is reflected back into the space and only a part of it is absorbed. This trapped radiation further warms the earth. The trapping of radiation by the earth's atmosphere is known as Greenhouse effect. Life would not have been possible without this process. Carbon dioxide is one of the gases responsible for this effect. Some other gases like methane, nitrous oxide and water vapors also contribute towards this process.

17. Question

Name two greenhouse gases? Which one of them produces the maximum greenhouse effect?

Answer

The trapping of radiation by the earth's atmosphere is known as Greenhouse effect. Life would not have been possible without this process. Carbon dioxide and methane are greenhouse gases. Carbon dioxide produces the maximum greenhouse effect.

18. Question

What depletes the ozone layer in the atmosphere? What are the harmful effects of the depletion of ozone layer on us?

Answer

Chlorofluorocarbons used in refrigerators, air conditioners and aerosol sprays are responsible to deplete the ozone layer in the atmosphere. Ozone layer protects us from harmful ultraviolet rays of the sun. There has been a depletion of ozone layer in the layers of atmosphere which has been caused by the chlorofluorocarbons and other atmospheric pollutants. This results in increase of ultraviolet radiations at ground level which gives rise to an increased risk of skin cancer.

19. Question

Name one source and one harmful effect of each of the following air pollutants:

(a) Sulphur dioxide

(b) Nitrogen oxides

(c) Carbon monoxide

(d) Chlorofluorocarbons (CFCs)

Answer

(a) The source of Sulphur dioxide in the air is the fossil fuels combustion in the power plants and other industries. It can also be produced by the motor vehicles emissions.

Sulphur dioxide is a very harmful pollutant when present in the atmosphere. It can cause the respiratory problems, including permanent lung damage.

(b) The source of nitrogen dioxide in the air is produced by the motor vehicles.

Nitrogen dioxide is a very harmful pollutant because it combines with other air pollutants and fog to form smog. The smog is responsible for causing breathing difficulties such as asthma, cough and wheezing in children.

(c) The source of carbon monoxide in the air is by the incomplete burning of fuels such as petrol and diesel.

Carbon monoxide is a very poisonous gas which reduces the oxygen carrying capacity of blood.

(d) The Chlorofluorocarbons are used in the refrigerators, air conditioners and aerosol sprays.

The Chlorofluorocarbons are responsible to deplete the ozone layer in the atmosphere. Ozone layer protects us from harmful ultraviolet rays of the sun. This results in increase of ultraviolet radiations at ground level which gives rise to an increased risk of skin cancer.

20. Question

Explain why, even clear, transparent and odourless water may not always be safe for drinking.

Answer

Even the clear, transparent and odourless water may not always be safe for drinking because it may contain pollutants. These pollutants include the chemicals which may be discharged from the Industries such as oil refineries, paper factories, textile and sugar mills and chemical factories. These chemicals include arsenic, lead and flourides which are very toxic to human beings, plants and animals. These pollutants can also be chemicals used in farming such as pesticides and weedicides. All these chemicals dissolve in water and are washed into water bodies from the fields. They also seep into the ground and pollute ground water.

21. Question

Explain why, hot water released by power plants and industries is considered a pollutant.

Answer

Some industries and power plants releases hot water into the rivers. Hot water can also be considered as a pollutant. It raises the temperature of the water body and adversely affects the plants and animals living in it.

22. Question

Why does the increased level of nutrients (or fertilizers) in the lake water affect the survival of aquatic organisms (like fish)?

Answer

Some ponds or lakes have a lot of green algae growing in them. This is caused due to the excessive quantity of chemicals which are washed from the fields. These chemicals act as nutrients for these algae to grow. When these algae die, they act as a nutrient for decomposers like bacteria. As a result of this process, a lot of oxygen in the water gets used up causing the decrease of oxygen level. This affects the survival of aquatic plants which can also kill them.

23. Question

Explain how, the use of pesticides in agriculture causes water pollution.

Answer

The use of pesticides in agriculture is responsible in causing the water pollution. It is also caused due to the excessive use fertilizers in the fields. These fertilizers act as nutrients for the algae to grow. When these algae die, they act as a nutrient for decomposers like bacteria. As a result of this process, a lot of oxygen in the water gets used up and leads to the deficiency of Oxygen in the water. This may kill the aquatic organisms.

24 A. Question

Describe the threat to Taj Mahal monument due to air pollution.

Answer

Taj Mahal is India's famous historical monument which is located in Agra. It has become a matter of concern to protect Taj Mahal due to the discoloration of its white marble. This is caused due to air pollution in Agra. The industries which are located in and around Agra such as Mathura Oil refinery, rubber processing, automobile and chemical industries have been responsible for the emission of air pollutants. These pollutants include Sulphur dioxide and nitrogen dioxide which reacts with water vapors in the atmosphere to form

sulphuric acid and nitric acid. These acids combine with rain and makes the rain water acidic. Acid rain corrodes the marble of Taj Mahal. The suspended particles emitted by these industries have also contributed towards the yellowing of the marble.

24 B. Question

State any two ways of controlling air pollution;

Answer

Several steps have been taken by Supreme court to protect Taj Mahal. The industries around Taj Mahal have been ordered to switch into clean fuels such as Compressed natural gas-CNG and Liquified petroleum gas- LPG. It has been advised that the automobiles should be switched over to unleaded petrol.

25 A. Question

What-is potable water? Name any two methods to make water safe for drinking.

Answer

The water which is safe for drinking without any risk of health problems is called potable water. Water can be made safe for drinking in the following ways:

● Household filters such as candle type filters can be used at homes to make the water safe for drinking.

● Boiling of water can be done before drinking at home. Boiling kills, the germs present in water and makes water safe for drinking.

● Chlorination can also be done for purifying water at home. It can be done by adding chlorine tablets or bleaching powder into water. Only specific number of chlorine tablets should be used.

25 B. Question

State two ways in which you conserve water at home by, preventing its wastage.

Answer

We should save water consciously and should prevent the wastage of water. We must reuse, recycle and reduce the usage of water.

We must try to reuse water. For example, water used for washing vegetables can be used to water plants in the garden.

We must try to save water by regularly checking the pipelines for any leakage or damage. We should always check for any open taps after using water

supply.

Long Answer Type Questions

26 A. Question

What is meant by water pollution? What are the different ways in which water gets polluted?

Answer

The harmful substances like sewage, toxic materials, silt etc., when gets mixed with water, causes water pollution. The pollutants which cause water pollution are the chemical waste from industries, sewage, silt, agricultural chemicals and garbage thrown into water.

Water gets polluted in the following ways:

● Water can be contaminated by human waste or sewage.

● Industries such as oil refineries, paper factories, textile and sugar mills and chemical factories discharge harmful chemicals into rivers and streams. These chemicals include arsenic, lead and flourides.

● Some industries and power plants releases hot water into the rivers. Hot water can also be considered as a pollutant.

● The excessive use of pesticides and fertilizers in agriculture also causes water pollution.

26 B. Question

State the harmful effects of water pollution.

Answer

Pollution is not a distant phenomenon anymore. It is affecting the quality of our day to day lives. Following are harmful effects of water pollution:

● The chemicals such as arsenic, lead and flourides discharged by the industries are very toxic to plants and animals.

● The hot water released by certain industries raises the temperature of the water body. It adversely affects the plants and animals living in it.

● The fertilizers act as nutrients for the algae to grow. When these algae die, they act as a nutrient for decomposers like bacteria. As a result of this process, a lot of oxygen in the water gets used up and leads to the deficiency of Oxygen in the water. This may kill the aquatic organisms.

● Water contaminated with sewage may contain bacteria, viruses, fungi and parasites which can cause diseases like cholera, typhoid and jaundice.

27 A. Question

What is air? Write the names of various constituents of air.

Answer

Pure air is a mixture of several gases that are invisible and odorless. It consists about 78% nitrogen, 21% is oxygen and less than 1% of Carbon dioxide and other gases like argon, methane and ozone and varying amount of water vapors.

27 B. Question

What is air pollution? What are the main sources of air pollution?

Answer

Polluted air is contaminated with the substances like smoke, dust and other harmful substances called pollutants. These pollutants can come from natural sources or from human activities. Following are the main sources of air pollution:

● The natural sources of air pollution are smoke and dust arising from forest fires or volcanic eruptions.

● The pollutants can also be added from the human activities. These are from automobile exhausts, power plants, factories and burning of firewood and dung cakes.

● The pollutants like Sulphur dioxide and Nitrogen dioxide when present in polluted air causes acid rain.

● The gas called carbon monoxide enters the air by the incomplete burning of fuels such as petrol and diesel. It is a very poisonous gas which reduces the oxygen carrying capacity of blood.

● The Chlorofluorocarbons which are used in the refrigerators, air conditioners and aerosol sprays also act as air pollutants. They are responsible to deplete the ozone layer in the atmosphere.

28. Question

What is smog? How is smog formed? What are its harmful effects?

Answer

A thick fog- like layer in the atmosphere which is made up of smoke and is called smog. The smoke released is released into the atmosphere due to various activities like automobile exhausts, power plants, factories and burning of firewood and dung cakes etc., The smoke may contain the oxides of nitrogen which combines with other air pollutants and fog to form smog. The smog is very harmful in the following ways.

● The smog is very harmful and causes breathing difficulties such as asthma, cough and wheezing in children.

● Smog reduces visibility which may result in road accidents.

29. Question

What is acid rain? How is acid rain caused? What are the harmful effects of acid rain?

Answer

The industries such as oil refineries, rubber processing, automobiles and chemical industries have been responsible for the emission of air pollutants. These pollutants include Sulphur dioxide and nitrogen dioxide which reacts with water vapors in the atmosphere to form sulphuric acid and nitric acid. These acids combine with rain and makes the rain water acidic. This is called Acid rain. Following are the harmful effects of acid rain:

● Acid rain is very harmful for fish and other animals. It makes the water acidic and causes them to absorb the aluminum that makes its way from soil into lakes and streams.

● Increased acidity of water due to acid rain adversely affects the growth and reproduction ability of fishes.

● It damages buildings, monuments and statues.

30. Question

What is global warming? What are the likely harmful effects of global warming?

Answer

The trapping of radiation by the earth's atmosphere is known as Greenhouse effect. Life would not have been possible without this process. Carbon dioxide and methane are greenhouse gases. Carbon dioxide produces the maximum greenhouse effect. Due to increase in the amount of carbon dioxide in the atmosphere, the average temperature of the earth's atmosphere is gradually increasing. This is called **global warming**.

Global warming has become a major concern for governments worldwide. Many countries have reached an agreement to control the situation by reducing the emission of greenhouse gases. Following are the harmful effects of global warming:

● Global warming can cause sea levels to rise dramatically. It has resulted in flooding of coastal areas in many places.

● It could result in wide ranging effects on rainfall patterns, agriculture, forests, plants and animals.

● It has caused an increase in the melting of polar icecaps which has resulted in the rise of sea level more quickly over the last century.

● There has to be check on the emission of greenhouse gases at the present level. This may cause the temperature to rise by more than 2 degrees by the end of the century which is very dangerous.

Multiple Choice Questions (MCQs)

31. Question

Which of the following is not a greenhouse gas?

A. carbon dioxide

B. nitrous oxide

C. methane

D. nitrogen

Answer

Carbon dioxide is the gas which is responsible for greenhouse effect. Some other gases like methane, nitrous oxide and water vapors also contribute towards this process.

32. Question

Which of the following air pollutant reduces the oxygen-carrying capacity of blood to a large extent?

A. carbon dioxide

B. nitrogen monoxide

C. carbon monoxide

D. sulphur dioxide

Answer

The source of carbon monoxide in the air is by the incomplete burning of fuels such as petrol and diesel. Carbon monoxide is a very poisonous gas which reduces the oxygen carrying capacity of blood.

33. Question

The constituent of polluted air which contributes in producing acid rain is:

A. nitrogen

B. sulphur dioxide

C. oxygen

D. argon

Answer

The source of Sulphur dioxide in the air is the fossil fuels combustion in the power plants, industries and motor vehicles emissions. It is a very harmful pollutant when present in the atmosphere. It can cause the respiratory problems, including permanent lung damage.

34. Question

The Kyoto Protocol is associated with one of the following. This one is:

A. reduction in the use of chlorofluorocarbons.

B. reduction in the emission of greenhouse gases

C. reduction in the cutting of forest trees

D. reduction in pollution of fresh water sources

Answer

Global warming has become a major concern for governments worldwide. Many countries have reached an agreement to control the situation by reducing the emission of greenhouse gases.

35. Question

Which of the following will be reduced in air in a city forest when a lot of dust and fly ash in emitted by a coal-based factory in the vicinity?

A. nitrogen

B. carbon dioxide

C. oxygen

D. water vapour

Answer

The various air pollutants discharged by motor vehicle and by the burning of fossil fuel in a factory are carbon dioxide, carbon monoxide, nitrogen oxides and smoke. It results in the decrease in the amount of oxygen in the air.

36. Question

Which of the following disease cannot be caused by drinking of river water contaminated with untreated sewage?

A. cholera

B. typhoid

C. tuberculosis

D. diarrhea

Answer

The water contaminated with sewage may contain bacteria, viruses, fungi and parasites which cause diseases like cholera, typhoid and diarrhea.

37. Question

Which of the following statement about ozone is correct?

A. it is essential for breathing

B. it absorbs ultraviolet rays

C. its proportion in air is about 3%

D. it is mainly responsible for global warming

Answer

Ozone layer in the upper atmosphere prevents ultraviolet radiations of the sun from reaching the earth.

38. Question

Drinking water can be made absolutely safe by adding some:

A. aspirin tablets

B. iodine tablets

C. chlorine tablets

D. chlorophyll tablets

Answer

Chlorination can be done by adding chlorine tablets or bleaching powder into water. Only specific number of chlorine tablets should be used.

39. Question

The excessive use of one of the following in agriculture can cause the death of fish in a pond by oxygen starvation. This one is:

A. fertilizers

B. manures

C. pesticides

D. herbicides

Answer

The fertilizers act as nutrients for the algae to grow. When these algae die, they act as a nutrient for decomposers like bacteria. As a result of this process, a lot of oxygen in the water gets used up and leads to the deficiency of Oxygen in the water. This may kill the aquatic organisms.

40. Question

Which of the following is usually not a water pollutant?

A. sewage

B. fertilizer

C. fly ash

D. pesticide

Answer

Fly ash is the air pollutant which is produced by the insufficient burning of fuels which enters into the atmosphere causing air pollution.

41. Question

Which of the following are used in electric water filters to kill all the harmful micro-organisms present in tap water and make it absolutely safe for drinking?

A. infrared radiation

B. gamma radiation

C. visible radiation

D. ultraviolet radiation

Answer

Ultraviolet radiations kill bacteria and viruses and are used in electric water filters to make water safe for drinking.

42. Question

Which of the following is not an air pollutant?

A. sulphur dioxide

B. sewage

C. CFCs

D. SPM

Answer

The harmful substances like sewage, toxic materials, silt etc., when gets mixed with water, causes water pollution. The gases like carbon dioxide, carbon monoxide, Sulphur dioxide, nitrogen dioxide and chlorofluorocarbons are the major pollutants of air.

43. Question

Which of the following air pollutant is capable of preventing photosynthesis in plants?

A. CFCs

B. nitrogen oxides

C. dust

D. carbon monoxide

Answer

Dust reduces the photosynthesis in plants due which causes a decrease in energy production in plants causing the plants to suffer.

44. Question

One of the following does not contribute in producing acid rain. This one is:

A. nitrogen dioxide

B. nitrogen monoxide

C. carbon monoxide

D. sulphur dioxide

Answer

The air pollutants such as Sulphur dioxide and nitrogen dioxide which reacts with water vapors in the atmosphere to form sulphuric acid and nitric acid. These acids combine with rain and makes the rain water acidic. This is called Acid rain.

45. Question

Which of the following will reach the earth in greater amounts if the number of chlorofluorocarbons released into the air increases?

A. infrared rays

B. X-rays

C. gamma rays

D. ultraviolet rays

Answer

Chlorofluorocarbons used in refrigerators, air conditioners and aerosol sprays are responsible to deplete the ozone layer in the atmosphere. Ozone layer protects us from harmful ultraviolet rays of the sun.

Questions Based on High Order Thinking Skills (HOTS)

46. Question

The farmers use large amounts of a substance P in the fields to increase the crop yield. The excess of P dissolves in water and runs into a lake. The substance P causes rapid growth of tiny green water plants Q in the lake which cover the whole lake like a green sheet. When the plants Q die, the organisms called R decompose them by utilizing S dissolved in lake water. The amount of dissolved Sin water decreases too much due to which the fish living in lake suffocate and die. What are P, Q, R and S?

Answer

The substance P is Fertilizer. The fertilizers act as nutrients for the algae to grow. When these algae die, they act as a nutrient for decomposers like bacteria. As a result of this process, a lot of oxygen in the water gets used up and leads to the deficiency of Oxygen in the water. This may kill the aquatic organisms.

The substance Q is Algae, R is Bacteria and S is oxygen.

47. Question

At many places the wastewater containing human excreta from homes and carried in big underground pipes is dumped into a river as such which pollutes the river water.

(a) What is the common name of such wastewater?

(b) Name five types of harmful organisms contained in it.

(c) Name any five human diseases caused by drinking river water contaminated with such wastewater.

Answer

(a) The common name of such wastewater is Sewage. The harmful substances like sewage, toxic materials, silt etc., when gets mixed with water, causes water pollution.

(b) Sewage water contains bacteria, viruses, protozoa, fungi and parasites(worms) which may cause diseases like cholera, typhoid and jaundice. The bacteria present in the fecal matter of mammals are indicates the quality of water. If water has these bacteria, it means that it has been contaminated by fecal matter. If such water is used by us, it can cause various infections.

(c) Drinking river water contaminated with such wastewater can result into diseases such as Cholera, Typhoid, Diarrhea, Dysentery and Jaundice.

48. Question

Match the items given in column I with one or more items given in column II:

Column I	**Column. II**
(i) Prevents photosynthesis	(a) Sewage dumped in river
(ii)Damage ozone layer	(b) Excess fertilizer in fields
(iii) Produce acid rain	(c) Carbon dioxide in air
(iv) Kill fish by deoxygenating water	(d) Dust in air
(v) Causes water borne diseases	(e) CFCs
(vi) Leads to global warming in air	(j) Sulphur dioxide

Answer

(i) Prevents photosynthesis - (d) Dust in air

Dust reduces the photosynthesis in plants due which causes a decrease in energy production in plants causing the plants to suffer.

(ii) Damage ozone layer - (e) CFCs

Chlorofluorocarbons used in refrigerators, air conditioners and aerosol sprays are responsible to deplete the ozone layer in the atmosphere. Ozone layer protects us from harmful ultraviolet rays of the sun.

(iii) Produce acid rain - (j) Sulphur dioxide

Sulphur dioxide and nitrogen dioxide which reacts with water vapors in the atmosphere to form sulphuric acid and nitric acid. These acids combine with rain and makes the rain water acidic. This is called Acid rain.

(iv) Kill fish by deoxygenating water - (b) Excess fertilizer in fields

The fertilizers act as nutrients for the algae to grow. When these algae die, they act as a nutrient for decomposers like bacteria. As a result of this process, a lot of oxygen in the water gets used up and leads to the deficiency of Oxygen in the water. This may kill the aquatic organisms including fish.

(v) Causes water borne diseases - (a) Sewage dumped in river

Sewage water contains bacteria, viruses, protozoa, fungi and parasites(worms) which may cause diseases like cholera, typhoid and jaundice.

(vi) Leads to global warming in air - (c) Carbon dioxide in air

Carbon dioxide is the gas which is mainly responsible for causing global warming. Carbon dioxide traps heat and does not allow it to escape into space causing an increase in the average temperature of the earth's atmosphere.

49. Question

State one way in which the air pollution caused by the burning of fossil fuels in transport and industry can kill the fish living in a lake and one way in which the water pollution caused by an agricultural activity can kill fish living in the same lake.

Answer

Fossil fuels burn in the air to produce gases such as Sulphur dioxide and nitrogen dioxide. Sulphur dioxide and nitrogen dioxide which reacts with water vapors in the atmosphere to form sulphuric acid and nitric acid. These acids combine with rain and makes the rain water acidic. This is called Acid rain. Acid rain caused by the burning of fossil fuels makes the lake water too much acidic which kills the fish.

The fertilizers act as nutrients for the algae to grow. When these algae die, they act as a nutrient for decomposers like bacteria. As a result of this process, a lot of oxygen in the water gets used up and leads to the deficiency of Oxygen in the water. This may kill the aquatic organisms including fish.

50. Question

The incomplete combustion of firewood in homes produces a very poisonous gas X. When inhaled, gas X combines with the substance Y present in blood and reduces the capacity of blood to carry gas Z causing respiratory problems and suffocation. What are X, Y and Z?

Answer

The incomplete combustion of firewood in homes produces a very poisonous gas X which is known as Carbon monoxide. When inhaled, Carbon monoxide combines with the substance Y known as Haemoglobin which is present in

blood. Carbon monoxide combines with the haemoglobin of our blood. It reduces the oxygen carrying capacity of blood causing respiratory problems and suffocation. Hence, the substance Z is Oxygen.