

8. Pollution

Practice Questions

Q1) Write the short notes on.

1) Bhopal gas accident

Ans: 1) The worst ever industrial accident had been occurred in Bhopal on the night of 2nd December 1984. There was a leakage of toxic gas 'Methyl isocyanate' from the pesticide plant named Union Carbide India Limited.

2) In this accident, 3000 people died immediately while more than 8000 people died later and many people suffered from illness.

3) The Methyl isocyanate is extremely toxic gas. It causes cough, chest pain, asthma, itching and irritation to eyes, damage to skin and if we come in more contact with it then it causes swelling of lungs, bleeding, pneumonia and a person may die.

4) This gas was spread upto 42,000km at the time of accident.

5) Methyl isocyanate is formed from monomethyl zayn and phosgene.

2) Effects of acid rain

Ans: 1) The acidity of water changes due to acid rain. It affects aquatic plants, animals and entire ecosystem.

2) Acids are erosive, therefore busts, buildings, historical monuments, metal idols, marble construction gets destroyed. It cracks.

3) The texture of soil changes due to acid rain. The toxic aluminium, mercury present in ground gets dissolved and harm plants. The leaves of plants burn. Causes dead spot disease.

4) If acid come in contact with human in the dry form or in the form of smoke, smog then causes lung disease.

5) Due to acidification of water in water bodies and pipes, leaching of metal and plastic material occurs in water and thereby serious health problems arise.

6) Forests get destroyed and if sea water is acidified, the coral is at risk of destruction. If there is content of acid in water then eggs of fish do not hatch and big fishes die.

3) Greenhouse effect

Ans: 1) The CO_2 in atmosphere of the earth has capacity to absorb the heat reflected from the earth's surface. Due to this capacity, the temperature of earth goes on increasing. This is called greenhouse effect.

2) The proportion of CO_2 has been increased due to industrialization, limitless use of fossil fuels, agriculture and some aspects of daily life.

3) Similar to CO₂, water vapour, methane, nitrous oxide, ozone, CFC also trap the heat. Collectively, these are called as greenhouse gases.

4) Global temperature is gradually increasing due to greenhouse effect.

5) Due to this, atmosphere is changing, causing disturbances in agricultural yield, distribution of wild animals. Icebergs and glaciers are melting causing increase in sea level.

4) Chlorofluorocarbon (CFC/ Freon)

Ans: 1) Frederick Swartz first started developing CFC in 1890.

2) Thomas Midgley improved this method in 1970 and explained/ stated that CFC can be used as an alternative for the toxic gases like ammonia and sulphur dioxide used in refrigerators.

3) The CFC in refrigerators is also known as Freon.

4) CFC destroys the ozone layer.

5) The Montreal protocol was created in 1987, by seeing the reduction in ozone layer over Antarctica continent. In 1989, the production of CFCs in European countries was banned.

6) The production and use of CFCs were banned from developed countries till 2000 and developing countries in 2010.

5) Water Pollutants

Ans: The water pollutants are of three types.

1) **Biological pollutants:** Water does not remain potable due to algae, bacteria, viruses, parasites, etc. Diseases are spread due to biological pollution.

2) **Inorganic pollutants:** Suspended particles like fine sand, dust, soil, precipitates of salt, compounds of arsenic, cadmium, lead, mercury and traces of radioactive material are present in inorganic pollutants.

3) **Organic pollutants:** Weedicides, insecticides, fertilizers, sewage, industrial effluents, etc. are organic pollutants.

Q2) Answer the following .

1) What are the effects of vehicles pollution on human health?

Ans: 1) The toxic gases like carbon monoxide, sulphur dioxide, nitrous oxide, hydrogen sulphide spread in air due to vehicles pollution.

2) Due to combination of carbon monoxide gas with haemoglobin in human blood, the oxygen carrying capacity of blood gets lowered. Also the diseases like dizziness, pressure on the heart, cough, asthma, lung diseases, pneumonia, cold, etc. arise.

3) The respiratory system and other organs get injured due to gases like sulphur dioxide, nitrous oxide, hydrogen sulphide.

2) When does the soil get polluted?

Ans: Very less area of land is available for human use. Soil is said to be polluted when there are changes in its physical biological and chemical properties and its fertility decreases due to either natural or manmade reasons.

3) What are the side effects of excessive use of insecticides, chemical fertilizers used in agriculture?

Ans: 1) The soil gets polluted due to excessive use of insecticides, chemical fertilizers and weedicides.

2) The toxic substances mixed in soil, gets mixed with water or leach into water. This causes water pollution.

3) Due to excessive use of insecticides and weedicides and spraying of chemicals, these chemicals get mixed in air and causes air pollution.

4) What is biomedical waste?

Ans: The garbage/ waste in large hospitals means injection needles, cotton full of blood, bottles and non-decomposable and a waste which does not mix with nature such as plastic bottles, glass bottles, metal pieces, plastic substances, bags does not get decomposed. This waste remains as it is for many years. This is called as biomedical waste.

Q 3) Give reasons.

1) The Palar river in Tamil Nadu state is referred as Gutter river.

Ans: Large number of tanning centres are present in Tamil Nadu. The waste water from these centres is released into the Palar river. Therefore, Palar river is referred as Puzzar Gutter river.

2) Factories and Industries are involved in water pollution.

Ans: The sewage from factories and industries is being released in the water without processing it. This leads to change in the physical and chemical properties of water. Useful aquatic fauna gets destroyed. Toxic materials are added to crops. Therefore, factories and industries are involved in water pollution.

Q 4) What measures should be taken to control pollution in the factory?

Ans: 1) To reduce the severity of pollution in the factory, the height of chimney should be increased.

2) To prevent water pollution, water should be processed in the factory that will be pollution free and then released.

3) Reduce the intensity of particulate pollutants and use dust collector, web scrubber etc.

4) Preventive measures to be undertaken, law enforcement at government level etc.

Q 5) Identify the correlation.

1) _____: Endrin :: Industrial sewage: bleaching chemicals

Ans: Pesticides

2) Nitrogen oxides: _____: : Sulphur dioxide: Smoke of factory

Ans: Smoke of vehicles.

Q 6) State whether the following statements are true or false.

1) Sulphur powder is formed from the atom bomb.

Ans: False (Sulphur powder are formed from the industrialization.)

2) The ozone layer is present below the stratosphere.

Ans: True

3) Water becomes clean due to algae.

Ans: False (Water becomes unclean / stagnant due to algae.)

4) Insecticides are organic pollutants.

Ans: True

Q 7) Write the definition of the following.

1) Greenhouse gas

Ans: The gases such as carbon dioxide, nitrogen oxide, methane gas and chlorofluorocarbon together trap the heat in the atmosphere of the earth. They are called greenhouse gases.

2) Pollutants

Ans: The factors affecting natural functions of ecosystem and causing harmful effects on abiotic and biotic factors are called as pollutants.

3) Pollution

Ans: The contamination of natural environment that will be harmful to ecosystems is called as pollution.

Q 8) Write the answers in one sentence.

1) Which factors are included in volcanic eruption?

Ans: The factors like hydrogen sulphide, sulphur dioxide, carbon dioxide, ammonium chloride, hydrogen, vapours, dust, etc. are included in volcanic eruption.

2) Which natural plant is used as pollution indicator?

Ans: The lichen plant is used as pollution indicator.

3) When did the Bhopal gas accident occurred?

Ans: The Bhopal gas accident occurred on the night of 2nd December 1984.

4) What is the effect of air pollution on the leaves of plants?

Ans: Due to air pollution, the stomata of plants get closed, leaves fall off or becomes yellow.

5) The ultraviolet rays from the Sun are absorbed by which gas?

Ans: The ultraviolet rays from the Sun are absorbed by ozone gas.

6) Which laws are made for the prevention of air pollution?

Ans: The 'Air pollution and prevention act, 1981' law is made for the prevention of air pollution.

7) Which law is made for the prevention of biomedical waste?

Ans: Biomedical waste (Handling and management) – 1998 law is made for the prevention of biomedical waste.

8) Which hazardous rays cannot reach to earth due to layer of ozone gas?

Ans: The ultraviolet rays cannot reach to earth due to layer of ozone gas.

9) When does the oxygen level in water decreases?

Ans: The water becomes stagnant and toxic due to mixture of natural and external factors. This causes the decrease of oxygen level in water.

10) The proportion of which gases on the surface is measured every day?

Ans: The proportion of gases like SO_2 , CO_2 , NO_2 , ozone in the air near surface, particular matter, etc. is measured every day.

11) What are the causes of air pollutants with sulphur?

Ans: The air pollutants with sulphur cause colour change in paints, oil painting, nylon, cotton fabrics, leather articles and papers, etc.
