

**Class: 11**

**Subject: Chemistry**

**Topic: Environmental chemistry**

**No. of Questions: 25**

Q1. What will happen if the wastes are not properly managed?

Sol: If the wastes are not properly managed then it causes health problems leading to epidemics due to contamination of ground water.

Q2. What are the strategies for controlling environmental pollution?

Sol: Strategies for controlling environmental pollution can be  
(i) Waste management i.e. reduction of the waste and proper disposal, also recycling of materials and energy.  
(ii) Adopting methods in day-to-day life, which results in the reduction of the environmental pollution.

Q3. What is green chemistry?

Sol: Green chemistry is a strategy for controlling environmental pollution. It utilizes the existing knowledge and practices so as to bring about reduction in the production of pollutants.

Q4. Extent of a chemical reaction depends on which all parameters?

Sol: Extent of any reaction depends on physical parameters like temperature, pressure and use of catalyst.

Q5. What is green fuel?

Sol: Fuel obtained from plastic waste has high octane rating. It contains no lead and is known as a green fuel.

Q6. What are the major gaseous pollutants?

Sol: The major gaseous and particulate pollutants present in the troposphere are:

Gaseous air pollutants: These are the oxides of sulphur, nitrogen and carbon, hydrogen sulphide, hydrocarbons, ozone and other oxidants.

Particulate pollutants: These are dust, mist, fumes, smoke, smog etc.

Q7. How green chemistry can be used in day-to-day life?

Sol: Hydrogen peroxide is used to bleach clothes in laundry with no contamination of the ground water, and this process of dry cleaning of clothes is an example of green chemistry application in day-to-day life.

Q8. What are the different types of smog?

Sol: There are two types of smog. These are: Classical and Photochemical smog.

Classical smog occurs in cool humid climate. It is a mixture of smoke, fog and sulphur dioxide.

It is also called a reducing smog.

Photochemical smog occurs in warm, dry and sunny climate. The main components of the photochemical smog result from the action of sunlight on unsaturated hydrocarbons and nitrogen oxides produced by automobiles and factories. Photochemical smog is also called as oxidising smog.

Q9. What are the harmful effects of acid rain?

Sol: Acid rain is harmful for agriculture, trees and plants as it dissolves and washes away the nutrients needed for their growth. It causes respiratory ailments in human beings and animals. When acid rain flows as ground water it affects plants and animal life in aquatic ecosystem. It corrodes water pipes resulting in the leaching of heavy metals as iron, lead into the drinking water. Acid rain damages the building and structures made of stone or metal.

Q10. How the global warming can be reduced?

Sol: Global warming can be reduced by minimizing the use of automobiles and growing more plants.

Q11. What is acid rain?

Sol: When acid from the atmosphere is deposited on the earth's surface it is known as acid rain. When pH of the rain water drops below 5.6 it is called as acid rain.

Q12. What are CFCs?

Sol: CFCs are chlorofluorocarbons. These are man-made industrial chemicals used in air conditioning etc, and are damaging the ozone layer.

Q13. Which reagent is used for the bleaching of paper to reduce the environmental pollution?

Sol: Green chemistry is cost effective approach. Hydrogen peroxide with suitable catalyst is used to bleach paper.

Q14. How the industrial wastes are sorted out?

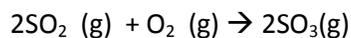
Sol: The industrial wastes are sorted out as biodegradable and non-degradable wastes.

Q15. Why carbon monoxide is poisonous?

Sol: Carbon monoxide binds to haemoglobin to form carboxyhaemoglobin that is 300 times more stable than the oxygen-haemoglobin complex. In blood when the concentration of carboxyhaemoglobin reaches 3-4 % the oxygen carrying capacity of blood is reduced. This oxygen deficiency results in different disorders.

Q16. How particulate matter affects air pollution?

Sol: The presence of particulate matter in polluted air catalyses the oxidation of sulphur dioxide to sulphur trioxide.



Q17. How the global warming can be reduced?

Sol: Global warming can be reduced by minimizing the use of automobiles and growing more plants.

Q18. How the biodegradable wastes and non-biodegradable wastes are generated? Give example.

- Sol. A. Biodegradable wastes are generated by cotton mills, food processing units, paper mills and textile factories.  
B. Non-biodegradable wastes are generated by thermal power plants which produce fly ash: integrated iron and steel plants which produce blast furnace slag and steel melting slag.

19. What is smog?

Sol: The word smog is derived from smoke and fog and is the most common example of air pollution.

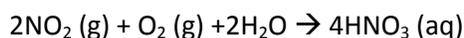
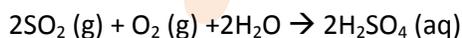
Q20. List gases which are responsible for greenhouse effect.

Sol: The major greenhouse gases are:

1. Carbon dioxide (CO<sub>2</sub>)
2. Methane (CH<sub>4</sub>)
3. Water (H<sub>2</sub>O)
4. Nitrous oxide (NO)
5. Ozone (O<sub>3</sub>)
6. Chlorofluorocarbons (CFCs)

Q21. What are the major contributors to acid rain?

Sol: SO<sub>2</sub> and NO<sub>2</sub> after oxidation and reaction with water are the major contributors to acid rain, as polluted air contains particulate matter that catalyse the oxidation.



Q22. What protects the Earth from UV radiation ?

Sol. Ozone layer

Q23. What is the cause for stratospheric pollution?

Sol. Depletion of ozone layer causes stratospheric pollution.

Q24. Fumes are obtained by:

- (A) Evaporation of vapours in air
- (B) Combustion of Organic matter
- (C) Grinding
- (D) Condensation of vapours during sublimation

Sol. (D)

Fumes are generally obtained by condensation of vapours during sublimation, distillation, boiling.

Q25. A human excreta contains bacteria which causes gastrointestinal diseases are:

- (A) Escherichia coli
- (B) Lactic acid bacillus
- (C) Staphylococcus
- (D) Listeria

Sol. (A) Escherichia coli

Escherichia coli causes gastrointestinal diseases.