



## II. Short Answer Questions

Question 1. How carbon monoxide acts as a poison for human beings?

Answer: Carbon monoxide is poisonous because it combines with haemoglobin of R.B.C. to form carboxyhaemoglobin as.



It inhibits the transport of oxygen to different parts of the body. Thus the body becomes oxygen-starved.

Question 2. What is 'Acid Rain'? How is it harmful to the environment?

Answer: Acid rain is the rain water mixed with small amount of sulphuric acid, nitric acid along with hydrochloric acid which are formed from the oxides of sulphur and nitrogen present in air as pollutants. It has a pH of 4-5.

Harmful effects of Acid Rain

- It is toxic to vegetation and aquatic life.
- It damages buildings and statues. Taj Mahal has been damaged by acid rain.
- Acid rain corrodes water conducting pipes resulting in the leaching of heavy metals such as iron, lead, etc., to the drinking water.

Question 3. What is photochemical smog? What are its effects? How can it be controlled?

Answer: This is a type of smog formed in warm, dry and sunny climate. They are formed when sunlight is absorbed by  $\text{SO}_2$ , oxides of nitrogen and hydrocarbons.

They act as oxidising agents.

Effects of photochemical smog

- They produce irritation in the eyes and also in respiratory system.
- They can damage many materials such as metals, stones, building materials etc.
- $\text{NO}_2$  present gives a brown colour to the photochemical smog which reduces visibility.
- It is harmful to fabrics, crops and ornamental plants.

Control of photochemical smog

- By using catalytic converters in automobiles.
- By spraying certain compounds into atmosphere which generate free radicals that can easily combine with the free radicals that initiate the reaction forming toxic compounds of photochemical smog.
- Certain plants such as pinus, juniparus, pyrus could be helpful in this matter.

Question 4. What do you mean by greenhouse effect? What is the role of  $\text{CO}_2$  in the greenhouse effect?

Answer: It is the phenomenon in which earth's atmosphere traps the heat from the sun and prevents it from escaping in outer space.

Gases such as CO<sub>2</sub>, methane, ozone, CFCs are believed to be responsible for this effect. Heat from the sun after being absorbed by the earth is absorbed by CO<sub>2</sub> and then radiated back to the earth. Thus making the environment of the earth warm.

Question 5. (a) Define eutrophication and pneumoconiosis.

(b) Write difference between photochemical and classical smog.

Answer:

(a) Eutrophication: When the growth of algae increases in the surface of water, dissolved oxygen in water is reduced. This phenomenon is known as eutrophication. (Due to this growth of fish gets inhibited).

Pneumoconiosis: It is a disease which irritates lungs. It causes scarring or fibrosis of the lung.

(b)

Photochemical smog	Classical smog
(i) It is formed as a result of photochemical decomposition of nitrogen dioxide and chemical reactions involving hydrocarbons.	(i) It is formed due to condensation of SO <sub>2</sub> vapours on particles of carbon in cold climate.
(ii) It takes place during dry warm season in presence of sunlight.	(ii) It is generally formed during winter when there is severe cold.
(iii) It is oxidising in nature.	(iii) It is reducing in nature.

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