

CBSE Class 11 Chemistry Chapter 14 Environmental Chemistry Worksheet with Answers – Set 4

Q1. Which of the following gases is responsible for ozone layer depletion?

- (a) Chloro fluoro carbon (CFCs)
- (b) Sulphur dioxide
- (c) Nitrogen oxide
- (d) All of the above

Correct Answer: (a) Chloro fluoro carbon (CFCs)

Q2. Which of the following acids is present in acid rain?

- (a) Carbonic acid
- (b) Sulphuric acid
- (c) Nitric acid
- (d) All of the above

Correct Answer: (d) All of the above

Q3. Which of the following conditions show the polluted environment?

- (a) The pH of rainwater is 5.6
- (b) Biochemical oxygen demand is 10 ppm
- (c) Amount of carbon dioxide in the atmosphere is 0.03%
- (d) All of the above

Correct Answer: (d) All of the above

Q4. Which of the following gases causes the greenhouse effect?

- (a) Methane
- (b) Sulphur dioxide
- (c) Both (a) and (b)
- (d) None of the above

Correct Answer: (c) Both (a) and (b)

Q5. Water samples with biological oxygen demand values of 4 ppm and 18 ppm, respectively are _____ and _____.

- (a) Clean and highly polluted
- (b) Highly polluted and clean
- (c) Highly polluted and highly polluted
- (d) Clean and clean

Correct Answer: (a) Clean and highly polluted

Q6. Which of the following molecules has a minimum role in the formation of photochemical smog?

- (a) Nitrogen

- (b) Ozone
- (c) Nitrogen oxide
- (d) All of the above

Correct Answer: (a) Nitrogen

Q7. Which of the following is present in the maximum amount in acid rain?

- (a) Nitric acid
- (b) Sulphuric acid
- (c) Carbonic acid
- (d) None of the above

Correct Answer: (b) Sulphuric acid

Q8. Green fuel is obtained from _____.

- (a) Biowaste
- (b) Metal waste
- (c) Electronic waste
- (d) All of the above

Correct Answer: (a) Biowaste

Q9. What is environmental chemistry?

Answer: Environmental chemistry is defined as the branch of science that deals with the study of the origin, transport, reactions, effects and fates of chemical species in the environment. It deals with social, economic, biological, physical and chemical interrelations with our surroundings.

Q10. Compare the toxicity of carbon monoxide and carbon dioxide.

Answer: Carbon monoxide is more toxic than carbon dioxide. It binds to the blood's haemoglobin more readily (about 200 times) than oxygen to form carboxyhaemoglobin.



The presence of carbon monoxide reduces the amount of haemoglobin available in the blood to transport oxygen to the body cells. The harmful effects of inhaling increasing amounts of carbon monoxide include a reduction in awareness of judgement, dizziness, weak eyesight, headache, nervousness and cardiovascular disorders. At higher concentrations of carbon monoxide, suffocation, loss of consciousness or even death may occur. However, carbon dioxide does not combine with haemoglobin and is a less harmful pollutant. Carbon dioxide is the main contributor towards the greenhouse effect and global warming.

Q11. What are the causes of pneumoconiosis?

Answer: Pneumoconiosis is a disease of the lung which is caused due to inhalation of small particles (mist, smoke, fumes and dust). These particles irritate the lungs, and exposure to such particles for long periods of time causes scarring or fibrosis of the lung lining.

Q12. What is BOD in water systems?

Answer: BOD is the abbreviation of biological oxygen demand. It measures the pollution caused by biodegradable organic material in a water body. The clean water would have a BOD value of less than five ppm, whereas higher values of BOD indicate polluted water.

Q13. Why do fish not grow well in warm water?

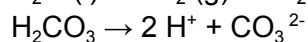
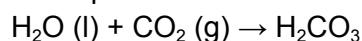
Answer: The amount of dissolved oxygen in warm water is less than in cold water, so fish do not grow as well in warm water as in cold water.

Q14. What do you understand by green chemistry?

Answer: Green chemistry is the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances. It applies across the life cycle of a chemical product, including its design, manufacture, use, and ultimate disposal.

Q15. What is the pH of rainwater?

Answer: Normally, rainwater has a pH of about 5.6 due to the dissolution of carbon dioxide in the atmosphere into it.



Q16. How is ozone formed?

Answer: Ozone is formed at the higher levels of the atmosphere and is a product of ultraviolet radiation acting on oxygen molecules. The higher energy ultraviolet radiations split some molecular oxygen into free oxygen atoms. These atoms then combine with molecular oxygen to form ozone.

Q17. What is sludge?

Answer: Sludge is defined as thick, soft mud or a highly viscous mixture of liquid and solid components obtained as a by-product during industrial production or refining processes.

Q18. What is the importance of the ozone layer in the atmosphere?

Answer: Ozone is found in the upper part of the atmosphere, known as the stratosphere. It acts as a shield, absorbing ultraviolet radiation from the sun. Ultraviolet rays are hazardous to live organisms since their DNA and proteins preferentially absorb ultraviolet rays, and their high energy breaks the chemical bonds within these molecules. It can also lead to several kinds of problems, such as cancer.

Q19. What are the harmful effects of ozone layer depletion?

Answer: The harmful effects of ozone layer depletion are mentioned below.

1. More ultraviolet radiation will enter the earth's atmosphere due to ozone layer depletion. It will cause skin ageing, cataracts, skin cancer, and sunburn.
2. They also cause the death of phytoplanktons, which decreases fish productivity.
3. Excess exposure may even cause mutation in the genetic material of organisms.

Q20. Differentiate between classical smog and photochemical smog.

Answer: We can differentiate between classical and photochemical smog in the following ways.

Sl. No.	Classical Smog	Photochemical Smog
1.	It is formed due to the buildup of sulphur oxides and particulate matter from fuel combustion.	It is formed due to the photochemical reaction of sunlight on the nitrogen oxides and hydrocarbons produced by automobiles and factories.
2.	It involves smoke and fog.	It does not involve any smoke or fog.
3.	It occurs in a cool, humid climate (in winter).	It occurs in warm, dry and sunny climates (in summer).
4.	This type of smog was first observed in London in 1952.	This type of smog was first observed in Los Angeles in 1950.
5.	It has a high concentration of sulphur dioxide and, therefore, is reducing in character.	It has a high concentration of oxidising agents and, therefore, is oxidising in character.
6.	It causes bronchitis and irritation, i.e. problems in the lungs.	It causes irritation in the eyes.