

Ozone Layer Chemistry Questions with Solutions

Q1. The ozone layer is found in the

- (a) Stratosphere
- (b) Mesosphere
- (c) Troposphere
- (d) None of the above

Answer: (a), The ozone layer is found in the stratosphere of the atmosphere.

Q2. Ozone holes are predominantly found in the

- (a) Tropic of Cancer
- (b) Tropic of Capricorn
- (c) Equator
- (d) Poles
- (e) None of the above

Answer: (d), Ozone holes are predominantly found in the poles.

Q3. Which of the following artificial material is responsible for ozone layer depletion?

- (a) Chlorofluorocarbon (CFC)
- (b) Formalin
- (c) Polyvinylchloride (PVC)
- (d) BiPolymers

Answer: (a), Chlorofluorocarbon (CFC) is responsible for ozone layer depletion.

Q4. The CFC used in refrigerators is

- (a) Freon
- (b) Methane
- (c) Naphthalene
- (d) None of the above

Answer: (a), The CFC used in refrigerators is freon.

Q5. What is the primary risk associated with extreme UV rays through the atmosphere because of ozone layer depletion

- (a) Skin Cancer
- (b) Brain Hemerage
- (c) Liver Damage
- (d) None of the above

Answer: (a), The primary risk associated with extreme UV rays through the atmosphere because of ozone layer depletion is skin cancer.

Q6. When was the first ozone hole discovered?

- (a) 1950
- (b) 1960
- (c) 1970
- (d) 1980

Answer: ©, The first ozone hole was discovered in 1970 in the stratosphere over Antarctica.

Q7. Montreal protocol is related to the

- (a) Global warming
- (b) Ozone layer depletion
- (c) Pollution
- (d) None of the above

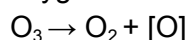
Answer: (b), Montreal protocol is related to ozone layer depletion.

Q8. What is the ozone layer?

Answer: The ozone layer is the region of Earth's atmosphere responsible for absorbing sun UV rays. It is about 15 to 35 kilometres above the Earth's surface.

Q9. How does the ozone layer block the sun's ultraviolet radiation?

Answer: The ozone layer blocks the sun's ultraviolet radiation by absorbing the sun's ultraviolet rays. After soaking in the ultraviolet rays, the ozone molecule breaks into dioxygen molecule and nascent oxygen.



Later oxygen molecules and nascent oxygen combine to form ozone.

Q10. Is ozone a greenhouse gas?

Answer: Yes, ozone is a greenhouse gas. It is both beneficial and destructive for us. The usefulness of ozone depends on where it is found in the earth's atmosphere.

Q11. What is responsible for the depletion of the ozone layer?

Answer: Several toxic chemicals are responsible for ozone layer depletion. They are chlorofluorocarbon (CFC), hydrochlorofluorocarbons (HCFC), carbon tetrachloride (CCl_4), methyl bromide, methyl chloroform and halons.

Q12. Why is the ozone layer important?

Answer: Ozone acts as a barrier between the earth and the harmful ultraviolet rays. If the ozone layer were absent in the stratosphere, we would be more prone to skin cancer, cataracts, and weak immune systems.

Q13. What is the difference between ozone layer depletion and global warming?

Answer: Ozone layer depletion refers to the thinning of the ozone layer in the stratosphere of the earth's atmosphere. In contrast, global warming refers to the rise in the average temperature of the earth's atmosphere. However, ozone layer depletion does contribute to global warming.

Q14. Match the following.

Column 1	Column 2
Ozone layer depletion	High Concentration of DDT
Green House Effect	Water Hyacinth
Three Mile Island (USA)	Radioactive waste
Terror of Bengal	Carbon dioxide and Methane
Calcium metabolism in birds	Chlorofluorocarbon

Answer:

Column 1	Column 2
Ozone layer depletion	Chlorofluorocarbon
Green House Effect	Carbon dioxide and Methane
Three Mile Island (USA)	Radioactive waste
Terror of Bengal	Water Hyacinth
Calcium metabolism in birds	High Concentration of DDT

Q15. Differentiate between ozone layer depletion and global warming.

Answer:

S. No.	Ozone Layer Depletion	Global Warming
1.	Ozone layer depletion refers to thinning of the earth's ozone layer.	Global warming refers to the rise in the average temperature of the earth's atmosphere.
2.	It decreases the thickness of the ozone layer. Thus, the number of ultraviolet rays entering the earth's	It increases the earth's average temperature due to increased levels of carbon dioxide, methane, and other

	surface increases.	greenhouse gases.
3.	It can increase skin cancers, malignant melanoma in human skin and high vitamin D production.	It can cause increased sea level, regional changes in precipitation, climate change and expansion of deserts.

Practise Questions on Ozone Layer

Q1. How does the ozone layer affect the environment?

Answer: The ozone layer acts as a barrier between the earth and the harmful ultraviolet rays. If the ozone layer were absent in the stratosphere, a large number of ultraviolet rays would enter the atmosphere leading to temperature rise. Moreover, it would affect human and animal health. It can lead to skin cancer, cataracts, and weak immune systems.

Q2. How is ozone harmful?

Answer: Inhalation of ozone can damage the lungs. Less amount of ozone can lead to chest pain, coughing, shortness of breath and, throat irritation. It also affects respiratory diseases like asthma and affects the body's ability to fight respiratory infections.

Q3. What is global warming?

Answer: Global warming refers to the rise in the average temperature of the earth's atmosphere. It can increase sea level, regional changes in precipitation, climate change and expansion of deserts.

Q4. How can we protect the ozone layer?

Answer: We can protect the ozone layer by

- Reducing the use of ozone-depleting substances.
- Minimising the use of Vehicles.
- Using eco-friendly cleaning products
- Avoiding Nitrous Oxide

Q5. Name a few ozone-depleting substances (ODS).

Answer: Few ozone-depleting substances are mentioned below.

- Chlorofluorocarbon (CFC)
- Hydrochlorofluorocarbons (HCFC)
- Carbon tetrachloride (CCl₄)
- Methyl bromide (CH₃Br)
- Methyl chloroform

- Halons

