

Oxygen Cycle Chemistry Questions with Solutions

Q1. The atmosphere contains _____ of oxygen.

- (a) 21 per cent
- (b) 13 per cent
- (c) 75 per cent
- (d) None of the above

Answer: (a) The atmosphere contains 21 per cent of oxygen.

Q2. Oxygen from the atmosphere is used up in processes, namely

- (a) Combustion
- (b) Respiration
- (c) In the form of oxides of nitrogen
- (d) All of the above

Answer: (d) Oxygen from the atmosphere is used up in combustion, respiration and the form of oxides of nitrogen.

Q3. The two forms of oxygen formed in the atmosphere are

- (a) Water and ozone
- (b) Ozone and oxygen
- (c) Water and oxygen
- (d) All of the above

Answer: (b) The two forms of oxygen formed in the atmosphere are ozone and oxygen.

Q4. In the oxygen cycle, the movement of oxygen takes place within

- (a) Atmosphere
- (b) Biosphere
- (c) Lithosphere
- (d) All of the above

Answer: (d) In the oxygen cycle, the movement of oxygen takes place within the atmosphere, biosphere and lithosphere.

Q5. The oxygen cycle is an example of the _____ cycle.

- (a) Chemical
- (b) Photosynthesis
- (c) Biogeochemical
- (d) None of the above

Answer: (c) The oxygen cycle is an example of the biogeochemical cycle.

Q6. What is the oxygen cycle?

Answer: The oxygen cycle is the movement of oxygen from the atmosphere through a series of intricate processes. It helps maintain the oxygen level of the atmosphere.

Q7. What are the different stages of the oxygen cycle?

Answer: The oxygen cycle is the movement of oxygen from the atmosphere through a series of intricate processes. It takes place in three stages.

Stage 1: In the first stage, during photosynthesis, the green plants release oxygen into the atmosphere.

Step 2: In the second stage, all the aerobic organisms use the oxygen released by the green plants.

Step 3: In the third stage, the aerobic organisms release the carbon dioxide back into the air, which the plants in the first stage use during photosynthesis.

Thus, oxygen is balanced in the atmosphere.

Q8. Name any four processes in which atmospheric oxygen is used?

Answer: The processes in which atmospheric oxygen is used are mentioned below.

1. Breathing
2. Decomposition
3. Combustion
4. Rusting

Q9. Answer the following questions.

(a) Name the process which returns oxygen to the atmosphere.

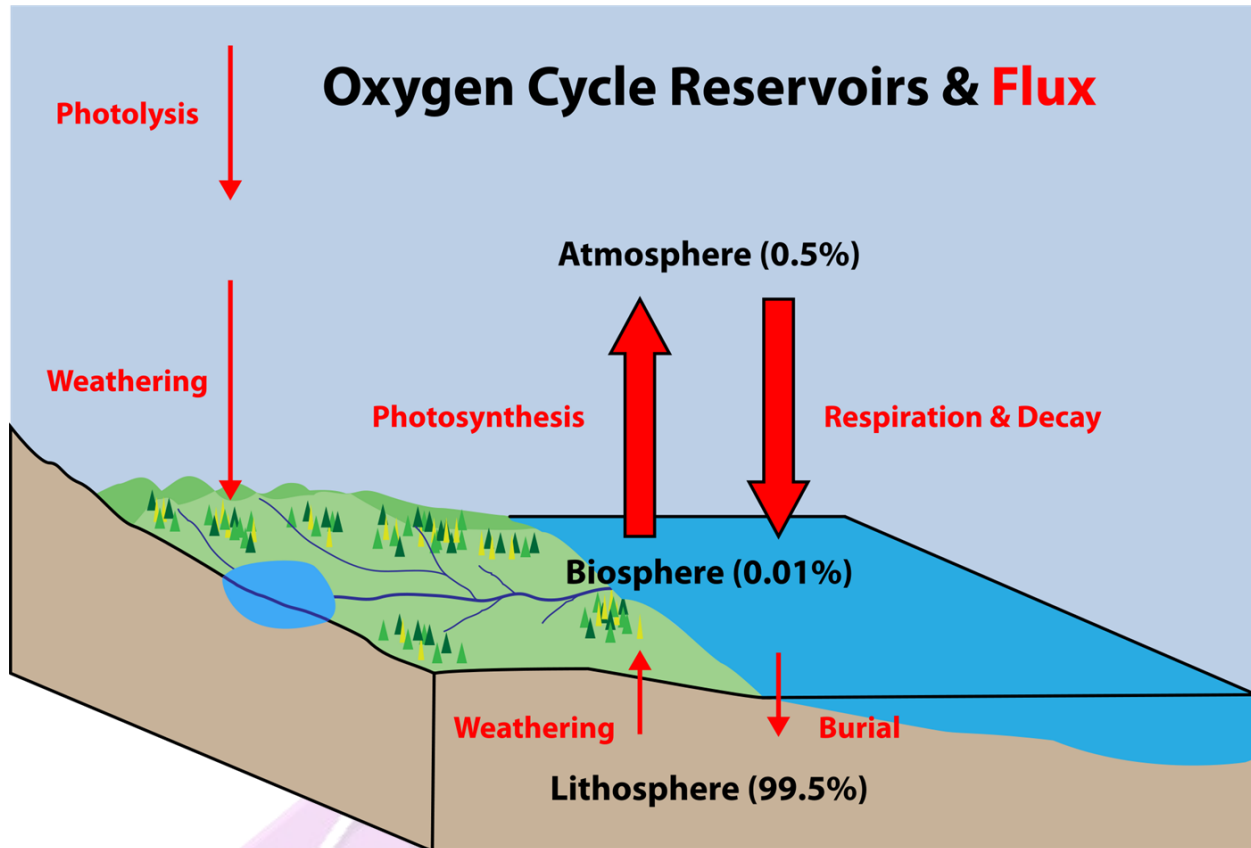
(b) What are the various forms of oxygen in the earth's crust?

Answer: (a) Photosynthesis returns oxygen to the atmosphere.

(b) Organic molecules and water are the forms of oxygen in the earth's crust.

Q10. Draw a diagram to show the oxygen cycle in nature.

Answer:



Q11. What is a biogeochemical cycle?

Answer: Biogeochemical cycle refers to the movement of matter from the atmosphere through a series of intricate processes.

Q12. What are the primary reservoirs of oxygen?

Answer: The primary reservoirs of oxygen are mentioned below.

1. Atmosphere
2. Hydrosphere
3. Biosphere
4. Lithosphere

Q13. What is photosynthesis?

Answer: Photosynthesis is the process in which plants use water, sunlight and carbon dioxide to form oxygen and energy in the form of sugar. It helps maintain the oxygen level of the atmosphere.

Q14. Match the following.

Column A	Column B
Nitrogen	97 per cent of the water on earth
Oxygen	3 per cent of the water on earth
Carbon dioxide	0.04 per cent in air
Freshwater	21 per cent in air
Salt Water	78 per cent in air

Answer:

Column A	Column B
Nitrogen	78 per cent in air
Oxygen	21 per cent in air
Carbon dioxide	0.04 per cent in air
Freshwater	3 per cent of the water on earth
Salt Water	97 per cent of the water on earth

Q15. Name two processes responsible for producing oxygen in nature.

Answer: The two methods responsible for producing oxygen in nature are mentioned below.

1. Photosynthesis
2. Photodissociation

Practise Questions on Oxygen Cycle

Q1. Explain the significance of the oxygen cycle.

Answer: The Oxygen Cycle is an essential biogeochemical cycle helpful in maintaining the concentration and level of Oxygen in the atmosphere. The Oxygen Cycle is one of the main reasons for the existence of life on earth. Without Oxygen, the biosphere would not exist. However, Anaerobes can live without the presence of Oxygen. Few anaerobes called obligate anaerobes might even die due to the presence of Oxygen.

The critical operations of Oxygen include breathing, combustion, rusting, and decomposition.

Q2. What is photodissociation?

Answer: Photodissociation is the process by which oxygen is formed. It is a chemical reaction in which photons break down molecules of a chemical compound. In it, one or more photons interact with one target molecule.

Q3. What would happen if all the oxygen present in the environment is converted to ozone?

Answer: If all the oxygen in the environment is converted to ozone, then no life would exist on earth.

Q4. What is the ozone layer? What is responsible for the depletion of 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.

Several toxic chemicals are responsible for ozone layer depletion. They are chlorofluorocarbon (CFC), hydrochlorofluorocarbons (HCFC), carbon tetrachloride (CCl_4), methyl bromide (CH_3Br), methyl chloroform and halons.

Q5. What is the role of respiration in the oxygen cycle?

Answer: In the oxygen cycle, the purpose of breathing is to release carbon dioxide, which the plants then take up to carry out photosynthesis, which releases oxygen that human beings use in breathing to create carbon dioxide for plants again, and this cycle continues.