

UNIT - 4 AIR

Class: VI

Subject: Science

I. Choose the appropriate answer

- _____ is the percentage of nitrogen in air.
a. **78%** b. 21% c. 0.03% d. 1%
- Gas exchange takes place in plants using _____.
a. **Stomata** b. Chlorophyll c. Leaves d. Flowers
- The constituent of air that supports combustion is _____.
a. Nitrogen b. carbon-di-oxide c. **Oxygen** d. water vapour
- Nitrogen is used in the food packaging industry because it _____.
a. provides colour to the food b. provides oxygen to the food
c. adds proteins and minerals to the food d. **keeps the food fresh**
- _____ and _____ are the two gases, which when taken together, make up about 99 percentage of air.
I. Nitrogen II. carbon-di-oxide III. Noble gases IV. Oxygen
a. I and II b. I and III c. II and IV d. **I and IV**

II. Fill in the blanks

- Oxygen** is the active component of air.
- The gas given out during photosynthesis is **Oxygen**.
- Oxygen** gas is given to the patient saving breathing problems.
- Dust particles** can be seen moving in a beam of sunlight in a dark room.
- Carbon di Oxide** gas turns lime water milky.

III. True or False. If False, give the correct statement

- Inhaled air contains a large amount of carbon-di-oxide. **False**
- Planting trees help in decreasing global warming. **True**
- The composition of air is always exactly the same. **False**
- Whales come up to the water surface to breathe in oxygen. **True**
- The balance of oxygen in atmosphere is maintained through photosynthesis in animals and respiration in plants. **False**

IV. Match the following

- Moving Air - Wind
- Layer in which we live - Troposphere
- Stratosphere m - Ozone layer
- Oxygen - Combustion

5. Carbon di Oxide - Photosynthesis

V. Arrange the following statements in correct sequence

1. Plants manufacture food by a process called photosynthesis. 3
2. Plants require energy for their growth. 1
3. Plants take in oxygen and release carbon-di-oxide just as animals. 6
4. Plants take carbon-di-oxide from the atmosphere, use chlorophyll in the presence of sunlight and prepare food. 2
5. Such oxygen is available to animals and human beings for breathing. 5
6. During this process, oxygen is released by plants. 4

VI. Analogy

1. Photosynthesis : **Carbon-di-oxide** (CO_2) :: Respiration : Oxygen
2. 78% of air : Does not support combustion :: **21% air** : Supports combustion.

VII. Observe the given figure carefully and answer the questions.

1. What will happen if we remove plants from the aquarium?

If we remove the plants from the aquarium, oxygen percentage will be decreased. So fishes would die.

2. What will happen if we remove the fish from the aquarium and keep it (with green plants) in a dark place?

If the aquarium is kept in the dark place, the green plants will not prepare their food due to lack of sunlight and carbon -di-oxide. So the plants get spoiled.

VIII. Give very short Answer

1. What is atmosphere? Name the five layers of atmosphere.

Our earth is surrounded by a huge envelope of air called the atmosphere.

The atmosphere is made of five different layers - the Troposphere, the Stratosphere, the Mesosphere, the Ionosphere and the Exosphere.

2. How do the roots of land plants get oxygen for breathing?

The roots can absorb oxygen from the small air spaces in soil.

3. What should be done if the clothes of a person catch fire accidentally? Why?

- Cover the person in a rug or blanket and Roll him on the floor.

- This will cut off the air and put out the flames.
- Suitable fire extinguisher can also be chosen.

4. What will happen if you breathe through mouth?

Anyone can develop a habit of breathing through their mouth, but certain conditions increase your risk. These include:-

Chronic allergies:

- Hay fever
- Chronic or recurring Sinus infections
- Asthma
- Chronic Stress and Anxiety.

IX. Give short answer

1. Biscuits kept open on a plate during monsoon days lose its' crispness.

Why?

Air also contains more water vapour in rainy season (monsoon days). So, Biscuits kept open on a plate during monsoon days loses its crispness.

2. Why do traffic assistants wear a mask on duty?

Traffic assistants are continually exposed to smoke emitted out from the vehicles. Inhaling the pollutants in the smoke may cause breathing and lung problems. So they wear a mask on duty.

X. Answer in detail

1. How do plants and animals maintain the balance of oxygen and carbon-dioxide in air?

Respiration in plants:

During respiration, plants take in oxygen and release carbon-di-oxide, just as animal also do. Gaseous exchange with air in atmosphere takes place in plants with stomata.

Photosynthesis:

During photosynthesis, carbon-di-oxide from the air and water from the soil react in the presence of sunlight to produce food. Plants release oxygen during photosynthesis which is much more than the oxygen consumed by the plants during respiration.

Respiration in animals:

When we breath in air, the oxygen present in the air reacts chemically

with digested food within the body to produce carbon-di-oxide gas. The inhaled air contains more oxygen while the exhaled air contains more carbon-di-oxide.

So plants sent out more oxygen during the photosynthesis. Animals sent out more carbon-di-oxide during respiration. Plants take carbon-di-oxide for photosynthesis. Animals take oxygen during respiration. So plants and animals maintain the balance of oxygen and carbon-di-oxide in air.

2. Why is atmosphere essential for life on earth?

- The atmosphere is essential for life because it maintains an appropriate climate for the maintenance of life by carrying out the following activities:
- The atmosphere keeps the average temperature of the Earth fairly constant during the day time.
- It prevents a sudden increase in temperature during the day time.
- It also slows down the escape of heat from the surface of the Earth into outer space during the night time.

XI. Question based on Higher Order Thinking Skills

1. Can you guess why fire extinguishers throw a stream of carbon-di-oxide while putting - off fire?

- The reasons behind fire extinguishers throw a stream of CO_2 , while putting-off fire:-
- CO_2 is a colourless and in normal concentrations, odourless gas. It doesn't react with burning materials, so it doesn't create any toxic or other by products while putting-off fire.
- Carbon dioxide doesn't conduct electricity, making it an ideal fire suppressant for use in the places where a large amount of electricity may be present.
- CO_2 acts on fires in two ways: The release of the gas under pressure has a cooling effect, as can be seen by the resulting mist cloud and ice particles; the gas also displaces the oxygen that's necessary to maintain combustion.