

6. Name the processes which maintain the balance between oxygen and carbon dioxide in the air, How it is done?

Ans → ^{photosynthesis} Respiration and ~~photosynthesis~~ are the processes which maintain the balance between oxygen and carbon dioxide in the air.

Respiration: Respiration is a chemical process that takes place in all living beings. In this process, oxygen present in the inhaled air reacts with the digested food material in the body. This results in the release of energy, carbon dioxide and water.

Photosynthesis: Photosynthesis is a process through which green plants prepare their food in presence of sunlight.

with the help of carbon dioxide and water. The food is prepared in the form of glucose (a carbohydrate) with the release of oxygen gas.

The oxygen released in the process of photosynthesis is used by ~~living~~ all living things for respiration. The carbon dioxide released during the process of respiration is used by all plants for photosynthesis.

In this way, respiration and photosynthesis ~~balance~~ maintain the balance between oxygen and carbon dioxide in the air.

7. State two similarities and two differences between respiration and ~~combustion~~ burning.

Ans → Similarities:

Respiration

Burning

① Oxygen is needed with to combine with C and H_2 of food.

① Oxygen is needed to combine with carbon and hydrogen compounds.

② CO_2 and H_2O are formed with the release of energy.

② CO_2 and H_2O are formed with the release of energy.

Differences:

Respiration

Burning

① It occurs at body temperature.

① It occurs at higher temperature

② It is a slow process.

② It is a fast process.



8. Define rusting. What are the two necessary conditions for rusting of iron? Give the chemical name of rust.

Ans Rusting: Slow conversion of iron into its hydrated oxide in the presence of moisture and air is called rusting.

Conditions for rusting:

① Presence of moisture (water).

② Presence of oxygen (air).

Chemical name of rust is hydrated iron oxide
 $(2Fe_2O_3 \cdot nH_2O)$

9. How is air useful to:

a) Water boats

Ans → Air helps movement of water bodies.

b) Agriculture

Ans → Air speeds up drying up of agricultural products like grains, pulses, fruits etc. Air helps in pollination of flowers and dispersal of seeds. Air also helps in the process of winnowing which is used to separate the rice grain from its husk.

c) Windmills

Ans → Windmills work where there is sufficient movement of air.

d) Scooters and Cars

Ans → Air filled tyres of cars move smoothly on road as there is less friction.

10. State the full form of LPG and CNG. How are the two different in their composition.

Ans → LPG (Liquified Petroleum Gas):

It is obtained from crude petroleum oil. It mainly contains gaseous compounds known as isobutane and butane. Popularly it is known as cooking gas. It is the best fuel for domestic purposes and in laboratories. It is available in cylinders. It is also supplied through pipes in big cities.

CNG (Compress Natural Gas):

It is produced along with crude oil. It mainly contains methane gas. It has become a popular fuel for vehicles like three wheeler scooters, cars and buses. It is a cheap fuel as well as pollution free. It is used as a substitute for petrol.

Difference in composition:-

LPG

① LPG is obtained from crude petroleum oil. It mainly contains gaseous compounds known as isobutane and butane.

CNG

① CNG is produced along with crude oil. It mainly contains methane gas.

11.a) Why is nitrogen important to all living things?

Ans → Nitrogen constitutes 78% of air by volume. It is of vital importance to plants, animals and human beings as it is needed to prepare the vital nutrient 'protein' to every living being which is necessary for their growth.

b) What is nitrogen fixation?

Ans → Nitrogen cannot be absorbed directly by plants. It is first fixed up in the soil as nitrites and nitrates and then absorbed by the plants in soluble forms. This phenomenon is called nitrogen fixation.