

Exercise - II

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

Ans. Respiration and Combustion are the processes which maintain the balance between oxygen and CO_2 in the air.

i) 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.

ii) Combustion: - Burning or Combustion is a process in which a substance reacts chemically with oxygen and gets oxidised, with the release of energy in the form of heat and light. It is a fast process. During the process of burning, along with energy, carbon dioxide and water vapour are also produced.

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

Ans. Similarities:

Burning	Respiration
(i) Oxygen is needed to combine with carbon & hydrogen in compound.	(i) Oxygen is needed to combine with C and H_2 of food.
(ii) CO_2 and H_2O are formed with release of energy.	(ii) CO_2 & H_2O are formed with release of energy.

Differences:

Burning	Respiration
(i) It occurs at higher temperature	(i) It occurs at body temperature.
(ii) It is fast process	(ii) It is a slow process
(iii) A natural and continuous process.	(iii) An artificial and discontinuous 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:

(i) Presence of moisture (water).

(ii) Presence of oxygen (air).

Chemical Name of rust is hydrated iron oxide $[Fe_2O_x \cdot xH_2O]$

9. How is air useful to:

(a) Water Boats;

Ans- Air helps movement of water boats

(b) Agriculture

Ans- Air speeds up drying up of agriculture products like grains, pulses, fruits etc. Air helps in pollination of flowers and dispersal of seeds.

(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 (Liquefied Petroleum Gas): It is obtained from crude petroleum oil. It mainly contains gaseous compounds known as isobutane and butane. 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 (Compressed 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 of petrol.

- Difference in Composition -

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

- CNG produced along crude oil. It mainly contains methane gas.

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

Ans- Nitrogen constitutes 78% of air by volume. It is of vital importance to the plants, animals and human beings as it is needed to prepare vital nutrient 'protein' for 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.