

Air and atmosphere

Exercise II

1) Two processes supported by oxygen present in air are:

1. Combustion

2. Respiration

2) a) Oxygen \rightarrow for respiration and breathing
no life is possible without oxygen. Oxygen is the most vital component which is responsible for two important processes,

i) Respiration and

ii) Combustion

b) Nitrogen \rightarrow present in air gets fixed up in the soil as nitrates used by plants

for their growth and for the formation of proteins an important nutrient for animals.

It is used to make fertilizers and

various nitrogenous products.

c) Carbon dioxide → Carbon dioxide is used by plants to prepare their food by photosynthesis. Dry ice (solid carbon-dioxide) is used as a refrigerant. Carbon dioxide is used to prepare fizzy drinks like soda water.

d) Water Vapour → Water vapours present in air provide moisture for both plants and animals. It also helps in predicting climatic conditions of a particular area as its amount varies from place from place to place and time to time.

3) a) Respiration \rightarrow Respiration is a chemical process that takes place in all living beings (slow in plants). In this process, oxygen present in inhaled air reacts with the digested food material in the body. This results in release of energy, carbon-dioxide and water. Sugar + Oxygen \rightarrow CO_2 + Water + Energy.

b) Photosynthesis: Process of producing food by green plants taking CO_2 from air, water from soil by roots and in presence of sunlight and chlorophyll is called photosynthesis.

c) Combustion \rightarrow Combustion also called burning "is burning of substance in

oxygen of air completely producing heat and light is called combustion."

4) The substances which burn in air to produce large amount of energy in the form of heat and light are called fuels. Fuel + Oxygen burning \rightarrow Energy (heat + light) + Carbon Dioxide + Water vapour. Ex \rightarrow

1. CNG (Compressed Natural Gas)

2. LPG (Liquified ~~Gas~~ Petroleum Gas)

5) a) Aquatic animals and plants use oxygen dissolved in water and survive.

b) Oxygen is necessary for combustion

when covered with a glass tumbler supply of oxygen stops.

c) For artificial respiration mountaineers carry oxygen cylinders as at high altitudes, the air is thin and breathing becomes difficult. Also divers carry oxygen cylinder for artificial respiration as there is less oxygen dissolved in water (less dense) and breathing becomes difficult.

d) These bubbles come from the air dissolved in water. The marine life uses air dissolved in water.