

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 balance ~~with~~<sup>between</sup> oxygen and  $\text{CO}_2$  in the air.

1) 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.

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material in the body. This happens in the  
presence of energy, carbon dioxide and  
water.

2) **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** :- 1) Oxygen is needed to combine  
with carbon and hydrogen in compound.

2)  $\text{CO}_2$  and  $\text{H}_2\text{O}$  are formed with release of  
energy.

**Respiration** :- 1) Oxygen is needed to  
combine with C and  $\text{H}_2$  of food.

2)  $\text{CO}_2$  and  $\text{H}_2\text{O}$  are formed with release  
of energy.

Differences:

Burning :-

- 1) It occurs at higher temperature.
- 2) Is ~~not~~ fast process.
- 3) A natural and continuous process.

Respiration :-

- 1) It occurs at body temperature.
- 2) Is slow process.
- 3) An artificial & 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:

- 1) Presence of moisture (water).
- 2) Presence of oxygen (air).

Chemical name of rust is hydrated iron oxide [ $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$ ].

9. How is air ~~of~~ useful to :-

- a) Water Boats :- Air helps movement of water Boats.
- b) Agriculture :- Air speeds up drying up of agricultural produce like grains, pulses fruits etc. Air helps in pollination of flowers and dispersal of seeds.
- c) Windmills :- Windmills work where there is ~~sea~~ sufficient movement of air.
- d) scooters and cars :- Air filled ~~tyres~~ tyres of cars move ~~steadily~~ smoothly on road as there is less friction.

10. State the full form of ~~DPG~~ DPG and CNG. How are the two different in their ~~com~~ composition?

Ans) DPG (disqualified Petroleum Gas) :- It is obtained from crude petroleum oil. It mainly contains gaseous compounds known as ~~isobutane~~ 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 (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.

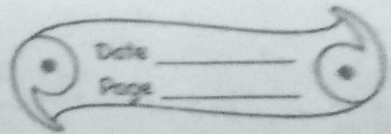
LPG is obtained from crude petroleum oil. It mainly contains gaseous compounds known as isobutane and butane. While

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

Q1: 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' which every living being needs for its growth.

b) What is nitrogen fixation?

Ans) Nitrogen cannot be absorbed directly by plants. It is ~~first~~ first 'fixed' in the soil as nitrites and nitrates and then absorbed



by the plants in soluble form. This phenomenon is called nitrogen fixation.