

Exercise 1

1) The earth is surrounded by a thick layer of air called the atmosphere that extends upto a height of 320 kilometres above the surface of the earth.

2) We can't see air because it is colourless, odourless and transparent.

3) Fast moving air is called wind.

4) Without atmosphere life would not be possible as atmosphere protects us from harmful gases. We could not live without

air present in atmosphere. In absence of the atmosphere, the earth would get so cold at night that we would not be able to survive. No CO_2 and N_2 for plants without atmosphere.

5) Air is called a mixture because;

1. Air has no formula, a mixture has no formula whereas, a compound has a formula.
2. No energy changes are involved to form air from various gases.
3. When air is formed out of its constituents no change in mass and no change in volume takes place.
4. Properties of air vary from place to place and time to time, i.e. there is more CO_2 in towns as compared to villages where more oxygen prevails as compared to towns.

6) Main components of air are:

i) Nitrogen

ii) Oxygen

Composition of air by volume:

Nitrogen : 78%

Oxygen : 21%

Carbondioxide : 0.03 - 0.04%

Inert gases : 0.9%

Water vapours : variable

Dust particles : variable

Other impurities : variable

7) a) We observed that fine water droplets get deposited on the outer wall of the glass tumbler.

b) The candle burn more brightly

because candle gets oxygen support in burning.

c) When CO_2 gas is passed through lime water it forms calcium carbonate which is white precipitate. This gives the milky white appearance to the solution.

d) We will observe randomly moving dust particles in the beam of light. This confirms the presence of dust particles in the air.

8) a) Calcium hydroxide $\rightarrow \text{Ca}(\text{OH})_2$

b) Calcium carbonate $\rightarrow \text{CaCO}_3$