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# Air and atmosphere

Air is present all around us. We cannot see air around us but we can feel its presence when the leaves rustle on branches sway.

Importance of air :-

- We need air for breathing.
- All living beings need air for breathing.
- We need air to burn something.
- Life is possible on Earth because of air.

Q1 What is atmosphere?

ans- The earth is surrounded by a thick layer of air is called the atmosphere that extends upto a height of about 320 km above the surface of the earth.

Q2 Why can't we see air?

ans- We can't see air because it is colourless, odourless and transparent gaseous matter.

Q3 What is wind?

ans- Fast moving air is called wind.

Q4 What would have happened if there would have been no atmosphere around the Earth?

ans- Without atmosphere life would not be possible as it protects us from harmful gases. We could not live there.

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  $\text{CO}_2$  and  $\text{N}_2$  for plants without atmosphere.

Q Why is air called a mixture? Give five facts in support of your answer.

Ans Air is a mixture because:

1. Air has no ~~formula~~ formula, a mixture has no formula whereas compound has a ~~formula~~ 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. There is more  $\text{CO}_2$  in towns as compared to villages where more oxygen prevails as compared to town.

5. Components of air can be separated by simple physical methods.

Q What are the main components of air? Write down the composition of these main gases present in air by volume.

Main components of air are: ~~Nitrog~~ Nitrogen and oxygen.

Composition of air by volume:

Nitrogen - 78%

Oxygen - 21%

Carbon dioxide - 0.03 - 0.04%

Inert gases - 0.9%

Water vapour - varies

Dust particles - varies

Other impurities - varies

Q7 What do you observe when :-

a) Ice cold water is filled in a glass tumbler.

Ans- We will ~~also~~ observe that fine water droplets get deposited on the outer wall of the glass tumbler.

b) A burning candle is covered with an inverted jar

Ans- ~~The candle burns~~ When a burning candle is covered with an inverted jar the candle flame extinguishes soon after. This happens because in order for the candle to burn, it requires the presence of oxygen. This supply of oxygen gets limited when the jar is placed on the flame, thus extinguishing the flame eventually.

c) Carbon dioxide gas is passed through lime water

Ans- When  $\text{CO}_2$  gas is passed through lime water it forms calcium carbonate  $\text{CaCO}_3$  which is white precipitate. This gives the milky white appearance to the solution.

d) A beam of light is allowed to enter in a closed dark room through a small hole.

Ans- We will observe <sup>randomly</sup> that moving dust particles in the beam of light. This confirms the presence of dust particles in the air.

Write the chemical name of

a) Lime water - Calcium hydroxide  $\text{Ca(OH)}_2$

b) ~~Carbon~~ The white insoluble solid formed on reaction of carbon