



INDIAN SCHOOL AL WADI AL KABIR



CLASS: VI	DEPARTMENT: SCIENCE 2022-2023	DATE: 23.08.22
WORKSHEET NO.: 5 WITH ANSWERS	TOPIC: AIR AROUND US	NOTE: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

I.VERY SHORT ANSWER (1M):

1. What is air? [Air is a mixture of several gases]
2. Which gas is needed for combustion? [Oxygen]
3. What do you understand by the term atmosphere? [The layer of air which surrounds the earth.]
4. State the composition of air. [Air comprises nitrogen, oxygen, carbon dioxide, water vapour, dust and smoke.]
5. State two properties of air. [i) It is colourless and transparent, ii) Air occupies space and has mass.]
6. What is wind? [The natural movement of air is called wind.]
7. Define humidity. [The amount of water vapour present in the air is called humidity.]
8. What is the importance of water vapour in the air? [It is important for the water cycle in nature.]
9. What happens when air comes in contact with a cool surface? [When air comes in contact with a cool surface, it condenses and drops of water appear on the cool surface.]
10. Which component of air is used by green plants to make their food? [Carbon dioxide is used by green plants to make their food.]

For question numbers 11 to 13 two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below -

- (i) Both A and R are true and R is the correct explanation of the assertion.*
- (ii) Both A and R are true but R is not the correct explanation of the assertion.*
- (iii) A is true but R is false.*
- (iv) A is false but R is true*

11. **Assertion (A):** Air is considered a mixture.

Reason (R): Air contains oxygen and nitrogen as its major constituents.

ii) Both A and R are true but R is not the correct explanation of the assertion.

12. **Assertion (A):** Mountaineers carry oxygen cylinders with them while climbing high mountains.

Reason (R): Oxygen keeps them warm at high altitudes.

iii) A is true but R is false.

13. **Assertion (A):** When we boil water, tiny air bubbles come out.

Reason (R): Water contains dissolved air.

i) Both A and R are true and R is the correct explanation of the assertion.

II. PASSAGE BASED QUESTIONS:

Read the following passage and answer the questions:

The blanket of air that surrounds the earth is called the atmosphere. Air contains oxygen and nitrogen as its major constituents of air. These gases retain their properties in the air. So, the air is called a mixture. Plants and animals help each other in the exchange of gases in the atmosphere. Plants take carbon dioxide to prepare food and release oxygen during the daytime. This oxygen is taken in by animals and carbon dioxide is released. Thus, plants and animals help in maintaining balance of oxygen and carbon dioxide. This shows the interdependence of plants and animals. Wind makes the windmill move. Windmill is used to draw water from tube wells and to run flour mills. Windmills are also used to generate electricity. Air helps the movement of gliders, parachutes, aeroplanes etc. Air also helps in the dispersal of seeds and pollen in plants. Air plays an important role in the water cycle.

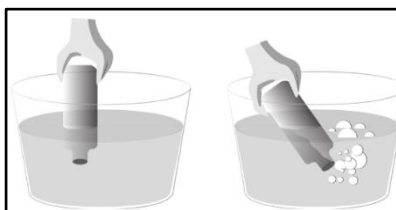
- i) Why is air considered a mixture? [Air contains oxygen and nitrogen as its major constituents of air. These gases retain their properties in the air. So, the air is called a mixture.]
- ii) Name the process in which oxygen is produced. [Photosynthesis]
- iii) How does nature help in maintaining the balance of carbon dioxide and oxygen in the atmosphere? [Plant releases oxygen which is consumed by animals in the process of respiration. Animals release carbon dioxide which is consumed by the plants for the process of photosynthesis.]
- iv) Why is the atmosphere important for the sustenance of life on the earth? [Atmosphere is important for the following reasons: It keeps the temperature of the earth fairly constant. It contains all the gases essential for sustaining life. It protects us from harmful UV radiation. It maintains the water cycle.]

III. CASE STUDY QUESTIONS:

1. Raheem experiments in a dark room, where all curtains are pulled down. He then open a small slit from the window such that a beam of sunlight could enter the room. He observes tiny shining particles moving in the beam of sunlight. What does the presence of these shining particles show?
 - (a) Air has oxygen.
 - (b) Air has nitrogen.
 - (c) Air has water vapour.

(d) Air has dust particles.

2. A student experiments to show the presence of air. He takes an empty bottle and dips in a bucket of water in two different positions, one by one, as shown.



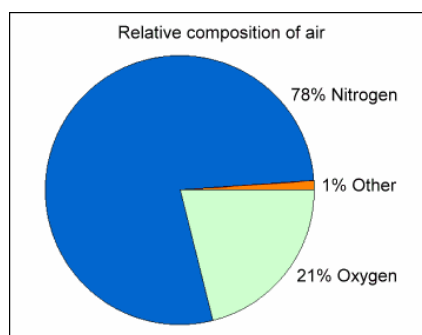
Based on the experiment, what can be concluded?

- (a) An empty bottle does not hold air.
- (b) Bottles can only be filled with water if they occupy air.
- (c) Air escapes from bottles if they are turned upside down.
- (d) Air escapes in form of bubbles when the bottle is tilted in water.

IV.a) SHORT ANSWER TYPE QUESTIONS (2 M):

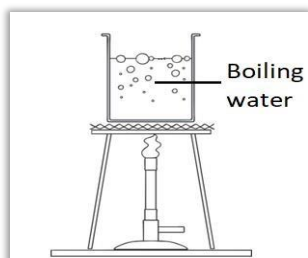
1. The composition of air is given below. Draw a pie-chart representing the various percentages of these gases.

GASES	PERCENTAGE
NITROGEN	78 %
OXYGEN	21 %
OTHER GASES	1 %

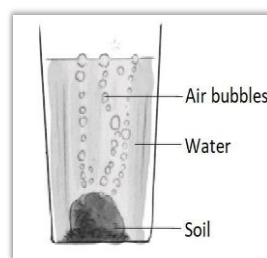


- 2. Why do you think mountaineers carry oxygen cylinders with them while climbing high mountains? [The amount of oxygen decreases at high altitudes. So, for normal breathing, mountaineers carry oxygen cylinders with them, while climbing high mountains.]
- 3. Why do you feel suffocation in a closed room, where some material is burning? [We feel suffocated in a closed room if some material is burning there because burning causes excess carbon dioxide and its accumulation causes suffocation.]
- 4. How do the organisms living in soil get the air they need for respiration? [The spaces between the soil particles are filled with air. This air is taken up by soil organisms for respiration.]

5. How do aquatic organisms take oxygen for respiration? [Aquatic organisms take the dissolved oxygen present in water for respiration.]
6. How do plant roots get air for their respiration in soil? [The plant roots breathe using the oxygen trapped in the spaces between the soil particles.]
7. Observe the figures carefully and answer the following questions:



[a]

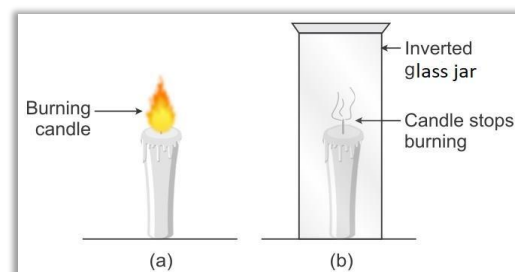


[b]

What do you conclude from this activity as shown in (i) and (ii)?

[(i) Water contains air, (ii) Soil contains air]

8. Observe the given figure carefully and answer the following question. In the given activity, the candle is burning in the case of A and not in B. Give reason. [In situation A, the candle is in direct contact with oxygen which is a supporter of burning. In situation B, the inverted jar cuts the supply of oxygen to the candle, hence it stops burning.]



9. Why do policemen regulating traffic at a crowded crossing often wear a mask? [Wearing a mask at a crowded crossing saves the policemen from harmful smoke and dust particles emitted by vehicles, which may enter their noses.]

IV.b) SHORT ANSWER TYPE QUESTIONS (3 M):

1. a) Air occupies space. Explain the given statement. [According to the statement, the matter is something that occupies space and has mass. When a balloon is filled with air, it becomes bigger in size and it can be weighed. It proves that air occupies space.]
- b) During an incident of fire, one is advised to wrap a woollen blanket over a burning object. Give a reason. [For combustion (burning) to take place, oxygen is required. When a woollen blanket is wrapped over a burning object, fire loses contact with oxygen and therefore, stops burning after some time.]

- c) Explain why tall chimneys are installed in factories? [Burning of fuel takes place in factories, it produces smoke which contains a few harmful gases and fine dust particles. The chimneys in factories take the harmful smoke and gases away from us.]
2. Why are fine hair and mucus present in our nostrils? Why should we not breathe in by mouth? [We inhale air when we breathe through our nostrils. We also know that air contains dust particles. To prevent dust particles from getting into the respiratory system, fine hair and mucus are present inside the nose.
Since our mouth does not contain the above discussed barriers of dust, so if we breathe through it, dust particles may enter our respiratory tract. That is why breathing through the mouth is not suggested.]
3. a) Why does all the oxygen in the atmosphere not get used up even though a large number of organisms are consuming it? [A large number of organisms take up oxygen for respiration and release carbon dioxide. Plants take up this carbon dioxide and release oxygen into the atmosphere. Therefore, this balance is maintained.]
b) Why should you not sleep under the trees during the night? [We should not sleep under the trees during the night because trees release carbon dioxide due to respiration and excess carbon dioxide can cause suffocation.]
4. Explain the following observations very briefly -
(a) A firki does not rotate in a closed area. [A firki does not rotate in a closed area due to lack of air movement.]
(b) The arrow of the weather cock points towards a particular direction at a particular moment. [The arrow points towards a particular direction at a particular moment to show the latest direction of the wind movement.]
(c) An empty glass in fact is not empty. [An empty glass in fact is not empty because it is filled with air.]
5. a) Why does an animal living in the soil come out of the soil for respiration in the rainy season?
[When it rains heavily, water fills up all the spaces occupied by the air in the soil. Therefore, organisms living in soil have to come out for respiration.]
b) What will happen if we keep a fish in a closed container without any aquatic plants? Give a reason for your answer. [Fish will die after some time. Aquatic plants through the process of photosynthesis could supply oxygen to the fishes.]

- c) Why does a lump of cotton wool shrink in water? [The lump of cotton has air trapped between the fibres, the trapped air escapes when cotton is soaked in water and water replaces the space which was previously occupied by the air.]

V. LONG ANSWER TYPE QUESTIONS (5M):

1. Paheli kept some water in a beaker for heating. She observed that tiny bubbles appeared before the water started to boil. She boiled the water for about 5 minutes and filled it in a bottle up to the brim and kept the bottle air tight till it cooled down to room temperature.
- (a) Why did the tiny bubbles appear?
- (b) Do you think tiny bubbles will appear on heating the water taken out from the bottle? Justify your answer. [(a) The tiny bubbles appeared before the water started to boil due to the air dissolved in water. On heating, the air dissolved in water escaped in the form of bubbles. (b) The tiny bubbles will appear on heating the water taken out from the bottle as on opening the cap, some amount of air will be trapped in it. Some amount of air will also be trapped during the transfer of water from the bottle to the utensil for heating. Since the amount of trapped air will be less in the poured water, there will be less number of bubbles appearing in the water on heating as compared to the previous one.]
2. a) List at least five activities that are possible due to the presence of air. [Respiration, burning, photosynthesis, movement of aeroplane and parachutes, generation of electricity by windmills.]
- b) State three uses of windmills. [The windmill is used to draw water from tube wells, to run flour mills and generate electricity.]

Prepared by Mrs.Sreeja.A	Checked by : HOD - Science
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