APPENDIX I

QUESTIONNAIRE FOR STUDENTS

R.D. CONVENT SCHOOL, BHOPAL

SUBJECT: SCIENCE
NAME: …….
CLASS: VII
TOTAL MARKS: 30
Note: Each question carries 1 mark

SECTION-A

1. Is respiration a continuous process?
   Yes [ ] No[ ]

2. Do plants respire?
   Yes [ ] No [ ]

3. Is the rate of breathing same for all respiring organisms?
   Yes [ ] No [ ]

4. Do insects have special organ for respiration?
   Yes [ ] No [ ]

5. Do the breathing rate of a person always remains constant?
   Yes [ ] No [ ]

6. Do plants have any specialised respiratory system?
   Yes [ ] No [ ]

7. Is Yeast used in wine and beer industries?
   Yes [ ] No [ ]

8. Is fructose a raw material for cellular respiration?
   Yes [ ] No [ ]

9. Is cell the smallest structural and functional unit of the body?
   Yes [ ] No [ ]

10. Do frogs can breathe through skin as well as lungs?
    Yes [ ] No [ ]

11. During exhalation, do the ribs move upwards?
    Yes [ ] No [ ]

12. Anaerobic respiration takes place in presence of oxygen?
    Yes [ ] No [ ]

13. End products of aerobic respiration are CO2 and H2O?

Yes [ ] No [ ]

14. During heavy exercises, we can get cramps in the legs due to the accumulation of CO2?
Yes[ ] No [ ]

15. Normal range of breathing rate per min in an average adult person at rest is 15 -18.
Yes [ ] No [ ]

16. In cockroaches, air enters the body through skin?
Yes [ ] No[ ]

17. Breathing is a process that provides O2 to the body?
Yes [ ] No [ ]

18. Do the respiratory organs of animals like cow, buffalo, dog, cat similar to humans' respiratory organs?
Yes [ ] No [ ]

19. The leaves have tiny pores called stomata
Yes [ ] No [ ]

20. The air we breathe out is a mixture of oxygen and water
Yes [ ] No [ ]

SECTION-B

21. Vocal cord is also called as .....
22. Earthworms breathe with their .....
23. The muscular floor of chest cavity is called.....
24. Respiratory organs of insects are.....
25. The accumulation of .....causes muscle cramps.
26. Which type of respiration do yeast have? .....
27. Gills are respiratory organs found in .....
28. If the food is broken down with the help of oxygen is called .....respiration.
29. The exchange of gases in plants takes place through.....
30. Aerobic respiration takes place in presence of.....

APPENDIX II
ICT INSTRUCTIONAL MATERIAL

CHAPTER - 10

RESPIRATION IN ORGANISMS

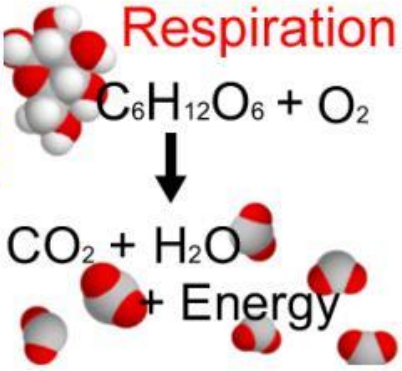
1) Why do we respire ?

We respire to get energy from food. Food contains stored energy. When we respire the food is broken down in the cells of our body with the help of oxygen and energy is released.

Respiration :- is the process by which food (glucose) is broken down in the cells of the body with the help of oxygen to release energy.

Since respiration takes place in the cells of the body, it is called cellular respiration.

Glucose + Oxygen ⟶ Carbon dioxide + Water + Energy



2) Types of respiration :-

There are two types of respiration. They are aerobic respiration and anaerobic respiration.

i) Aerobic respiration :- is respiration in which glucose is broken down in the presence of oxygen to release carbon dioxide, water and energy. It takes place in most organisms.

$$\text{Glucose} \xrightarrow{\text{Presence of oxygen}} \text{carbon dioxide} + \text{water} + \text{energy}$$

ii) Anaerobic respiration :- is respiration in which glucose is broken down in the absence of oxygen to release alcohol, carbon dioxide and energy. It takes place in yeast.

$$\text{Glucose} \xrightarrow{\text{Absence of oxygen}} \text{alcohol} + \text{carbon dioxide} + \text{energy}$$

In anaerobic respiration in our muscle cells glucose is broken down in the absence of oxygen to release lactic acid and energy.

$$\text{Glucose} \xrightarrow{\text{Absence of oxygen}} \text{lactic acid} + \text{energy}$$

3) Breathing :-

Breathing is the process by which oxygen rich air is taken in and carbon dioxide rich air is given out with the help of the respiratory organs.

The taking in of air rich in oxygen is called inhalation.

The giving out of air rich in carbon dioxide is called exhalation.

Breathing rate :-The number of times a person breathes in a minute is called the breathing rate. (Number of breaths per minute)

When a person needs more energy, he breathes faster, more oxygen is supplied to the cells, more food is broken down and more energy is released.

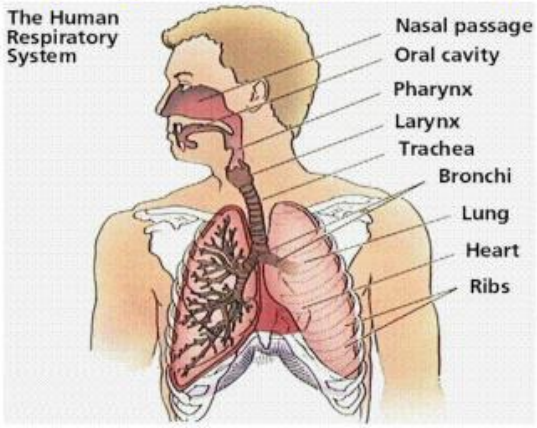


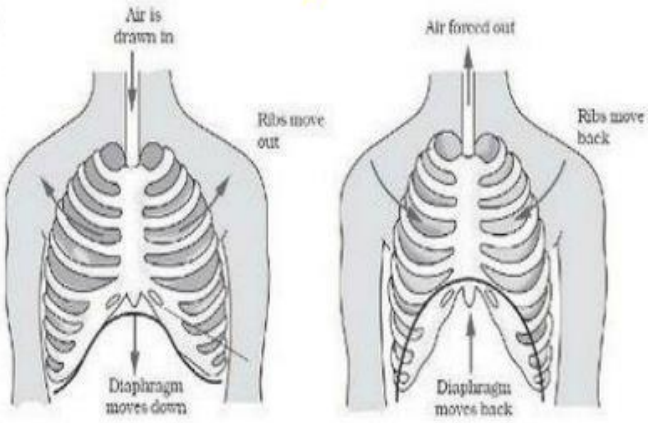

4) How do we breathe ?

The respiratory system helps in breathing. The main parts of the respiratory system are nostrils, nasal cavity, wind pipe, lungs and diaphragm.

Breathing involves the rib cage and a muscular sheet below the chest cavity called diaphragm.

During inhalation (breathing in) the chest cavity increases in size and the diaphragm moves down and air enters into the lungs. During exhalation (breathing out) the chest cavity reduces in size and the diaphragm moves up and air is pushed out of the lungs.





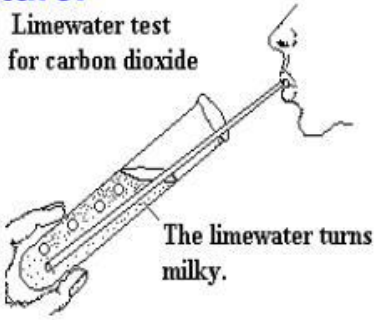
5) What do we breathe out ?

The air we breathe is a mixture of carbon dioxide and moisture :-

Activity :-

Take a test tube and pour some lime water into it. Insert a plastic straw into the lime water. Blow air through the straw into the lime water. The lime water turns milky. This shows that the air we breathe out contains carbon dioxide.

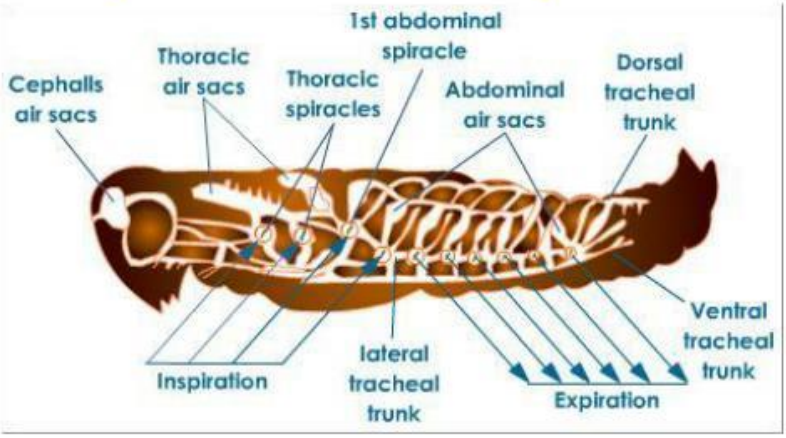
Take a mirror and blow air on the mirror. A film of moisture is formed on the mirror. This shows that the air we breathe out contains moisture.

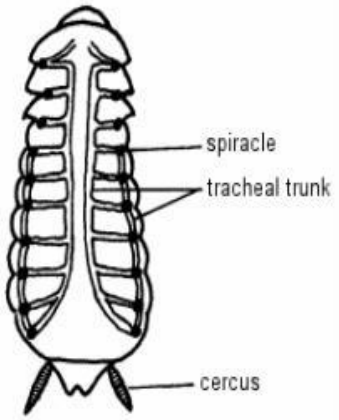


6) Breathing in other animals :-

i) Cockroach :-

Cockroach breathes through small openings in their body called spiracles. The spiracles are connected to air tubes called trachea. Oxygen rich air enters through the spiracles and passes through the trachea to all cells in the body. Carbon dioxide from the cells passes through the trachea and spiracles out of the body.





7) Respiration in plants :-

Plants also take in oxygen from air and give out carbon dioxide. This oxygen is used in the cells to break down glucose into carbon dioxide and water and release energy.

The leaves have tiny pores called stomata which helps in the exchange of gases. The root hair also help to take air from the soil.