

CLASS TEST

RESPIRATION IN ORGANISMS

F.M.- 15

Case Study: Yeast Fermentation in Bread Making

(1*4=4)

A bakery conducted an experiment with two dough samples. Both samples were made using flour, water, and sugar. However, one had **baking yeast** added, and the other didn't. After 4 hours, the dough with yeast had doubled in volume, while the other remained the same.

Questions:

1. **Why did the dough with yeast rise while the other did not?**
2. **Explain the type of respiration yeast undergoes in the dough and name the by-products.**
3. **Write the chemical equation for respiration in yeast.**
4. **Why is sugar essential in the dough for the fermentation process?**

II. Choose the correct answer:

(1*8=8)

1. **Assertion:** The diaphragm moves down during inhalation.
Reason: The downward movement of the diaphragm increases chest cavity volume, causing air to rush into the lungs.
2. **Assertion:** Aquatic animals need to breathe faster than terrestrial animals.
Reason: Water contains less oxygen compared to air, so aquatic animals must pump more water over their gills.
3. **Assertion:** Lactic acid is produced in the human body during normal breathing.
Reason: Lactic acid is the result of oxygen breaking down glucose in mitochondria.
4. **Assertion:** Carbon dioxide turns limewater milky.
Reason: CO₂ reacts with calcium hydroxide in limewater to form calcium carbonate.
5. **In which of the following organisms does respiration only occurs through the skin?**
A. Fish B. Frog C. Bird D. Earthworm
6. **Which of the following statements is true regarding respiration and breathing?**
A. Breathing is a chemical process, while respiration is physical.
B. Both are the same.
C. Breathing is the exchange of gases, while respiration is the release of energy from food.
D. Respiration does not require oxygen, but breathing does.
7. **Which of these animals has both gills and lungs at some stage of its life?**
A. Earthworm B. Frog C. Fish D. Bird
8. **Which pair is *correctly matched* with the organism's respiratory surface?**
A. Earthworm – Lungs B. Insect – Skin C. Fish – Gills D. Frog – Spiracles

III. Answer in brief:

(1*3=3)

9. Explain how the process of respiration is indirectly dependent on photosynthesis.
10. Why is breathing through the nose more efficient than breathing through the mouth in humans?
11. Overwatering is often more harmful to plants than underwatering. Explain why excess water can lead to poor plant health or even death, despite water being essential for survival.