



INDIAN SCHOOL AL WADI AL KABIR



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| CLASS: VII | DEPARTMENT: SCIENCE 2023 - 2024 | DATE: 23-11-2023 |
| TEXTBOOK Q & A | TOPIC: RESPIRATION IN ORGANISMS | NOTE: A4 FILE FORMAT |
| NAME OF THE STUDENT: | CLASS & SEC: | ROLL NO. |

1. Why does an athlete breathe faster and deeper than usual after finishing the race?

[Athletes need a lot of energy during the race, and for the release of energy, they need a lot of oxygen; hence they breathe faster than usual after finishing the race.]

2. List the similarities and differences between aerobic and anaerobic respiration.

[Similarities:

(i) In both aerobic and anaerobic respiration, food is broken down to release energy.

(ii) Both take place inside cells.

(iii) Both produce byproducts.

Differences:

| Aerobic respiration | Anaerobic respiration |
|---|--|
| Takes place in the presence of Oxygen. | Takes place in the absence of Oxygen. |
| The end products are Carbon dioxide (CO₂) and water (H₂O). | The end products are Carbon dioxide (CO₂) and alcohol. |
| Produces a large amount of energy. | The energy released is less when compared to aerobic respiration. |
| It occurs in most plants and animals. | Occurs in yeast and some bacteria. |

Q3. Why do we often sneeze when we inhale a lot of dust-laden air?

[We often sneeze when we inhale a lot of dust-laden air to expel the foreign particles. These

particles get past the hair in the nasal cavity and irritate the lining of the cavity which results in sneezing.]

4. Take three test tubes. Fill $\frac{3}{4}$ th of each with water. Label them A, B and C. Keep a snail in test tube A, a water plant in test-tube B and C, and keep the snail and plant both. Which test tube would have the highest concentration of CO₂?

[Living organisms release CO₂ during respiration whereas plants utilise CO₂ for photosynthesis. So, test tube A will have the highest concentration of CO₂ because test tube A will have a snail which expels CO₂ into the tube. In test tubes B and C, there is a plant which will utilise CO₂ for photosynthesis and hence there is less concentration of carbon dioxide.]

5. Tick the correct answer:

(a) In cockroaches, air enters the body through

- (i) lungs (ii) gills
(iii) spiracles (iv) skin

(b) During heavy exercise, we get cramps in the legs due to the accumulation of

- (i) carbon dioxide **(ii) lactic acid**
(iii) alcohol (iv) water

(c) The normal range of breathing rate per minute in an average adult person at rest is:

- (i) 9–12 **(ii) 15–18**
(iii) 21–24 (iv) 30–33

(d) During exhalation, the ribs

- (i) move outwards **(ii) move downwards**
(iii) move upwards (iv) do not move at all

6. Match Columns I and Column II

| Column I | Column II |
|---------------|---------------|
| (a) Yeast | (i) Earthworm |
| (b) Diaphragm | (ii) Gills |

| | |
|------------|---------------------|
| (c) Skin | (iii) Alcohol |
| (d) Leaves | (iv) Chest cavity |
| (e) Fish | (v) Stomata |
| (f) Frog | (vi) Lungs and skin |
| | (vii) Tracheae |

| Column I | Column II |
|---------------|---------------------|
| (a) Yeast | (iii) Alcohol |
| (b) Diaphragm | (iv) Chest cavity |
| (c) Skin | (i) Earthworm |
| (d) Leaves | (v) Stomata |
| (e) Fish | (ii) Gills |
| (f) Frog | (vi) Lungs and skin |

7. Mark 'T' if the statement is true and 'F' if it is false:

- (i) During heavy exercise the breathing rate of a person slows down. **(FALSE)**
- (ii) Plants carry out photosynthesis only during the day and respiration only at night. **(FALSE)**
- (iii) Frogs breathe through their skins as well as their lungs. **(TRUE)**
- (iv) The fishes have lungs for respiration. **(FALSE)**
- (v) The size of the chest cavity increases during inhalation. **(TRUE)**

8. Given below is a square of letters in which are hidden different words related to respiration in organisms. These words may be present in any direction — upwards, downwards, or along the diagonals. Find the words for your respiratory system. Clues about those words are given below the square.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| S | V | M | P | L | U | N | G | S |
| C | Z | G | Q | W | X | N | T | L |
| R | M | A | T | I | D | O | T | C |
| I | Y | R | X | Y | M | S | R | A |
| B | R | H | I | A | N | T | A | Y |
| S | T | P | T | B | Z | R | C | E |
| M | I | A | M | T | S | I | H | A |
| S | P | I | R | A | C | L | E | S |
| N | E | D | K | J | N | S | A | T |

- (i) The air tubes of insects – **Tracheae**.
- (ii) Skeletal structures surrounding chest cavity – **Ribs**.
- (iii) Muscular floor of chest cavity – **Diaphragm**.
- (iv) Tiny pores on the surface of leaf- **Stomata**.
- (v) Small openings on the sides of the body of an insect- **Spiracles**.
- (vi) The respiratory organs of human beings- **Lungs**.
- (vii) The openings through which we inhale- **Nostrils**.
- (viii) An anaerobic organism- **Yeast**.
- (ix) An organism with tracheal system- **Ant**.

9. The mountaineers carry oxygen with them because:

- (a) At an altitude of more than 5 km there is no air.
- (b) The amount of air available to a person is less than that available on the ground.**
- (c) The temperature of air is higher than that on the ground.
- (d) The pressure of air is higher than that on the ground.

PREPARED BY
Ms NEENA ALEX

CHECKED BY
HoD SCIENCE