

## Important Questions for CBSE Class 7 Science Chapter 6

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### Very Short Answer Questions. (1 Mark)

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1. Fill in the blanks:

1. Lactic acid is produced during \_\_\_\_\_ respiration.

Ans: Ethanol

2. During anaerobic respiration yeast produces \_\_\_\_\_.

Ans: Absence

3. Anaerobes are organisms that can survive in the \_\_\_\_\_ of air.

Ans: Oxygen-rich

4. Intake of \_\_\_\_\_ air is called inhalation.

Ans: Carbon dioxide

5. Exhaled air is rich in \_\_\_\_\_.

Ans: Accumulation

6. Muscle cramps are caused due to the \_\_\_\_\_ of lactic acid in muscle cells.

Ans: Spiracles

7. Small openings in the side of the body of the cockroach for the exchange of gases are called \_\_\_\_\_.

Ans: Tracheae

8. Network of air tubes inside the body of insects is called \_\_\_\_\_.

Ans: Tracheae

9. Earthworms and \_\_\_\_\_ breathe through their moist skin.

Ans: Frogs

10. Gills are respiratory organs found in \_\_\_\_\_.

Ans: Fishes

### Short Answer Questions (2 Marks)

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2. Differentiate between anaerobic respiration in muscle cells and that in yeast.

Ans: The difference between anaerobic respiration in muscles cells and that in yeast are as follows:

Anaerobic Respiration in Muscle Cell

Anaerobic Respiration in yeast

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Occurs in insufficient supply of air.

Occurs in insufficient or absence of air.

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Produces Lactic Acid	Produces Ethanol
It can cause muscle cramps.	It causes fermentation of sugar-rich substances to alcohol

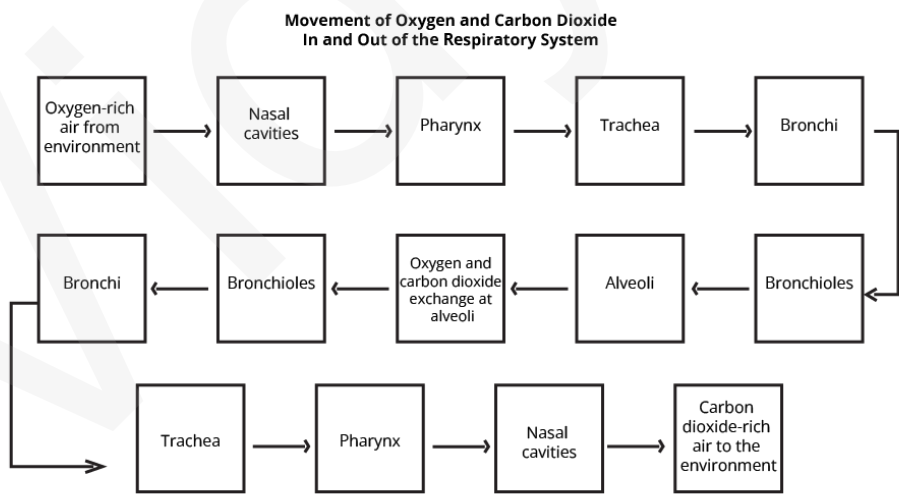
3. Differentiate between respiration in insects and earthworms.

Ans: The difference between respiration in insects and earthworms are as follows:

Respiration in Insect	Respiration in Earthworms
Air is exchanged through spiracles, which are microscopic apertures on the body's surface.	Air is exchanged through moist skin.
The tracheae are a network of tube-like structures that run throughout the body.	There is an absence of air tubes or tracheae.

4. Give the pathway of air during respiration

Ans: The pathway is depicted as below:



**Air During Respiration**

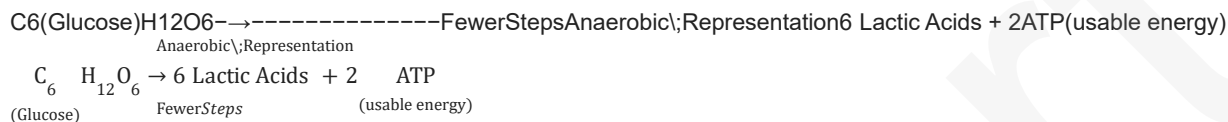
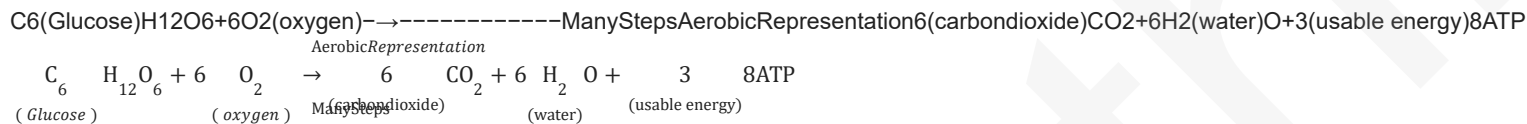
5. Give the composition of inhaled and exhaled air.

Ans: The composition of air is as follows:

1. The oxygen content of inhaled air is 21% and the carbon dioxide content is 0.04 percent.
2. Exhaled air has a 16.4 percent oxygen content and a 4.4 percent carbon dioxide content.

6. Give the reactions for aerobic and anaerobic respiration in muscle cells.

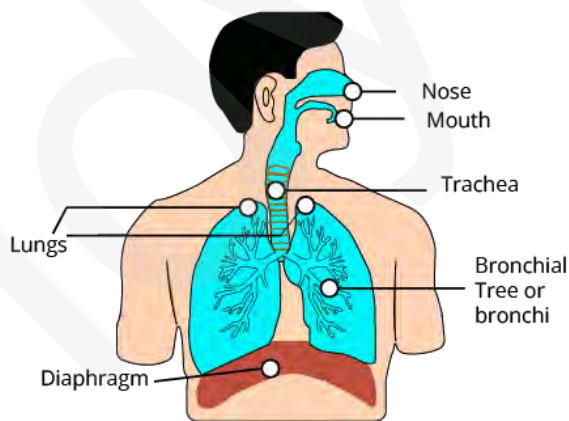
Ans:



### Long Answer Questions (5 Marks)

7. Draw and label the respiratory system in humans.

Ans:



### Respiratory System in Humans

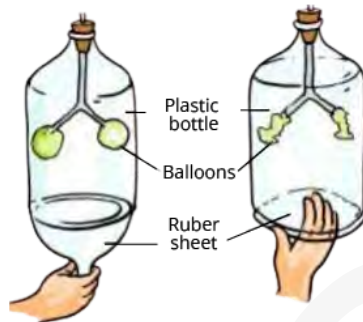
8. Give an experiment to demonstrate the role of the diaphragm in breathing.

Ans: An experiment can be put up to demonstrate the role of the diaphragm in breathing.

1. Take a wide-mouthed plastic bottle with the bottom removed.
2. A Y-shaped plastic or glass tube is inserted into the bottle's lid.

3. Two deflated balloons are attached to the bottle's forked end. The bottle's cap is securely fastened.
4. A thin rubber sheet has been wrapped tightly around the base of the bottle to hide the bottom.
5. The balloons inflate when the rubber sheet is pulled away from the base, and deflate when the rubber sheet is pressed inwards.

The diaphragm is represented by the rubber sheet in the experiment, while the lungs are represented by the balloons. The lungs expand when the diaphragm flattens out. The lungs contract when the diaphragm returns to its dome position.



### Diaphragm in Breathing

9. Explain how respiration occurs in plants.

Ans: Aerobic respiration is carried out by plants. Gases are transferred through microscopic pores found on the aerial surfaces of plants, such as leaves. These pores are called stomata. Stomata are the microscopic pores that can be seen on the lower surface of the leaves. Gas exchange happens when the stomata are open. Photosynthesis happens in plants during the day due to the availability of sunlight, and gases are exchanged for photosynthesis. Carbon dioxide is ingested, while oxygen is exhaled.

Therefore, plant respiration occurs primarily at night. At night, the plants take in oxygen from the surrounding environment and release carbon dioxide. Plants then use oxygen for respiration. Plant root cells also require energy and, as a result, oxygen is used for aerobic respiration. Root cells take in oxygen from the air that exists between soil particles. When the soil is overwatered, the air gaps are suffocated, and the root is unable to breathe. Therefore, soil overwatering should be avoided.

10. Differentiate between inhalation and exhalation

Ans: The difference between inhalation and exhalation is:

Inhalation	Exhalation
The intake of air from the environment into the body.	Air is expelled from the body and into the environment.
The oxygen content of inhaled air is high.	Carbon dioxide is abundant in exhaled air.

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The rib cage rises upwards and outwards during inhaling.

Exhalation causes the rib cage to shift inward and downward.

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The diaphragm contracts and flattens during inhaling.

The diaphragm relaxes and returns to a dome form during exhale.

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The volume of the chest cavity expands after inhaling.

When we exhale, the volume of our chest cavity shrinks.