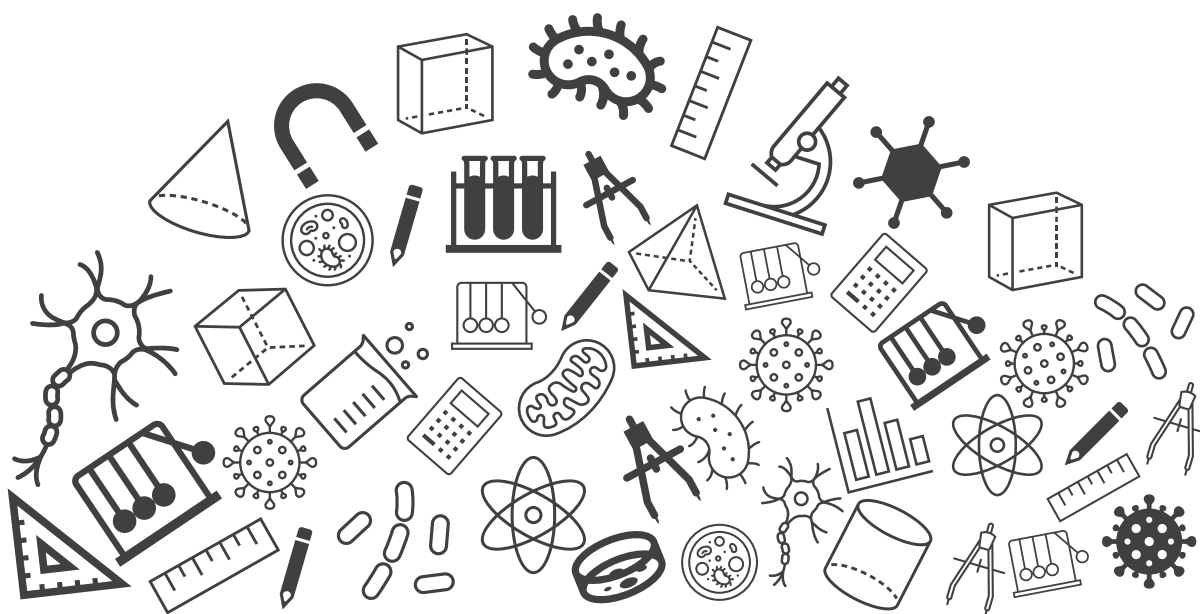




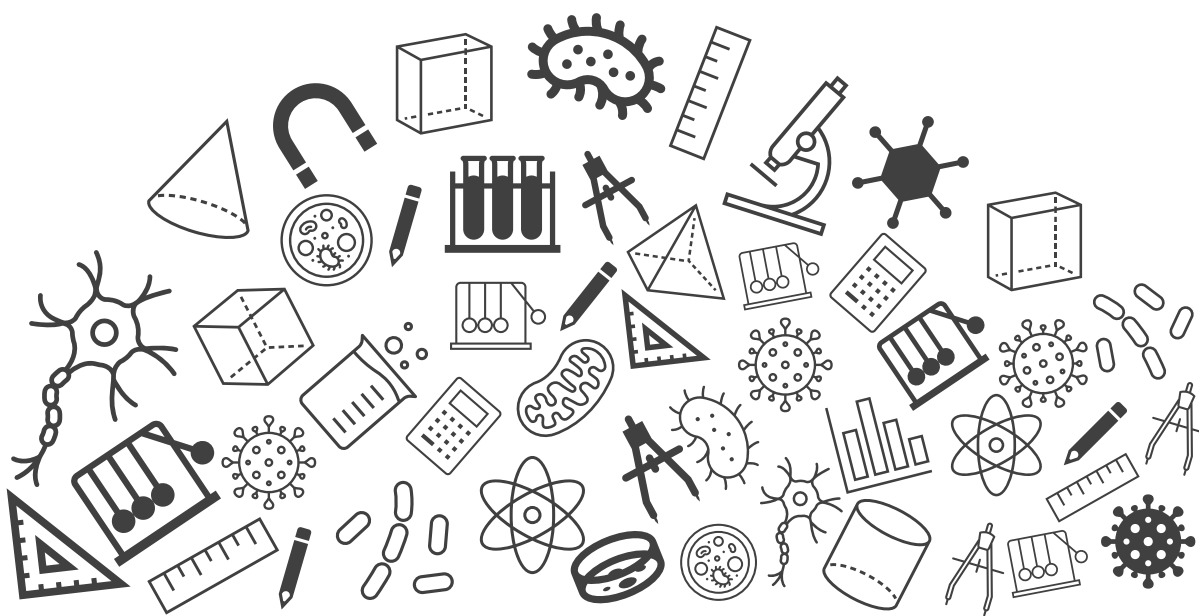
# **Grade 07 : Science**

## **Exam Important Questions**





# Respiration in Organisms



## Respiration in Organisms: Respiration in Other Organisms

Topic : Exam Important Questions

1. What is inhalation and exhalation?

[2 marks]

Solution:

- The process in which we take in oxygen rich air is called inhalation. (1 mark)
- The process in which we give out carbon dioxide rich air is called exhalation. (1 mark)

2. Write two differences between breathing and respiration.

[2 marks]

Solution:

Breathing	Respiration
Breathing involves the process of inhaling oxygen and exhaling carbon dioxide. <b>(0.5 marks)</b>	Respiration is the process that helps us to obtain energy from food. <b>(0.5 marks)</b>
Breathing takes place in respiratory tract. <b>(0.5 marks)</b>	Respiration takes place in cells. <b>(0.5 marks)</b>

3. Which gas present in the air is essential for aerobic respiration? What is the role of oxygen during respiration?

[2 marks]

Solution:

- Oxygen is the gas present in air that is essential for aerobic respiration. (1 mark)
- In a cell, the glucose is broken down into carbon dioxide and water using oxygen and the breakdown of food releases energy. This process is called cellular respiration. (1 mark)

4. Write a short note on the lime water experiment.

[3 marks]

Solution:

- The limewater experiment is used to detect the presence of carbon dioxide in the exhaled air. (1 mark)
- In this experiment, we need conical flasks, lime water, corks and bent glass tubes. (1 mark)
- To perform this experiment, exhaled air is blown into the limewater which turns it into a milky-white colour. This colour change confirms the presence of carbon dioxide in the exhaled air. (1 mark)

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

[2 marks]

[NCERT Textbook Q1]

[Anaerobic Respiration]

Solution:

- During a race, there is an increased energy requirement while running. (1 mark)
- To meet this increased energy requirement, there is an increased oxygen requirement. (0.5 marks)
- In order to fulfill high oxygen requirements breathing rate increases. (0.5 marks)

## Respiration in Organisms: Respiration in Other Organisms

6. List the similarities and differences between aerobic and anaerobic respiration.  
(4 marks)

**Solution:**

The similarities between aerobic and anaerobic respiration are:

- Both the processes require glucose (1 mark)
- End products of both the processes are carbon dioxide and energy. (1 mark)

The difference between aerobic and anaerobic respiration are: (1 mark for each difference)

	Aerobic respiration		Anaerobic respiration
1.	Occurs in presence of oxygen	1.	Occurs in absence of oxygen
2.	End products are carbon dioxide and water	2.	End products are alcohol or lactic acid and carbon dioxide

7. Which organism is used in wine preparation and why?  
[2 marks]  
[Anaerobic Respiration]

**Solution:**

- Yeast is used in wine preparation. (1 mark)
- Yeast acts on the glucose present in the grapes and converts the glucose into alcohol, carbon dioxide and energy anaerobically. The alcohol obtained from this is processed to form wine. (1 mark)

8. How do plants respire? (4 marks)

- Plant leaves and roots play a major role in the respiration process. (1 mark)
- Leaves have small tiny pores called stomata which helps in the gaseous exchange. (1 mark)
- Roots don't have stomata. They directly take up the air from the air spaces present in the soil. (1 mark)
- Once the air enters the cell, the oxygen from the air is utilised to produce energy from glucose. (1 mark)

9. What is the breathing organ in insects? What are spiracles? [2 marks]

- The breathing organ in insects is the tracheae. (1 mark)
- Spiracles are the tracheal openings that allow the entry and exit of air in the insect body. (1 mark)

10. Insects and leaves of a plant have pores through which they exchange gases with the atmosphere. Can you write two points of differences between these pores with respect to their position, number and extension into the body. [3 marks]

The pores present in leaves are called stomata whereas the pores present in insects are called spiracles. (1 mark)

**Differences: (2 marks)**

1. Spiracles are present on the sides of insects' body while stomata are present on the lower surface of leaves.
2. Spiracles lead to an extensive network of the tracheal system which is absent in the leaves.
3. Spiracles are fewer in number as compared to stomata.