

NCERT SOLUTIONS- RESPIRATION IN ORGANISMS

NCERT Solutions for Class 7 Science Chapter 10 Respiration In Organisms is the essential study material to perfect Respiration In Organisms topics. The NCERT Class 7 Science solutions provided here correctly answer NCERT textbook questions. Solutions curated comprehensively will help students understand the subtopics in this chapter in a better way.

IMPORTANT SUB-TOPICS MENTIONED IN THE NCERT CLASS 7 SCIENCE CHAPTER 10 RESPIRATION IN ORGANISMS:

NCERT Solutions for Class 7 Science Chapter 10 Respiration in Organisms has the following sub-topics as given below:

Sr. no	Topics
1.	Why do we respire?
2.	Breathing
3.	How do we breathe?
4.	What do we breathe out?
5.	Breathing in other animals
6.	Breathing underwater
7.	Do plants also respire?

NCERT SOLUTIONS CLASS 7 SCIENCE CHAPTER 10 RESPIRATION IN ORGANISMS:**1. Why does an athlete breathe faster and deeper than usual after finishing the race?**

ANS- Athletes breathe more quickly than usual after the race because they require a lot of energy during the race and a lot of oxygen for the release of that energy.

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

ANS- SIMILARITIES:

- Both types of respiration include the breakdown of food particles to produce energy.
- Both take place within the cells.
- Both provide byproducts.

DIFFERENCE:

Aerobic Respiration	Anaerobic Respiration
Occurs in the presence of oxygen	Occurs in the absence of oxygen
The end products are CO ₂ and H ₂ O	The end products are CO ₂ and alcohol
generates a significant amount of energy	When compared to aerobic respiration, the amount of energy released is lower.

Occurs in most of the plants and animals	Occurs in yeast and some bacteria
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3. Why do we often sneeze when we inhale a lot of dust-laden air?

ANS- When we breathe in dust-filled air, the dust irritates our noses, causing us to sneeze in response.

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 in C, keep both the snail and plant. Which test tube would have the highest concentration of CO₂?

ANS- Because test tube A contains a snail that exhales CO₂ into the tube, test tube A will have the greatest concentration of CO₂. Both test tubes B and C include plants, therefore the plants will breathe in CO₂ to lower the CO₂ concentration. As a result, the CO₂ content in these tubes will be lower.

5. Tick the correct answer:

- In cockroaches, air enters the body through
(i) lungs (ii) gills (iii) spiracles (iv) skin
- During heavy exercise, we get cramps in the legs due to the accumulation of
(i) carbon dioxide (ii) lactic acid (iii) alcohol (iv) water
- 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
- During exhalation, the ribs
(i) move outwards (ii) move downwards (iii) move upwards (iv) do not move at all

ANS-

- (iii) spiracles
- (ii) lactic acid
- (ii) 15–18
- (ii) move downwards

6. Match the items in Column I with those in 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) Trachea
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ANS-

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. (T/F)
- (ii) Plants carry out photosynthesis only during the day and respiration only at night. (T/F)
- (iii) Frogs breathe through their skins as well as their lungs. (T/F)
- (iv) Fishes have lungs for respiration. (T/F)
- (v) The size of the chest cavity increases during inhalation. (T/F)

ANS- i) False

ii) False

iii) True

iv) False

v) 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
- (ii) Skeletal structures surrounding the chest cavity
- (iii) Muscular floor of the chest cavity
- (iv) Tiny pores on the surface of a leaf
- (v) Small openings on the sides of the body of an insect
- (vi) The respiratory organs of human beings
- (vii) The openings through which we inhale
- (viii) An anaerobic organism
- (ix) An organism with a tracheal system

ANS- (i) Trachea

(ii) Ribs

(iii) Diaphragm

(iv) Stomata

(v) Spiracles

(vi) Lungs

(vii) Nostrils

(viii) Yeast

(ix) Ant

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

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.

ANS- (b). The amount of air available to a person is less than that available on the ground.