RESPIRATION IN ORGANISM

EXERCISE

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

Answer:
Our body needs energy to perform all activities. While doing heavy exercises like running, demand for energy increases. Hence, more oxygen is required to meet this requirement. Therefore, an athlete breathes faster and deeper than usual after finishing the race.

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

Answer:
Similarities between aerobic and anaerobic respiration are as follows:
1. Both processes involve the breakdown of glucose.
2. Release of energy takes place in both processes.
3. CO_2 is the common product in both processes.

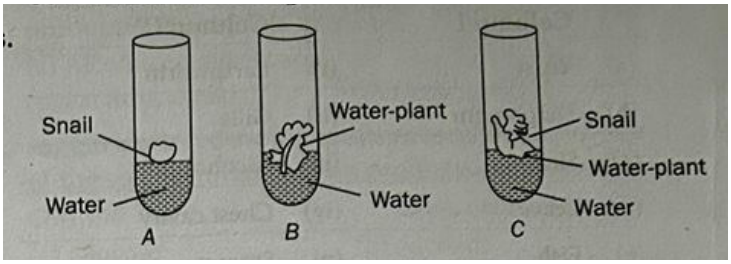
Differences between aerobic and anaerobic respiration are as follows:
1. Aerobic respiration occurs in presence of oxygen while anaerobic respiration takes place in absence of oxygen.
2. Complete breakdown of food takes place in aerobic respiration while partial breakdownof food occurs in anaerobic respiration.
3. Large amount of energy is produced during aerobic respiration while less amount of energy is produced during anaerobic respiration.

Question 3:
Why do we often sneeze when we inhale a lot of dust-laden air?

Answer:
We often sneeze after inhailing dust-laden air because it helps to remove the irritating foreign particles from the nasal passage.

Question 4:
Take three test tubes. Fill 3/4th 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 snail and plant both. Which test tube would have the highest concentration of CO_2?

Answer:



Test tube A will have the highest concentration of CO_2. This experiment shows the relationship between plants and animals. During breathing, snail inhales oxygen and releases CO_2.

Water-plant along with respiration performs another important function called photosynthesis. During photosynthesis, water-plant absorbs CO_2, prepares food and releases oxygen.

Therefore, test tube B and C will have less amount of CO_2 as compared to test tube A.

Question 5:
Tick the correct answer.

(a) In cockroaches, air enters the body through:
1. lungs
2. gills
3. spiracles
4. skin

Answer:
(iii) Spiracles: In cockroaches, air for respiration enters through small holes present on the body called spiracles.

(b) During heavy exercise, we get cramps in the legs due to the accumulation of:
1. carbon dioxide
2. lactic acid
3. alcohol
4. water

Answer:
(ii) Lactic acid is produced during heavy exercise as sufficient oxygen is not available to muscles.

(c) Normal range of breathing rate per minute in an average adult person at rest is:
1. 9-12
2. 15-18
3. 21-24
4. 30-33

Answer:
(ii) 15-18 Normal range of breathing rate is 15-18 breaths per minute for an average adult person at rest.

(d) During exhalation, the ribs:
1. move outwards
2. move downwards
3. move upwards
4. do not move at all

Answer:
(ii) Move downwards During exhalation, the ribs move downwards causing a decrease in the area of the chest cavity, forcing the air out.

Question 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) Tracheae

Answer:
(a) - (iii), (b) - (iv), (c) - (vi), (d) - (v), (e) - (ii), (f) - (vi)

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

(a) During heavy exercise the breathing rate of a person slows down.
(b) Plants carry out photosynthesis only during the day and respiration only at night.
(c) Frogs breathe through their skins as well as their lungs.
(d) The fishes have lungs for respiration.
(e) The size of the chest cavity increases during inhalation.

Answer:
(a) False. During heavy exercise, the breathing rate of a person increases.
(b) False. Photosynthesis occurs in the presence of sunlight, i.e., during the day. Respiration is a continuous process and it occurs all the time (day and night).
(c) True
(d) False. Fishes breathe through their gills.
(e) True

Question 8:
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

Answer:
(b) The mountaineers carry oxygen with them because the amount of air available to a person at higher altitude is less than that available on the ground.