BIOLOGY

BOOKS - ICSE

THE RESPIRATORY SYSTEM

Review Questions A Multiple Choice Type

1. During inspiration, the diaphragm

A. relaxes

B. contracts

C. expands

D. gets folded

Answer:

Watch Video Solution

2. The ultimate end parts of the respiratory system in humans are known as

A. alveoli

B. bronchioles

C. tracheoles

D. bronchi

Answer:

Watch Video Solution

3. During respiration there is :

A. gain in dry weight

B. loss in dry weight

C. no change in dry weight

D. increase in the overall weight

Answer:

Watch Video Solution

Review Questions B Very Short Answer Type

1. Choose the odd one out in each of the following groups of four items each :

Trachea, Bronchus, Alveolus, Diaphragm

Watch Video Solution

2. Choose the odd one out in each of the following groups of four items each :

Ethyl alcohol, Carbon dioxide, Starch, Oxygen absence

Watch Video Solution

3. Choose the odd one out in each of the following groups of four items each :

Diffusion, Respiratory gases, Alveoli, Capillary network

Watch Video Solution

4. Choose the odd one out in each of the following groups of four items each :

Trachea, Ciliated epithelium, Mucus, Diffusion

Watch Video Solution

5. Choose the odd one out in each of the following groups of four items each :

Oxyhaemoglobin, Carbaminohaemoglobin, Hypoxia, Carboxyhaemoglobin

Watch Video Solution

6. Choose the odd one out in each of the following groups of four items each :

Hairy, Moist, Nostril, Vocal cord.

Watch Video Solution

7. Name the body structure concerned with the given functional activity :

Prevents food from entering the trachea during swallowing.

Watch Video Solution

8. Name the body structure concerned with the given functional activity :

Transports oxygen to the body cells

Watch Video Solution

9. Name the body structure concerned with the given functional activity :

Helps to increase the volume of the chest cavity lengthwise.

Watch Video Solution

10. Name the body structure concerned with the given functional activity :

Combines with the oxygen in the lungs.

Watch Video Solution

11. Name the body structure concerned with the given functional activity :

Protects the lungs from mechanical injuries.

Watch Video Solution

12. Name the body structure concerned with the given functional activity :

Provides actual diffusion of respiratory gases in lungs.

Watch Video Solution

13. What is the normal percentage composition of gases in inspired air and expired air respectively?

Watch Video Solution

14. Name the following : The chemical compound inside a cell can be termed "Currency of Energy".

Watch Video Solution

15. Match the items in Column I with the ones most appropriate in Column II. Rewrite the matching pairs :

Column I	Column II
(a) Alveoli	(i) where aerobic respiration takes place
(b) Bronchioles	(ii) lined with hair
(c) Nasal chamber	(iii) diffusion
(d) Bronchi	(iv) small air tubes
	(v) An inverted Y-shaped tube
	(vi) A common passage for food and air

Watch Video Solution

Review Questions C Short Answer Type

1. Given below is an example of a certain structure and its special functional activity:

“Kidney and excretion."

Fill in the blanks on a similar pattern.

Alveoli and .....

Watch Video Solution

2. Given below is an example of a certain structure and its special functional activity:

“Kidney and excretion."

Fill in the blanks on a similar pattern.

Mitochondria and .....

Watch Video Solution

3. Write the special functional activity of the following structures. For example :Kidney and excretion.

Epiglottis and .....

Watch Video Solution

4. Write the special functional activity of the following structures. For example :Kidney and excretion.

Pleura and .....

Watch Video Solution

5. Write the special functional activity of the following structures. For example :Kidney and excretion.

Diaphragm and .....

Watch Video Solution

6. Write the special functional activity of the following structures. For example :Kidney and excretion.

.C. shaped cartilage and .....

Watch Video Solution

7. Give one function : Ciliated epithelium lining the respiratory tract

Watch Video Solution

8. State the major functions of

Mitochondria

Watch Video Solution

9. State one function of each of the following:

Diaphragm

Watch Video Solution

10. Give one function : Intercostal muscles.

Watch Video Solution

11. Give one function : Pleural fluid.

Watch Video Solution

12. Match the items in Column A with those in Column B.

Column A	Column B
Cartilaginous	Epiglottis
Large surface area	Diaphragm
Breathing movements	Bronchi
Voice	Alveoli
Complemental air	Larynx
Swallowing	Extra inhalation

Watch Video Solution

13. Under what conditions would the breathing rate increase ?

Watch Video Solution

14. How would you prove that the air you breathe out in warmer?

Watch Video Solution

15. How is the respiratory passage kept free of dust particles ?

Watch Video Solution

16. What is wrong in the statement “We breathe in oxygen and breathe out carbon dioxide"

Watch Video Solution

Review Questions D Long Answer Type

1. Differentiate between the following pairs on the basis of the aspect given in the brackets.

Aerobic and anaerobic respiration (end products of the process).

Watch Video Solution

2. Differentiate between the following pairs on the basis of the aspect given in the brackets.

Respiration and photosynthesis (gas released).

Watch Video Solution

3. Differentiate between the following pairs on the basis of the aspect given in the brackets.

Photosynthesis and respiration (Reactants)

Watch Video Solution

4. Differentiate between the following pairs on the basis of the aspect given in the brackets.

Inspired air and alveolar air (Carbon-di-oxide content)

Watch Video Solution

5. Differentiate between the following pairs on the basis of the aspect given in the brackets.

Respiration and breathing (organs involved).

Watch Video Solution

6. Differentiate between the following pairs on the basis of what is given in the brackets :

Tidal volume and Residual volume (Volume of air in normal adults.)

Watch Video Solution

7. Breathing through nose is healthier than breathing by mouth. Why?

Watch Video Solution

8. Give suitable explanations for the following:

Why does gaseous exchange continue in the lungs even during expiration ?

Watch Video Solution

9. Give suitable explanations for the following:

Why does a person feel breathlessness at higher altitudes?

Watch Video Solution

10. Give suitable explanations for the following:

Why do you shiver and why do your teeth chatter when it is very cold in winter ?

Watch Video Solution

11. With regard to the respiratory system and the process of respiration in man, answer the following questions:

Name the two muscles that help in breathing.

Watch Video Solution

12. With regard to the respiratory system and the process of respiration in man, answer the following questions:

Briefly describe how the above mentioned muscles help in the inspiration of air.

Watch Video Solution

13. Write the equation to show the process of respiration.

Watch Video Solution

14. With regard to the respiratory system and the process of respiration in man, answer the following questions:

What is meant by:

1. Residual air

2. Dead air space.

Watch Video Solution

15. Starting from the nostrils, trace the path in sequence which the inspired air takes until it reaches the air sacs.

Watch Video Solution

16. What is the contribution of the following in breathing?

Ribs

Watch Video Solution

17. What is the contribution of the following in breathing?

Diaphragm

Watch Video Solution

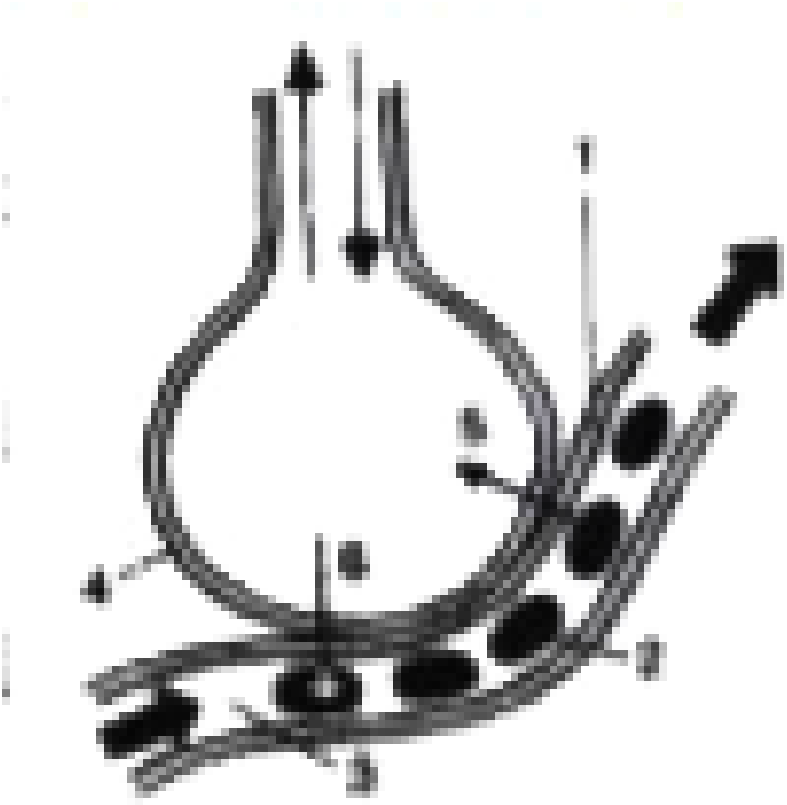
18. What is the contribution of the following in breathing?

Abdominal muscles

Watch Video Solution

Review Questions E Structured Application Skill Type

1. Given alongside is a diagrammatic sketch of a part in human lungs



(i) Name the parts numbered 1-4

(ii) What do the arrows 5 and 6 indicate ?

Watch Video Solution

2. Given below is an overall chemical reaction of a certain process :

$C_6H_{12}O_6 \rightarrow$ lactic acid+2ATP+heat energy`

Name the process.

Watch Video Solution

3. Given below is an overall chemical reaction of a certain process :

$C_6H_{12}O_6 \rightarrow$ lactic acid+2ATP+heat energy`

Is this reaction applicable to animals or to plants or to both animals and plants ?

Watch Video Solution

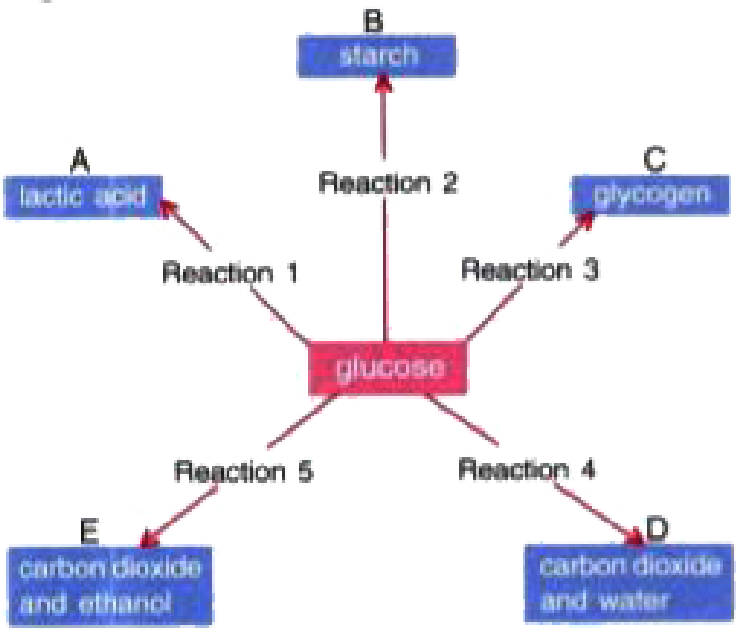
4. Given below is an overall chemical reaction of a certain process :

$C_6H_{12}O_6 \rightarrow$ lactic acid+2ATP+heat energy`

Name one tissue in which this reaction may occur.

Watch Video Solution

5. Given below are chemical reactions (1 to 5) involving glucose and five other chemical products (A-E).



(a) Write the reaction number of the following:

(i) Anaerobic respiration in plants .....

(ii) End-products in aerobic respiration .....

(iii) Reaction occurring in liver .....

(iv) Anaerobic respiration in animals .....

(v) Storage in the liver.....

(b) Which reactions (1-5) in the above correspond to the following (write the corresponding number of reaction next to them).

(i) Aerobic respiration

(ii) Change taking place in the liver

(iii) Anerobic respiration in yeast.

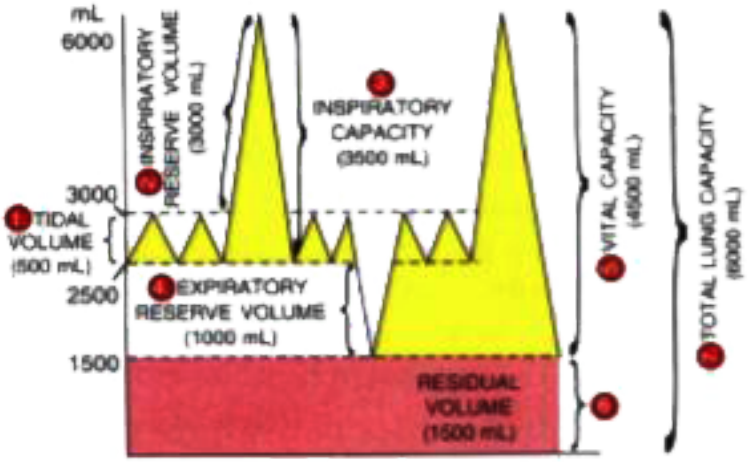
(iv) Change taking place in a plant storage organ, e.g., potato.

(v) Anaerobic respiration in animals

Watch Video Solution

6. The volume of air in the lungs and the rate at which it is exchanged during inspiration and expiration was measured.

The following diagram shows a group of the lung volumes and capacities :



Study the diagram carefully and explain briefly the following:

(a) Tidal volume

(b) Inspiratory reserve volume

(c) Expiratory reserve volume

(d) Vital capacity

(e) Residual volume

Watch Video Solution

Progess Check

1. Given below is the definition of respiration with a few blanks to be filled in. Write suitable words in the blanks : Respiration is a process of releasing ..... by breaking down ..... for carrying out ..... processes.

Watch Video Solution

2. Write the overall chemical equation representing the above definition of respiration.

Watch Video Solution

3. In what form is the energy released during respiration stored?

Watch Video Solution

4. Give two examples of life activities which need energy.

Watch Video Solution

5. Strenuous physical exercise may cause fatigue due to accumulation of CO_2, in the blood

Watch Video Solution

6. No CO_2 is produced in anaerobic respiration in the human body.

Watch Video Solution

7. Breathing and gaseous transport are one and the same thing.

Watch Video Solution

8. CO_2 is transported to the lungs by the blood in two forms: as bicarbonates and as carbamino -haemoglobin.

Watch Video Solution

9. Tissue respiration means chemical changes occurring inside the cell.

Watch Video Solution

10. Match the items in Column with those in Column II.

Column I	Column II
A. Nasal chamber	(i) Production of voice
B. Epiglottis	(ii) C-shaped rings
C. Air-sacs	(iii) Warms air
D. Lungs	(iv) Drives mucus
E. Larynx	(v) Closes wind-pipe during swallowing
F. Trachea	(vi) Network of capillaries
G. Cilia	(vii) Spongy and elastic

Watch Video Solution

11. How do the following contribute in inspiration during breathing? (i) Ribs (ii) Diaphragm

Watch Video Solution

12. Match the lung capacities in Column I with the quantities given in Column II.

	Column I	Column II
A.	Residual air	4500 mL
B.	Vital capacity	6000 mL
C.	Total lung capacity	1500 mL
D.	Dead air space	150 mL

Watch Video Solution

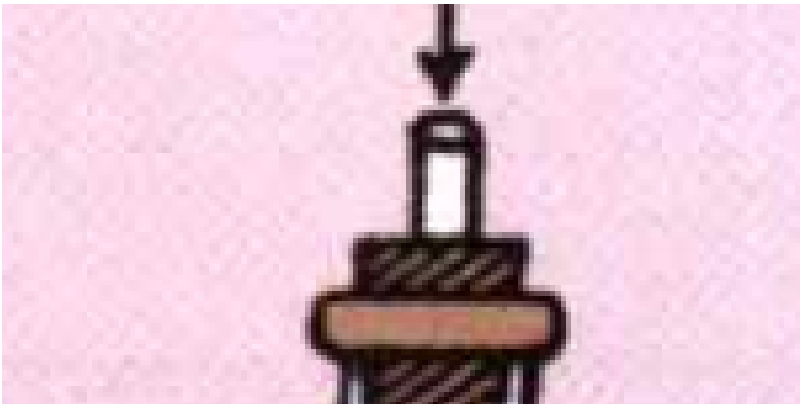
13. Mention any two points of difference in the quality of inspired and expired air.

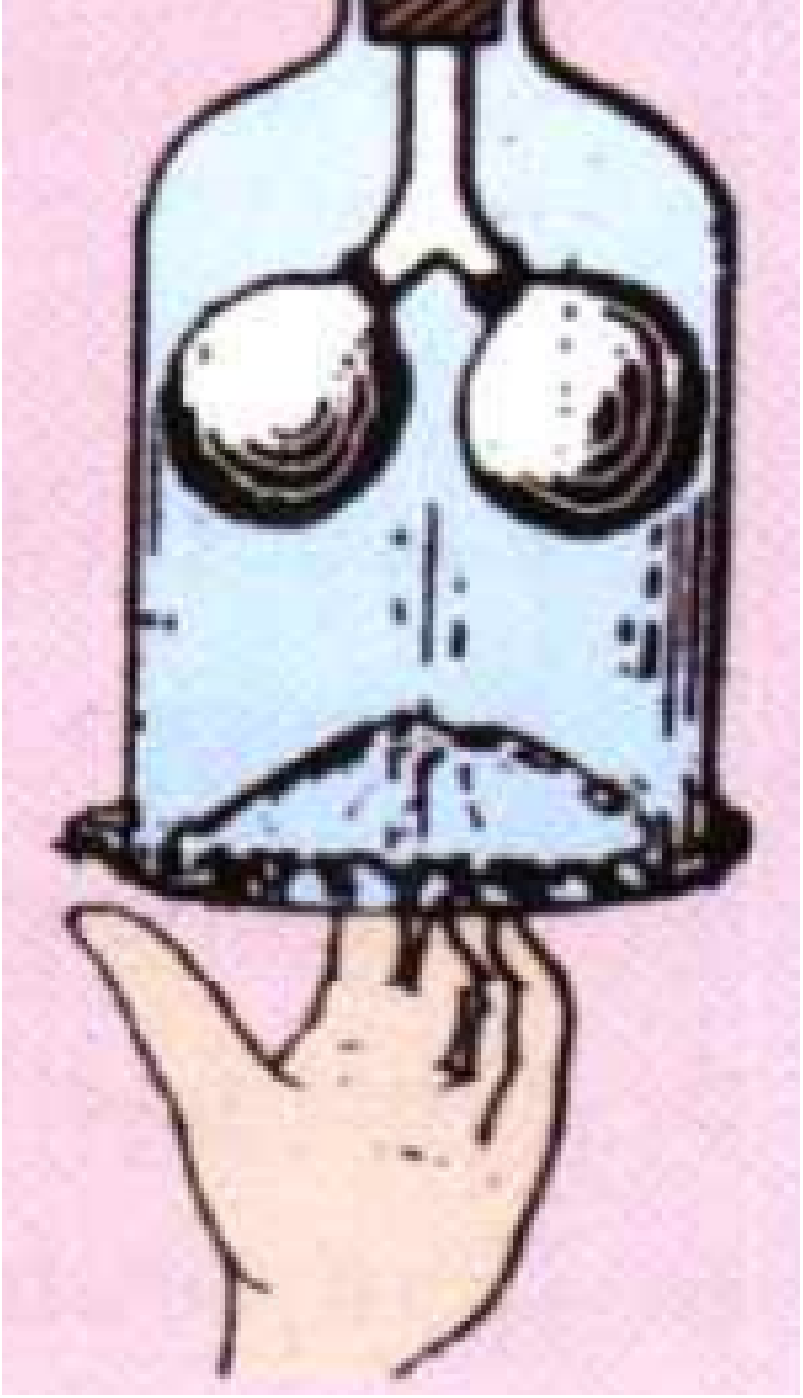
Watch Video Solution

14. Give reasons for : (i) People climbing to high altitudes may suffer from dizziness and unsteady vision. (ii) Lime water is used in most experiments on respiration. (iii) Respiration rate is higher in animals than in plants.

Watch Video Solution

15. Given alongside is an experiment intended to demonstrate the action of diaphragm, but some thing has gone wrong. (1) What is the mistake in the diagram? Explain.





Watch Video Solution