

**BIOLOGY**  
**BREATHING AND EXCHANGE OF GASES**  
**WORK SHEET**

**MULTIPLE CHOICE QUESTIONS**

1. Dorsally the thoracic chamber is protected by
  - (a) Ribs
  - (b) Sternum
  - (c) Vertebral column
  - (d) Diaphragm
2. Carbon dioxide combines with haemoglobin to form
  - (a) Carboxy haemoglobin
  - (b) Carbamino haemoglobin
  - (c) Oxyhaemoglobin
  - (d) Amino haemoglobin
3. Pneumotaxic centre which regulates the process of respiration is located in
  - (a) Medulla
  - (b) Pons
  - (c) Cerebellum
  - (d) Hypothalamus
4. Exchange of gases in earthworm takes place through
  - (a) Cuticle
  - (b) Gills
  - (c) Tracheal tubules
  - (d) Green glands
5. The cartilaginous box that helps in the production of sound is known as
  - (a) Pharynx
  - (b) Larynx
  - (c) Sound box
  - (d) Both (b) and (c)

## 2 MARKS QUESTIONS

6. Give a brief account of respiratory organs in amphibians.
7. (a) What is the major cause for emphysema?  
(b) Name the location of respiratory rhythm centre.
8. Name the muscles associated with inspiration and expiration.
9. Name the bones which are associated with thoracic chamber.
10. Distinguish between carbamino - haemoglobin and carboxy - haemoglobin.
11. Explain how partial pressure of gases associated with their transport?
12. What is the role of neural system in the regulation of respiration?
13. Explain the transport of oxygen in the form of oxy-haemoglobin.

## 3 MARKS QUESTIONS

14. Give a brief description of transport of carbon dioxide.
15. The diffusion membrane is made up of three major layers. Name the membranes and write how the thickness of these membranes help in diffusion.
16. Give a brief description of some important respiratory disorders.
17. What you mean by carbon monoxide poisoning? How it causes death of the affected person?

## 5 MARKS QUESTIONS

18. Brief the different processes involved in respiration in five steps.
19. With the help of a neat labelled diagram explain the structure of human respiratory structure.
20. Carbonic anhydrase is an important enzyme that plays an important role in the transport of carbon dioxide. Explain its role in carbon dioxide transport. What are the other ways by which carbon dioxide is transported?

## ANSWER KEY

1.	(Ans. c)
2.	(Ans. b)
3.	(Ans. b)
4.	(Ans. a)
5.	(Ans. d)
6.	(Hints: Water- through moist skin and land – through lungs)

7.	<b>(Hints: (a) cigarette smoking, (b) medulla)</b>
8.	<b>(Hints: Diaphragm, external and internal intercostal muscles)</b>
9.	<b>(Hints: Sternum, vertebrae, ribs)</b>
10.	<b>(Hints: carbon-dioxide and haemoglobin and carbon-monoxide and haemoglobin)</b>
11.	<b>(Hints: Definition of partial pressure, gases diffuse from high to low pressure)</b>
12.	<b>(Hints: Regulation of respiration by neural system, role of medulla, pons and pneumotaxic center)</b>
13.	<b>(Hints: Factors affecting formation and dissociation of oxyhemoglobin, transport of oxygen)</b>
14.	<b>(Hints: Transport of carbon dioxide in the form of carbamino-haemoglobin, bicarbonates and dissolved in plasma)</b>
15.	<b>(Hints: Exchange surface- 3 layers, epithelium of alveoli, endothelium of alveolar capillaries and basement membrane in between them)</b>
16.	<b>(Hints: Names and symptoms of asthma, emphysema, ORDs)</b>
17.	<b>(Hints: Formation of carboxy-haemoglobin, affects the formation of oxyhemoglobin, oxygen carrying capacity, lack of oxygen and death)</b>
18.	<b>(Hints: Explanation of five steps – Breathing, Exchange across alveolar membrane, transport of gases, exchange between blood and tissue and cellular respiration)</b>
19.	<b>(Hints: Diagram and parts of respiratory system)</b>
20.	<b>(Hints: Role of carbonic anhydrase in the transport of carbon dioxide – explanation and equation; transport as carbamino haemoglobin and dissolved in plasma)</b>