

# Digestion and Absorption

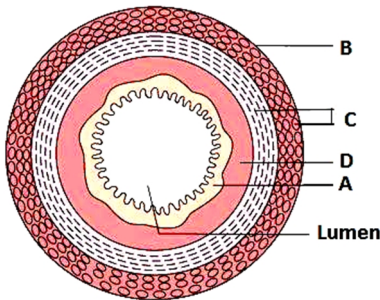
Max Marks: 30

Time: 60 min

- 1 Saliva contains two enzymes. Name them. ½ +½ P262
- 2 Write the dental formula of a human adult. 1 P258
- 3 Why do human adults have problem in taking milk in their diet? 1 P262
- 4 Human teeth is thecodont and diphyodont. What does it mean? ½ +½ P257
- 5 Human stomach can be divided into three anatomical regions namely \_\_\_\_\_, Cardiac and \_\_\_\_\_ (fill in the gaps) ½ +½ P259

- 6 Name two enzymes which are secreted as proenzymes. How are they activated? 2 P262

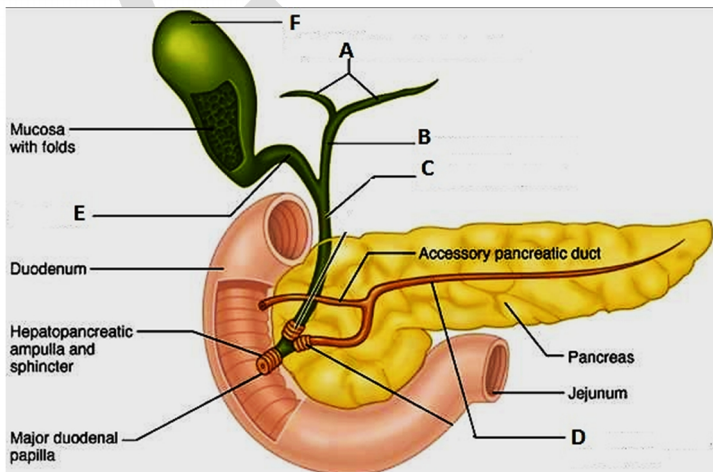
- 7 2 P260



The figure shows T.S. of gut. Label the layers marked A to D.

- 8 What is the composition of bile? What role does it play in digestion? 1+1 P263
- 9 a) Pancreas is both endocrine and exocrine in function. How? 1 P261
- b) Explain in brief the mechanism of swallowing. 2 P262
- 10 How are fatty acids and glycerol absorbed into the blood? 3 P265

- 11 3 P261



The figure shows the duct system between different organs. You are to identify the parts marked A to F.

**12 Give brief answers to the following questions.**

- a) Large intestine plays no significant role in digestion. Then what is its function? **1** P264
- b) Faecal matter is temporarily stored in the rectum. If a person is made to stand on his head will the faecal matter return to caecum? Why? **1** P264
- c) What causes jaundice? **1** P265
- d) In which parts of the digestive system, protein digestion takes place? **1**
- e) What happens to DNA and RNA in the cells / tissue we eat? **1**
- 13 a)** The mucosa of stomach has gastric glands. Gastric glands have three major types of cells. Name the cells and mention their functions. **3** P262
- b) What are Goblet cells? What does it secrete? **2** P263

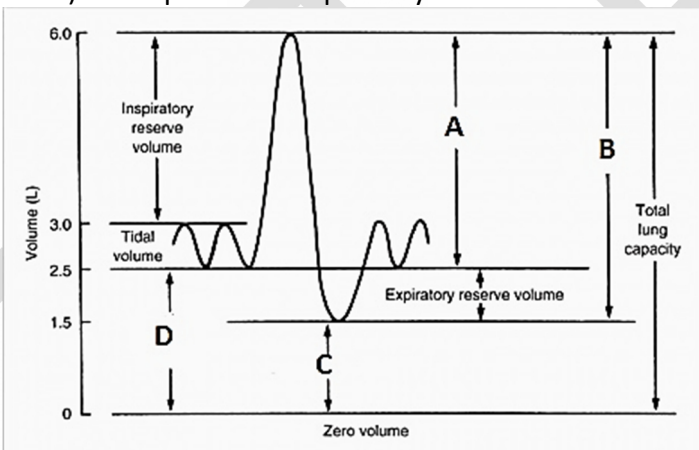
Chapter-17

# Breathing and Exchange of Gases

Max Marks: 30

Time: 60 min

- 1 Which organ in our body is called sound box? 1 P269
- 2 What is the role of pneumotaxic centre of the brain in relation to respiration? 1 P275
- 3 Maximum how many molecules of oxygen can a haemoglobin molecule carry at a time? 1 P274
- 4 Every 100 ml of oxygenated blood can deliver around \_\_\_\_\_ ml of oxygen to tissues under normal physiological conditions. 1 P274
- 5 Name the respiratory disorder where the patient feels difficulty in breathing causing wheezing due to inflammation of bronchi and bronchioles. 1 P275
- 6 Explain the terms: 2
  - a) Emphysema P275
  - b) Occupational Respiratory Disorder P276

7  ½ x4

- 8 Explain diffusion of gases between alveoli and blood based on the difference in the partial pressure of respiratory gases. 2 P272

- 9 Match the following: ½ x 6 P271

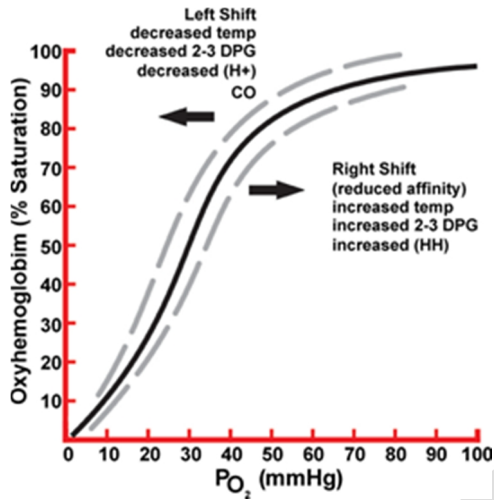
Pulmonary Volume / Capacity	Volume
Tidal Volume	ERV + RV
Expiratory Reserve Volume	2500-3000 ml
Inspiratory Reserve Volume	ERV +TV+IRV
Functional Residual Capacity	500 ml
Residual volume	1000-1100 ml
Vital Capacity	1100-1200 ml

-272

- 10 Enlist the steps in Respiration. 3 P270
- 11 a) Write the path of air through nostrils up to the alveoli using a flow diagram. 2 P269
- b) Name the respiratory organs of earthworm and aquatic arthropods. 1 P269

12 Explain the role of Diaphragm and Intercostal muscles in inspiration and expiration. 5 P270

13a) The graph shows Oxygen Dissociation Curve. What inference do you draw after studying the graph? 2 P274



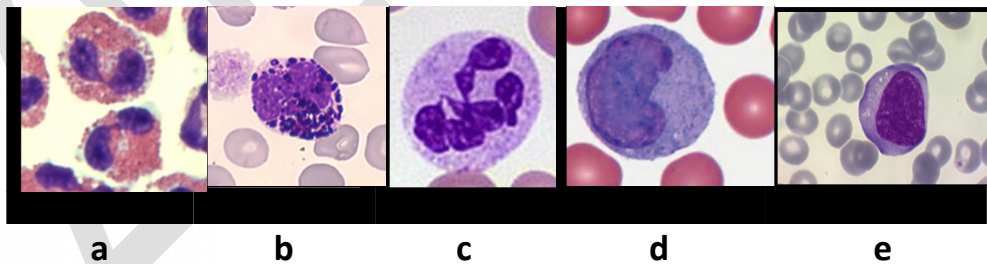
b) Explain how Carbon-di-oxide is transported from tissues to lungs. 3 P274

# Body Fluids and Circulation

Max Marks: 30

Time: 60 min

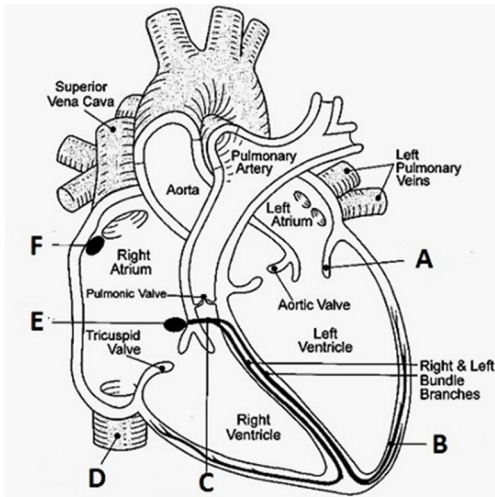
- |             |   |              |      |
|-------------|---|--------------|------|
| <b>1</b>    | What is Joint Diastole?   | <b>1</b>     | P285 |
| <b>2</b>    | What is angina pectoris?  | <b>1</b>     | P288 |
| <b>3</b>    | Write anatomical difference between vein and artery.  | <b>1</b>     | P287 |
| <b>4</b>    | What is the relation between Stokes volume and Cardiac output?  | <b>1</b>     | P285 |
| <b>5</b>    | Human heart is myogenic. What does it mean?   | <b>1</b>     | P287 |
| <b>6</b>    | Draw a flow chart showing double circulation involving heart chambers and different paths.  | <b>2</b>     | P287 |
| <b>7</b>    | Explain the process of blood coagulation.   | <b>½ x4</b>  | P281 |
| <b>8</b>    | Name the three major proteins of blood plasma. What role does Globulin play?  | <b>2</b>     | P279 |
| <b>9 a)</b> | Why a patient having blood group B can't be given A group blood?  | <b>1</b>     | P280 |
| <b>b)</b>   | What is expected to happen if a mother (Rh negative) carries a foetus having Rh positive? Explain.  | <b>2</b>     | P281 |
| <b>10</b>   | What percentage of the blood is the formed elements? Identify the blood cells a-e from the hints given.<br>Lymphocyte, Neutrophil, Eosinophil, Monocyte, Basophil | <b>½ x 6</b> | P279 |



- |              |  |          |      |
|--------------|--|----------|------|
| <b>11 a)</b> | What role does lymph play in our body?       | <b>2</b> | P282 |
| <b>b)</b>    | Which organ is called the graveyard of RBCs? | <b>1</b> | P279 |

12 a)

5 P283



b) How are the two heart sounds produced?

2 P285

13a) Explain why atrial systole always precedes ventricular systole?

2 P284

b)

Study the ECG and explain the waves.

1x3 P285

