

## CHAPTER 16

# DIGESTION AND ABSORPTION

### MULTIPLE CHOICE QUESTIONS

1. Select what is not true of intestinal villi among followings
  - a. They possess microvilli
  - b. They increase the surface area
  - c. They are supplied with capillaries and the lacteal vessels
  - d. They only participate in digestion of fats
2. Hepato-pancreatic duct opens into the duodenum and carries
  - a. Bile
  - b. Pancreatic juice
  - c. Both bile and pancreatic juice
  - d. Saliva
3. One of the following is not a common disorder associated with digestive system
  - a. Tetanus
  - b. Diarrhoea
  - c. Jaundice
  - d. Dysentery
4. A gland not associated with the alimentary canal is
  - a. Pancreas
  - b. Adrenal
  - c. Liver
  - d. Salivary glands
5. Match the two columns and select the correct among options given

| Column I                     | Column II                                |
|------------------------------|--|
| A. Biomacromolecules of food | i. Alimentary canal and associated gland |
| B. Human digestive system    | ii. Embedded in jawbones.                |

- |              |                                      |
|--------------|--------------------------------------|
| C. Stomach   | iii. Outer wall of visceral organs   |
| D. Thecodont | iv. Converted into simple substances |
| E. Serosa    | v. J-shaped bag like structure       |

Options:

- A-ii, B-i, C-v, D-iii, E-iv
- A-iv, B-i, C-v, D-ii, E-iii
- A-i, B-ii, C-iii, D-iv, E-v
- A-i, B-iii, C-ii, D-iv, E-v

6. Match the two columns and select the right one among options given

Column I

- Duodenum
- Epiglottis
- Glottis
- Caecum

Column II

- A cartilaginous flap
- Small blind sac
- 'U' shaped structure emerging from the stomach
- Opening of wind pipe

Options

- A-i, B-ii, C-iii, D-iv
- A-iv, B-iii, C-ii, D-i
- A-iii, B-i, C-iv, D-ii
- A-ii, B-iv, C-i, D-iii

7. Match the enzyme with their respective substrate and choose the right one among options given

Column I

- Lipase
- Nuclease
- Carboxypeptidase
- Dipeptidases

Column II

- Dipeptides
- Fats
- Nucleic acids
- Proteins, peptones and proteoses.

Options:

- A-ii, B-iii, C-i, D-iv
- A-iii, B-iv, C-ii, D-i
- A-iii, B-i, C-iv, D-ii
- A-ii, B-iii, C-iv, D-i

8. Dental formula in human beings is

- $\begin{array}{cccc} 3 & 2 & 2 & 3 \\ 3 & 2 & 2 & 3 \end{array}$
- $\begin{array}{cccc} 2 & 1 & 2 & 3 \\ 2 & 1 & 2 & 3 \end{array}$

- c.  $\frac{1\ 2\ 3\ 2}{1\ 2\ 3\ 2}$
- d.  $\frac{2\ 2\ 3\ 3}{2\ 2\ 3\ 3}$
9. Liver is the largest gland and is associated with various functions, choose one which is not correct
- Metabolism of carbohydrate
  - Digestion of fat
  - Formation of bile
  - Secretion of hormone called gastric
10. Mark the right statement among the following
- Trypsinogen is an inactive enzyme
  - Trypsinogen is secreted by intestinal mucosa
  - Enterokinase is secreted by pancreas
  - Bile contains trypsin

### VERY SHORT ANSWER TYPE QUESTIONS

- The food mixes thoroughly with the acidic gastric juice of the stomach by the churning movements of its muscular wall. What do we call the food then?
- Trypsinogen is an inactive enzyme of pancreatic juice. An enzyme, enterokinase, activates it. Which tissue/ cells secrete this enzyme?/ How is it activated?
- In which part of alimentary canal does absorption of water, simple sugars and alcohol takes place?
- Name the enzymes involved in the breakdown of nucleotides into sugars and bases?
- Define digestion in one sentence.
- What do we call the type of teeth attachment to jaw bones in which each tooth is embedded in a socket of jaws bones?
- Stomach is located in upper left portion of the abdominal cavity and has three major parts. Name these three parts.
- Does gall bladder make bile?
- Correct the following statements by deleting one of entries (given in bold).

- a. Goblet cells are located in the intestinal mucosal epithelium and secrete **chymotrypsin / mucus**.
- b. Fats are broken down into di- and monoglycerides with the help of **amylase/ lipases**.
- c. Gastric glands of stomach mucosa have **oxyntic cell / chief cells** which secrete HCl.
- d. Saliva contains enzymes that digest **starch /protein**.

### SHORT ANSWER TYPE QUESTIONS

1. What is pancreas? Mention the major secretions of pancreas that are helpful in digestion.
2. Name the part of the alimentary canal where major absorption of digested food takes place. What are the absorbed forms of different kinds of food materials?
3. List the organs of human alimentary canal and name the major digestive glands with their location.
4. What is the role of gall bladder? What may happen if it stops functioning or is removed?
5. Correct the statement given below by the right option shown in the bracket against them
  - a. Absorption of amino acids and glycerol takes place in the. (small intestine/ large intestine)
  - b. The faeces in the rectum initiate a reflex causing an urge for its removal. (neural /hormonal)
  - c. Skin and eyes turn yellow in infection. (liver /stomach)
  - d. Rennin is a proteolytic enzyme found in gastric juice in (infants / adults).
  - e. Pancreatic juice and bile are released through. (intestine-pancreatic/ hepato- pancreatic duct)
  - f. Dipeptides, disaccharides and glycerides are broken down into simple substances in region of small intestine. (jejunum/ duodenum)
6. What are three major types of cells found in the gastric glands? Name their secretions.
7. How is the intestinal mucosa protected from the acidic food entering from stomach?
8. How are the activities of gastro-intestinal tract regulated?

9. Distinguish between constipation and indigestion. Mention their major causes.
10. Describe the enzymatic action on fats in the duodenum.

### LONG ANSWER TYPE QUESTIONS

1. A person had roti and dal for his lunch. Trace the changes in those during its passage through the alimentary canal.
2. What are the various enzymatic types of glandular secretions in our gut helping digestion of food? What is the nature of end products obtained after complete digestion of food?
3. Discuss mechanisms of absorption.
4. Discuss the role of hepato – pancreatic complex in digestion of carbohydrate, protein and fat components of food.
5. Explain the process of digestion in the buccal cavity with a note on the arrangement of teeth.