I. Objective Questions:

A. Tick the correct answers: **[** 0.5 x 10 = 5]

1. The enzymes present in the saliva convert

(a) fats into fatty acids and glycerol.

(b) starch into simple sugars.

(c) proteins into amino acids.

(d) complex sugars into simple sugars.

Answer: (b) starch into simple sugars.

Explanation: Saliva consists of salivary amylase enzyme, which breaks starch into simple sugar, which is further digested by enzymes in the stomach and small intestine.

2. Cud is the name given to the food of ruminants which is

(a) swallowed and undigested.

(b) swallowed and partially digested.

(c) properly chewed and partially digested.

(d) properly chewed and completely digested.

Answer: (b) swallowed and partially digested.

Explanation: Ruminants quickly swallow the grass and store it in a part of the stomach called the rumen. Here the food gets partially digested and is called cud. But later, the cud returns to the mouth in small lumps, and the animal chews it. This process is called rumination.

3. Choose the correct order of terms that describes the process of nutrition in ruminants.

(a) swallowing → partial digestion → chewing of cud → complete digestion

(b) chewing of cud → swallowing → partial digestion → complete digestion

(c) chewing of cud → swallowing → mixing with digestive juices → digestion

(d) swallowing → chewing and mixing → partial digestion → complete digestion

Answer: (a) swallowing → partial digestion → chewing of cud → complete digestion

4. Cellulose-rich food substances are a good source of roughage in human beings because

(a) human beings do not have cellulose-digesting enzymes.

(b) cellulose gets absorbed in the human blood and converts into fibres.

(c) the cellulose-digesting bacteria convert cellulose into fibres.

(d) cellulose breaks down into smaller components which are egested as roughage.

Answer: (a) human beings do not have cellulose-digesting enzymes.

5. The false feet of Amoeba are used for
(a) movement only
(b) capturing food only
(c) capturing food and movement
(d) exchange of gases only

Answer: (c) capturing food and movement

6. Enzymes present in saliva converts
(a) starch into simple sugars
(b) proteins into amino acids
(c) complex sugars into simple sugars
(d) fats into fatty acids and glycerol

Answer: (a) starch into simple sugars

7. How many types of teeth are there?
(a) 1
(b) 2
(c) 3
(d) 4

Answer: (d) 4

8. Which gland secretes bile juice?
(a) Liver
(b) Pancreas
(c) Bladder
(d) All of these

Answer: (a) Liver

9. The bile plays an important role in the digestion of
(a) carbohydrates
(b) fats

(c) sugar
(d) starch

Answer: (b) fats

10. The finger-like outgrowths of human intestine helps to
(a) make the food soluble
(b) absorb the digested food
(c) absorb the undigested food
(d) digest the fatty food substances

Answer: (b) absorb the digested food

B. Fill in the blanks: **[0.5 x 6 = 3]**

1. The_____ present in the stomach kills the harmful bacteria that may enter along with the food.

Answer: acid

2. We get hiccups when food particles enter the _____.

Answer: windpipe

3. The continuous canal which begins at the buccal cavity and ends at the anus is called _____ or _____.

Answer: alimentary canal, digestive tract

4. The swallowed food passes from buccal cavity to stomach through _____.

Answer: oesophagus

5. The lining of the stomach is protected by the _____.

Answer: mucous

6. The length of the small intestine is about _____ metres.

Answer: 7.5

C. Stare true or false: [4 x 0.5 = 2]

1. Diarrhoea is a condition in which one passes watery stool frequently.

Answer: True

2. Alimentary canal begins at the anus and ends at the buccal cavity.

Answer: False

3. The saliva breaks down the starch into amino acids.

Answer: False

4. The inner walls of large intestine have thousands of finger-like projections called villi.

Answer: False

D. Following statements describe the five steps in animal nutrition. Read each statement and give one word for each statement. Write the terms that describe each process.

(a) Transportation of absorbed food to different parts of the body and their utilisation.

(b) Breaking of complex food substances into simpler and soluble substances.

(c) Removal of undigested and unabsorbed solid residues of food from the body.

(d) Taking food into the body.

(e) Transport of digested and soluble food from the intestine to blood vessels.

Answer:

(a) Assimilation
(b) Digestion
(c) Egestion
(d) Ingestion
(e) Absorption

E. Choose the odd one out from each group and give reasons.

(i) liver, salivary gland, starch, gall bladder

(ii) stomach, liver, pancreas, salivary gland

(iii) tongue, absorption, taste, swallow

(iv) oesophagus, small intestine, large intestine, rectum

Answer:

The answer is Starch because starch is a carbohydrate, whereas the liver, salivary gland and gall bladder are the glands.

The answer is the stomach because others are digestive glands

Absorption is the answer because tongue, swallow and taste are related to the buccal cavity but not absorption.

The small intestine is the answer because the oesophagus, large intestine and rectum will not take part in digestion, whereas the small intestine plays the main role in the digestion process.

F. Match the following:

Column I	Column II
1. Salivary amylase	(a) Digest protein
2. Gastric juice	(b) Cream-coloured gland
3. Pancreatic juice	(c) Stores many bacteria
4. Bile	(d) Mode of feeding
5. Chewing cud	(e) Kills germ
6. Caecum	(f) Tongue
7. Food pipe	(g) Emulsifies fat
8. Pancreas	(h) Breaks carbohydrate
9. Taste buds	(i) Oesophagus
10. Siphoning	(j) Ruminants

Answers:

Column I	Column II
1. Salivary amylase	(h) Breaks carbohydrate
2. Gastric juice	(e) Kills germ
3. Pancreatic juice	(a) Digest protein
4. Bile	(g) Emulsifies fat

5. Chewing cud	(j) Ruminants
6. Caecum	(c) Stores many bacteria
7. Foodpipe	(i) Oesophagus
8. Pancreas	(b) Cream-coloured gland
9. Taste buds	(f) Tongue
10. Siphoning	(d) Mode of feeding

II. Short Answer Questions **[2 x 3 = 6]**

Q1. Name the parts of the alimentary canal where

(i) water gets absorbed from undigested food.

(ii) digested food gets absorbed.

(iii) taste of the food is perceived.

(iv) bile juice is produced.

Answer:

(i) Large intestine

(ii) Small intestine

(iii) Tongue

(iv) Liver

Q2. What are villi? What is their location and function?

Answer: Villi are finger-like projections or outgrowth. They are present in the small intestine of our digestive system. The villi increase the surface area for absorption of the digested food.

Q3. Name the type of carbohydrate that can be digested by ruminants but not by humans. Give the reason also.

Answer: Cellulose is the carbohydrate that can be digested by ruminants but not by humans because humans lack cellulose enzyme required to digest the cellulose.

Q4. Name the various components of food and their simpler forms.

Answer: The various components of food and their simpler forms are

Components of food	Simpler form
Carbohydrate	Glucose
Fats	Fatty acids and glycerol
Proteins	Amino acids
Vitamins	Vitamins
Minerals and water	Minerals and water

Q5. Recall and name the main organs of the digestive system in our body.

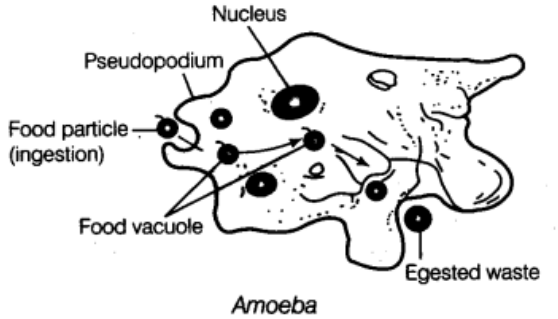
Answer:

The different organs of the alimentary canal are as follows :

1. Mouth and mouth cavity
2. Oesophagus
3. Stomach
4. Small intestine
5. Large intestine
6. Anus

Q6. Draw a neat and clean diagram of Amoeba showing the correct location of the following components : nucleus, vacuole, pseudopodia.

Answer:



Amoeba

III. Long Answer Questions:

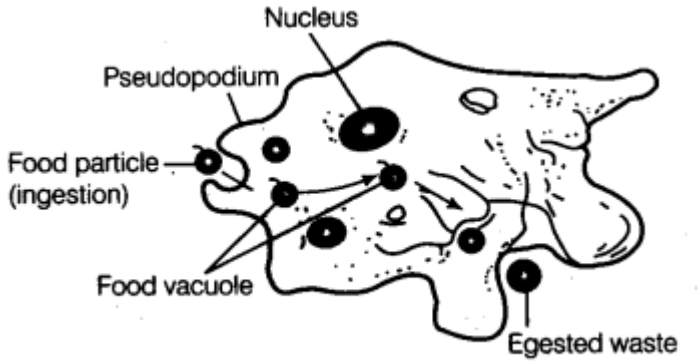
Q1. Ruminants such as cows and buffaloes swallow their food hurriedly and then sit restfully and chew their food. Give reason.

Answer: Ruminants such as cows and buffaloes swallow their food hurriedly and store it in a part of the stomach called rumen. The cellulose of the food is digested here by the action of certain bacteria which are not present in humans. Later, this partially digested food is returned to the buccal cavity of the animals in small lumps and animal chews it to complete the process of digestion. This process is called rumination.

Q2. Briefly describe the process of digestion in Amoeba with the help of labelled diagram.

Answer: Feeding and Digestion in Amoeba

Amoeba is a microscopic single celled organism, which is found in pond water. It is a very simple animal and cannot be seen by naked eyes. Amoeba has a cell membrane, a rounded dense nucleus and many small bubble-like vacuoles in its cytoplasm. These vacuoles are of two types, i.e. food vacuole and contractile vacuole. Food vacuole contains food surrounded by water while contractile vacuole contains liquid or water and controls water regulation activity in Amoeba. Its shape is not fixed, i.e. it constantly changes its shape and position. The body of Amoeba has finger-like projections, called pseudopodia or false feet. It captures food and helps in locomotion of Amoeba.



Amoeba

The food of Amoeba are microscopic organisms like tiny plants and animals present in pond water. When Amoeba senses its food, it pushes out pseudopodia around the food particle and engulfs it. The two pseudopodia join around the food particle and trap the food particle with a little water forming vacuole around food, thus the food gets trapped. Digestive juices present inside the vacuole, acts on the food and break it into simpler substances. This digested food is then absorbed and is used for growth, maintenance and multiplication of Amoeba. The undigested food residue is expelled outside by the vacuole. The basic process of digestion of food and release of energy is as similar to the other organisms.

Q3. Label the following parts in Figure 2.2 and name them.

(a) The largest gland in our body.

(b) The organ where protein digestion starts.

(c) The organ that releases digestive juice into the small intestine.

(d) The organ where bile juice gets stored.

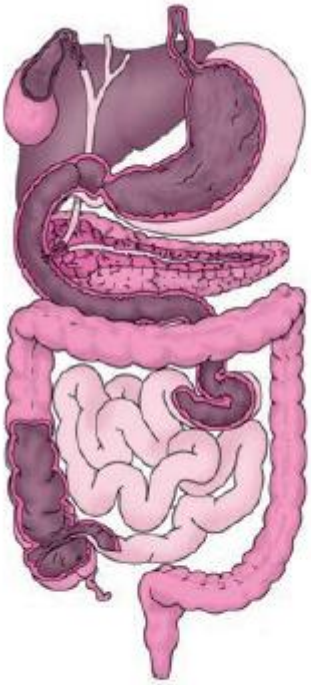


Fig. 2.2

Soln:

(a) Liver

(b) Stomach

(c) Pancreas

(d) Gallbladder