



CHAPTER : 2
NUTRITION IN ANIMALS

SOLUTIONS:

1. Fill in the blanks:-

(a) The main steps of nutrition are ingestion, digestion, absorption, assimilation and egestion.

(b) The largest gland in human body is liver.

(c) The stomach releases hydrochloric acid and digestive juices which act on food.

(d) The inner wall of the small intestine has many finger like outgrowths called villi.

e). *Amoeba* digests its food in the vacuole.

2. Mark 'T' if the statement is true and 'F' if it is false

(a) Digestion of starch starts in the stomach
Ans :- F

(b) The tongue helps in mixing food with saliva.
Ans:- T

(c) The gall bladder temporarily stores bile
Ans:- T

(d) The ruminants bring back swallowed grass into their mouth and chew it for sometime
Ans:- T

3. Tick the correct answer in each of the following :-

(a) Fat is completely digested in the

(i) stoma

(iii) small intestine

intestine Ans:- (iii) small intestine

(ii) mouth

(iv) large

(b) Water from the undigested food is absorbed mainly in the

(i) stomach

(ii) food pipe

(iii) small intestine

(iv) large

intestine Ans:- (iv) large intestine

4. Match the items of column I with those given in column II

Column I

Food components

Carbohydrates

Proteins

Fats

Column II

Products of digestion

Fatty acids and glycerol

Sugar

Amino acids

Ans:- Carbohydrates – Sugar

Proteins-Amino acids

Fats-- Glycerol

5. What are villi? What are their location and function?

Ans:- Villi are the finger – like outgrowths that are present on the inner wall of the small intestine. Villi are located in small intestine. Their functions is to absorb the digested food and transport to different organs through blood vessels.

6. Where is the bile produced? Which component of the food does it help to digest? Ans:- The bile is produced at the liver. It helps in the digestion of fats.

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

Ans:- The type of carbohydrate that can be digested by ruminants but not by humans is cellulose. Cellulose is digested by the action of certain bacteria which are present only in ruminants and not in humans.

8. Why do we get instant energy from glucose ?

Ans:- Glucose is a simple sugar which can be easily absorbed by the body into the blood. It does not have to be digested, therefore we get instant energy from glucose.

9. Which part of the digestive canal is involved in

(i) Absorption of food

Ans:- Small intestine

(ii) Chewing of food

Ans:- Buccal cavity

(iii) killing of bacteria

Ans:- Stomach

(iv) Complete digestion of food

Ans:- Small intestine

(v) Formation of faeces

Ans:- Large intestine

10. Write one similarity and one difference between the nutrition in *Amoeba* and human beings Ans:- Similarity

Both *Amoeba* and human beings derive nutrition from other organisms.

Difference

Human beings have complex digestive system with different organs while *Amoeba* does not have different organs and digestion is done in vacuole.

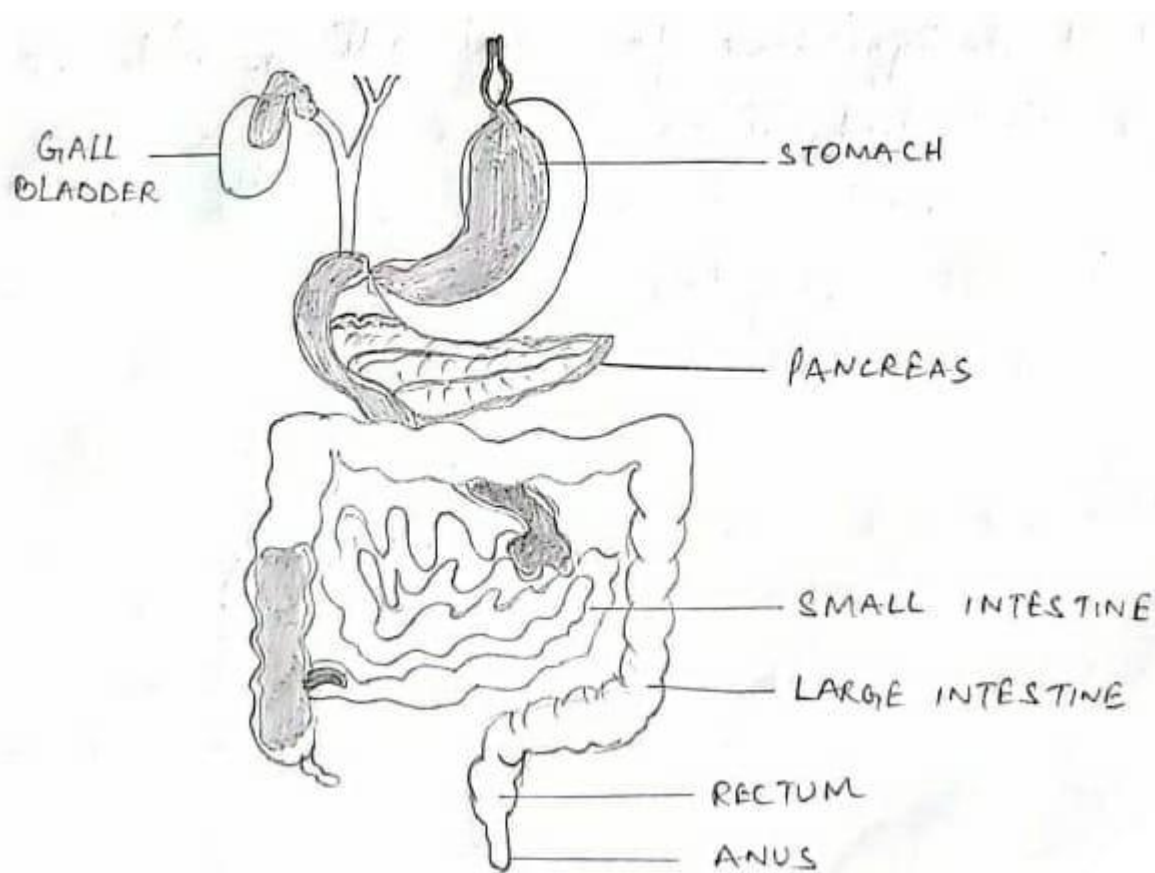
11. Match the items of Column I with suitable items in Column II

- Column I
- (a) Salivary gland
 - (b) Stomach
 - (c) Liver
 - (d) Rectum
 - (e) Small intestine
 - (f) large intestine

- Column II
- (i) Bile juice secretion
 - (ii) Storage of undigested food
 - (iii) Saliva secretion
 - (iv) Acid releases
 - (v) Digestion is completed
 - (vi) Absorption of water
 - (vii) Release of faeces

Ans:- (a) Salivary gland -- Saliva secretion
(b) Stomach -- Acid releases
(c) Liver -- Bile juice secretion
(d) Rectum -- Release of faeces
(e) Small intestine -- Digestion is completed
(f) large intestine -- Storage of undigested food,

12. Label fig 2.11 of the digestive system



13. Can we survive only on raw, leafy vegetables / grass ? Discuss.

Ans:- No, we cannot survive only on raw, leafy vegetables or grass because grass is rich in cellulose which humans are unable to digest due to the absence of some bacteria that can break down cellulose.

EXTRA QUESTIONS AND ANSWERS

1. What are the different modes of feeding found in (a) Snail (b) Ant (c) Eagle (d)

Humming bird Ans:-

ANIMAL	KIND OF FOOD	MODE OF FEEDING
Snail	Leaves and insects	scraping
Ant	Food particles	chewing
Eagle	Small animals	Capturing and swallowing
Humming bird	Nectar of flower	Sucking

2. What is digestion?

Ans:- The breakdown of complex components of food into simpler substances is called digestion.

3. What are the different parts of digestive system in human?

Ans:- The different parts of digestive system in human are (i) Mouth or buccal cavity (ii) Food pipe or Oesophagus (iii) Stomach (iv) Small intestine (v) Large intestine (vi) Anus.

4. What are the main functions of

(a) Mouth (b) Oesophagus (c) Stomach (d) Small intestine (e) Large intestine (f) Anus

Ans:- (a) Mouth : Digestion starts at mouth by chewing and mixing with saliva to form smooth, rounded mass of food to pass easily to the oesophagus.

(b) Oesophagus : The movement of the wall of the oesophagus pushes the food down to the stomach.

(C) Stomach: Stomach secretes acid and enzymes to digest food.

(d) Small intestine : Absorption of the digested food takes place at the small intestine. This is done with the help of villi which are found on the inner wall of the small intestine.

(e) Large intestine : The undigested food material is absorbed by the large intestine and remains here as semi solid faeces.

(f) Anus : The faecal matter is removed through the anus.

5. What is absorption ?

Ans:- The passing of the digested food into the blood vessels in the wall of the intestines is called absorption.

6. What is assimilation?

Ans:- After the absorption of food by the small intestine , it is stored or utilised in different cells. This is called assimilation.

7. Write three functions of the

tongue. Ans:- i) We use tongue for talking.

ii) Tongue mixes saliva with the food during chewing and helps in swallowing food. Iii) The tongue has taste buds that detects different tastes of food.

8. How many types of teeth are there in human beings? Name them.

Ans:- There are four types of teeth in human beings. They are i) Incisor (ii) Canine (iii) Premolar (iv) Molar

9. What are the functions of the different types of teeth? Ans:- The functions of the different types of teeth are :-

- a) Incisors – cutting and biting
- b) Canines – piercing and tearing
- c) Premolars and molars – chewing and grinding.

10. How many teeth are present in an adult human being? What are the different types and number?

Ans:- There are 32 teeth in total in an adult human being. They are :-

Types of teeth	Upper Jaw	Lower Jaw
Molars	6	6
Premolars	4	4
Canines	2	2
Incisors	4	4

11. Give the function of the following:-

- (a) Saliva
(c) Bile juice

- (b) Hydrochloric acid
(d) Pancreatic juice

Ans:-

		Location	Functions
(a)	Saliva	Mouth	Digestion of starch into sugar
(b)	Hydrochloric acid	Stomach	Kills bacteria
(c)	Bile juice	Small intestine	Digestion of fats
(d)	Pancreatic juice	Pancreas	Digestion of carbohydrates, fats and proteins

12. Explain the process of digestion in different parts of digestive system. Ans:- The process of digestion in different parts of digestive system :-

(1) MOUTH AND BUCCAL CAVITY

The food is taken into the body through mouth. The food is chewed and ground with the help of teeth. It is mixed with saliva which breaks down the starch into sugars.

(2) FOOD PIPE OR OESOPHAGUS

The swallowed food passes into the food pipe or oesophagus. The movement of the wall of the food pipe pushes the food down to stomach

(3) STOMACH

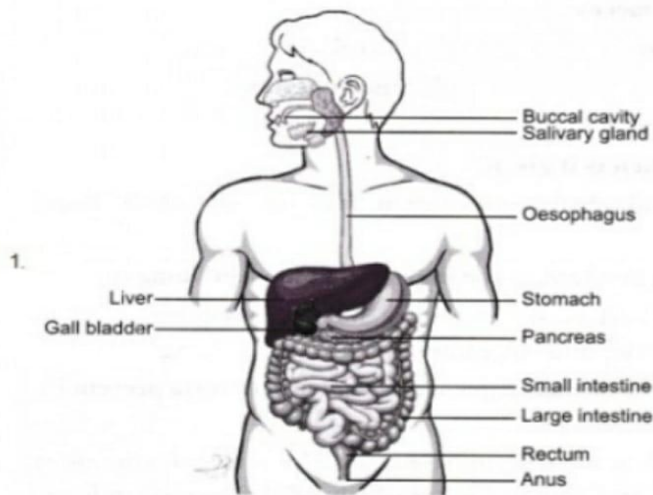
The stomach is a thick-walled bag. It receives food from the food pipe at one end and opens into the small intestine at the other. The acid present in the stomach kills the bacteria that enters along with the food. The digestive juices break down the proteins into simpler substances.

(4) SMALL INTESTINE

The partly digested food from the stomach reaches to the small intestine. Here, digestion is completed with the help of secretions received from the liver, pancreas and the small intestine itself. The carbohydrates are broken down into glucose, fats into fatty acids and glycerol and proteins into amino acids.

(5) LARGE INTESTINE

The large intestine absorbs water and some salts from the undigested food material. The remaining waste passes into the rectum and is removed through the anus from time to time.



13. what are ruminants?

Ans:- Grazing animals like cows, buffaloes and deer are known as ruminants.

14. What is rumination?

Ans:-The ruminants quickly ingest , swallow their leafy food and store in a part of the stomach called rumen. Later the food returns to the mouth and they chew it. This process is called rumination.

15. How does digestion take place in *Amoeba*?

Ans:- *Amoeba* ingests its food with the help of its false feet called pseudopodia. The food is digested in the food vacuole.

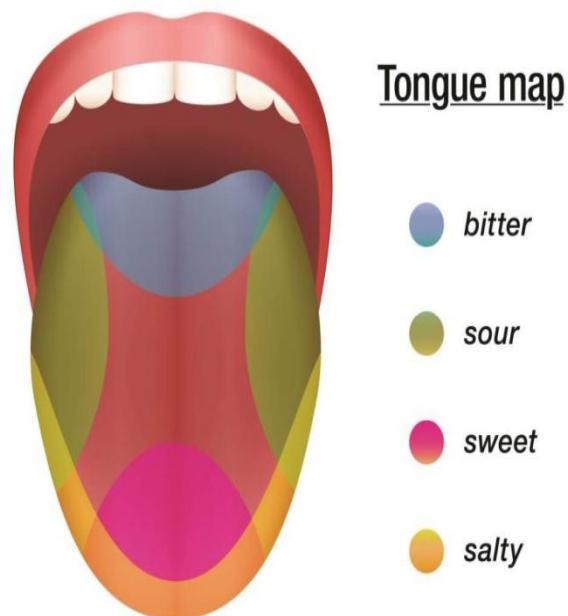
16. What are pseudopodia?

Ans:- Pseudopodia are finger like projections used for movement and capturing of food by *Amoeba*.



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17. Draw the different regions of the tongue for different tastes.



18. Draw and labelled the different types of teeth.

Ans:-

