Science

(Chapter – 2) (Nutrition in Animals)

(Class – VII)

Exercises

Question 1:

Fill in the blanks:

(a) The main steps of nutrition in humans are _____, _____, _____, _____ and _____.

(b) The largest gland in the human body is _____.

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

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

(e) Amoeba digests its food in the _____.

Answer 1:

(a) The main steps of nutrition in humans are ***ingestion***, ***digestion***, ***absorption***, ***assimilation*** and ***egestion***.
(b) The largest gland in the 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 ***food vacuole***.

Question 2:

Mark (T) if the statement is true and (F) if it is false:

(a) Digestion of starch starts in the stomach. (T/F)

(b) The tongue helps in mixing food with saliva. (T/F)

(c) The gall bladder temporarily stores bile. (T/F)

(d) The ruminants bring back swallowed grass into their mouth and chew it for some time. (T/F)

Answer 2:

(a) Digestion of starch starts in the stomach. (**False**)

(b) The tongue helps in mixing food with saliva. (**True**)

(c) The gall bladder temporarily stores bile. (**True**)

(d) The ruminants bring back swallowed grass into their mouth and chew it for some time. (**True**)

Question 3:

Tick (√) mark the correct answer in each of the following:

(a) Fat is completely digested in the

(i) stomach (ii) mouth (iii) small intestine (iv) large intestine

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

(i) stomach (ii) food pipe (iii) small intestine (iv) large intestine

Answer 3:

(a) Fat is completely digested in the (iii) small intestine √

(b) Water from the undigested food is absorbed mainly in the (iv) large intestine √

Question 4:

Match the items of Column I with those given in Column II:

Column I	**Column II**
Food components	*Product(s) of digestion*
Carbohydrates	Fatty acids and glycerol
Proteins	Sugar
Fats	Amino acids

Answer 4:

Column I	**Column II**
Food components	*Product(s) of digestion*
Carbohydrates	Sugar
Proteins	Amino acids
Fats	Fatty acids and glycerol

Question 5:

What are villi? What is their location and function?

Answer 5:

The inner walls of the small intestine have thousands of finger-like outgrowths. These are called villi (singular villus).

The villi increase the surface area for absorption of the digested food. Each villus has a network of thin and small blood vessels close to its surface. The surface of the villi absorbs the digested food materials.

Question 6:

Where is the bile produced? Which component of the food does it help to digest?

Answer 6:

Liver (the largest gland in human body) secretes bile juice that is stored in a sac called the gall bladder.
The bile helps in the digestion of fats.

Question 7:

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

Answer 7:

Cellulose (a type of carbohydrate) can be digested by ruminants but not by humans because ruminants have a large sac-like structure called rumen between the oesophagus and the small intestine. The cellulose of the food is digested here by the action of certain bacteria which are not present in humans.

Question 8:

Why do we get instant energy from glucose?

Answer 8:

In the cells, glucose breaks down with the help of oxygen into carbon dioxide and water, and energy is released.

Question 9:

Which part of the digestive canal is involved in:
(i) absorption of food _____.
(ii) chewing of food _____.
(iii) killing of bacteria _____.
(iv) complete digestion of food _____.
(v) formation of faeces _____.

Answer 9:

(i) absorption of food ***small intestine***.
(ii) chewing of food ***buccal cavity (Mouth).***
(iii) killing of bacteria ***stomach***.
(iv) complete digestion of food ***small intestine***.
(v) formation of faeces ***large intestine***.

Question 10:

Write one similarity and one difference between the nutrition in amoeba and human beings.

Answer 10:

- *Similarity:* The basic process of digestion of food and release of energy is the same in amoeba as well as in human beings. In amoeba, Digestive juices are secreted into the food vacuole. They act on the food and break it down into simpler substances. Gradually the digested food is absorbed. Similarly, in human beings various digestive juices (mouth, stomach, intestine etc.) act on food and break it down to simpler substances.
- *Difference:* The digestion process in amoeba is simple while in human beings it is a complex process. The process of ingestion and egestion are also quite different. Amoeba engulf its food by surrounding the food particle with its pseudopodia. The undigested food which is largely carbon dioxide gas is expelled outside by the vacuole. While in human beings, the food (which is complex substance) is taken inside the mouth and undergoes a complex process of digestion and absorption. Finally the undigested food it expelled in the form of faeces.

Question 11:

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

Column I	**Column II**
(a) Salivary gland	(i) Bile juice secretion
(b) Stomach	(ii) Storage of undigested food
(c) Liver	(iii) Saliva secretion
(d) Rectum	(iv) Acid release
(e) Small intestine	(v) Digestion is completed
(f) Large intestine	(vi) Absorption of water
	(vii) Release of faeces

Answer 11:

Column I	**Column II**
(a) Salivary gland	(iii) Saliva secretion
(b) Stomach	(iv) Acid release
(c) Liver	(i) Bile juice secretion
(d) Rectum	(vii) Release of faeces
(e) Small intestine	(v) Digestion is completed
(f) Large intestine	(vi) Absorption of water, (ii) Storage of undigested food

Question 12:

Label Fig. 2.11 of the digestive system.

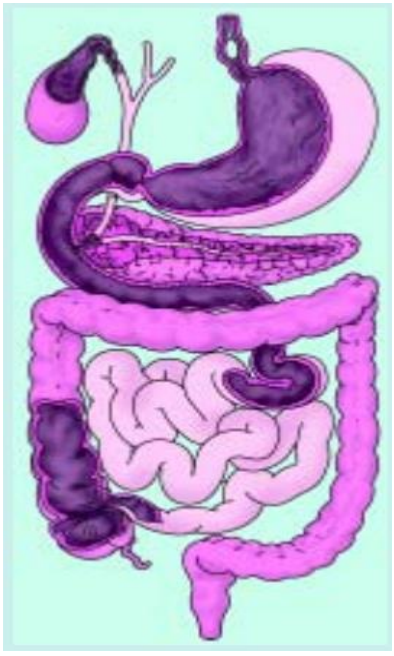
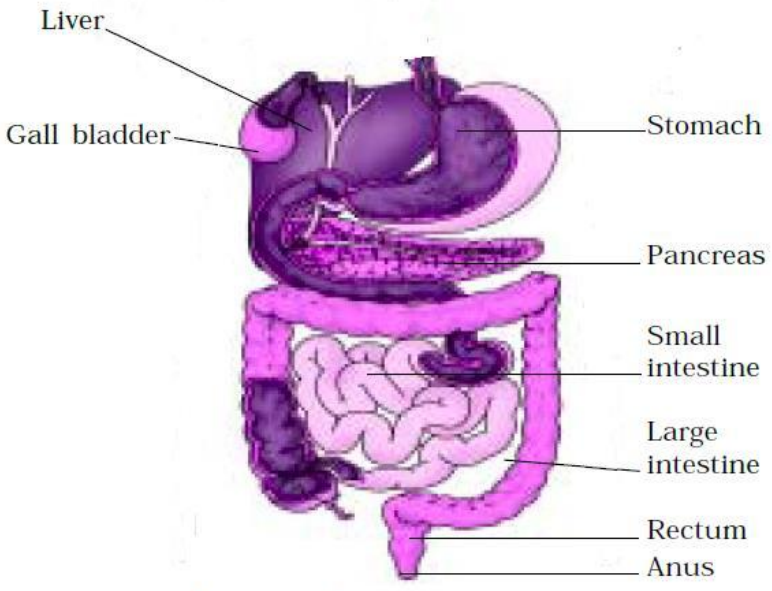


Fig. 2.11 A part of human digestive system

Answer 12:



Human digestive system

Question 13:

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

Answer 13:

Raw leafy vegetables and grass are rich in cellulose, a type of carbohydrate. Many animals, including humans, cannot digest cellulose, because they do not have enzymes and certain type of bacteria which can digest cellulose. We cannot survive by taking vegetables in raw form. That's why we boil or cook vegetables which breaks down cellulose into simple carbohydrates. We can only survive by taking in vegetables in boiled/cooked form.