Q1. Which of the following pair of teeth differ in structure but are similar in function?

(a) canines and incisors.

(b) molars and premolars.

(c) incisors and molars.

(d) premolars and canines.

Answer: (b) molars and premolars.

Explanation: Our teeth tear and grind the food before swallowing food. There are four types of teeth.

Incisors: front eight teeth, 4 in the upper jaw and 4 in the lower jaw.

Canines: There are 4 canines, one on each side of each jaw.

Premolars: There are 8 premolars. Two premolars in each of the upper and lower jaws.

Molars: There are 12 molars, three in each half of both upper and lower jaws.

Q2. The false feet of Amoeba are used for

(a) movement only.

(b) the capture of food only.

(c) the capture of food and movement.

(d) exchange of gases only.

Answer: (c) capture of food and movement.

Explanation: Amoeba constantly changes their shape and position. It pushes out one, or more finger-like projections, called pseudopodia or false feet, for movement and capture of food. Amoeba feeds on some microscopic organisms. When it senses food, it pushes out pseudopodia around the food particle and engulfs it.

Q3. 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.

Q4. 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.

Q5. Mark the following statements as True or False. If false, write the correct statements.

(a) Tongue is attached to the roof of the mouth cavity at the back.

(b) The large intestine is longer and wider than the small intestine of the human alimentary canal.

(c) Mucus protects the stomach lining from damage.

(d) All heterotrophs have a similar basic process of nutrition.

Answer:

False – The tongue is attached to the floor of the mouth cavity at the back.

False – The large intestine is shorter and wider than the small intestine of the human alimentary canal.

True

True

Q6. The component of food which is complex is
(a) protein
(b) carbohydrate
(c) fat
(d) all of these

Answer: (d) all of these

Q7. The breakdown of complex components of food into simpler substances is called
(a) ingestion
(b) egestion
(c) assimilation
(d) digestion

Answer: (d) digestion

Q8. The digestive tract and the associated glands together constitute the
(a) digestive system
(b) oesophagus
(c) alimentary canal
(d) nutrition system

Answer: Digestive System

Q9. What role does hydrochloric acid play in the stomach?

a) It breaks down fats

b) It kills bacteria

c) It digests proteins

d) It absorbs vitamins

Answer: b) It kills bacteria

Q10. What initiates the digestion of starch?

a) Gastric juices

b) Bile

c) Pancreatic juice

d) Saliva

Answer: d) Saliva

Q11. Label the below-given Figure 2.1 as directed below in (i) to (iv) and give the name of each type of teeth.

Fig. 2.1

(i) The cutting and biting teeth as 'A'

(ii) The piercing and tearing teeth as 'B'

(iii) The grinding and chewing teeth as 'C'

(iv) The grinding teeth present only in adults as 'D'

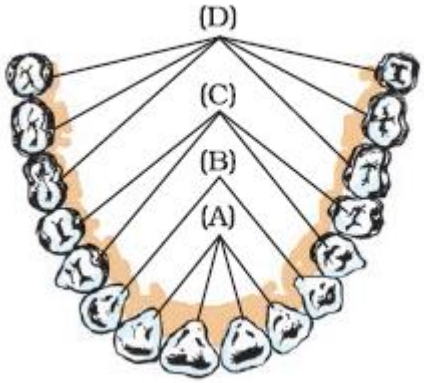
Answer:

A. Incisors

B. Canines

C. Premolars

D. Molars



Q12. 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:

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

Q13. Write one similarity and one difference between the nutrition of Amoeba and human beings.

Answer. The below table shows the similarity and differences in nutrition in Amoeba and human beings.

Amoeba	Human beings
Heterotrophic mode of nutrition	Heterotrophic mode of nutrition
Simple digestive system, where food is digested in food vacuole	Complex digestive system, where food is digested in separate parts of the body

Q13.**Explain how is small intestine designed to absorb digested food.**

Answer: The finger-like projections called villi are present in the inner walls of the small intestine. The villi increase the surface area. The large surface area of small intestine helps in the rapid absorption of the digested food.

Q14. Briefly explain, why animals like cow cannot chew their food properly at the time they take it in.

Answer: Animals like cow cannot chew their food properly due to the presence of cellulose in their diet. At the time they take in food, the food is moistened and is sent for cellulose digestion and softening in rumen.

Q15. Explain how assimilation is different from absorption.

Answer: The process by which nutrients from the digested food are absorbed by the body is called absorption whereas the process by which the absorbed nutrients are utilised by the body for providing energy is called assimilation

Q16. 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

Q17. Explain the process of nutrition in amoeba.

Answer: The process of nutrition in amoeba is done through holozoic nutrition and the process is called phagocytosis.

Ingestion: Amoeba moves closer to its food with the help of pseudopodia and encircles it forming a food vacuole to engulf the food.

Digestion: The food is then digested using digestive enzymes present in the lysosomes.

Absorption and assimilation: The digested food is absorbed by the cytoplasm and the energy thus produced from the food is used to perform different life processes.

Egestion: To excrete the undigested food, an amoeba ruptures its cell wall and releases it out of the cell.

Q18. Explain the process of digestion and absorption in the small intestine.

Answer: The process of digestion as well as absorption in small intestine is as follows:

Digestion: Digestion in the small intestine is accomplished by the action of digestive juices from the liver, pancreas and small intestine. The bile juice secreted by the liver helps in the digestion of fats, breaking down the big fat droplets into smaller droplets. It does not contain any enzymes. Pancreatic juice secreted by the pancreas contains enzymes for the digestion of carbohydrates, proteins and lipids. Pancreatic amylase helps in the digestion of carbohydrates while trypsin helps in the digestion of proteins. The enzymes of the intestinal juice eventually break down carbohydrates, proteins and lipids into their simplest components such as glucose, amino acids, fatty acids and glycerol etc.

Absorption: Absorption takes place through the walls of the intestine that are lined with finger-like projections known as villi. These villi improve the surface area available for nutritional absorption. The villi contain blood vessels and hence the digested food is absorbed directly into the bloodstream

Q19. Explain the importance of rumen in ruminants.

Answer: Rumen is a part of the stomach in grass-eating animals. It stores the food that the ruminant reproduces, chews again and swallows a second time. Specific bacteria

found in the rumen aid in the digestion of cellulose. Ruminants can chew their ruminants for hours every day. The rumen contains many small organisms that aid in the digestion of food such as grass whose cell walls cannot be easily digested by other animals. Cud, or partially digested food, is then reintroduced into the mouth for easier chewing. This process of cud-chewing even when the animal is not eating is called rumination. The rumen ferments this food through the formation of gas, which must be expelled by belching to prevent bloating.

Q20. Explain how the digestion of cellulose occurs in grass eating animals.

Answer: Digestion in Grass-Eating Animals

The herbivorous animals such as cow, buffaloes, etc eat grass. These animals quickly swallow the grass and store it in a part of stomach called rumen. The food is not chewed completely. Rumen possess cellulose digesting bacteria which breakdown the food by fermentation. This partially digested food or grass present in the rumen of cow is called cud.

This cud is brought back into the mouth of the cow from the rumen into small lumps and animal chews it again. This process is called rumination and animals are called ruminants.

When this cud is thoroughly chewed in the mouth of the cow, it is swallowed again. This time the chewed cud does not go back to rumen but enter into the other compartments of cow's stomach and then into the small intestine for complete digestion and absorption of food. The cellulose digesting bacteria are not present in the body of human being, therefore human beings and other carnivore cannot digest cellulose present in plant food items.