



INDIAN SCHOOL AL WADI AL KABIR



Class: VII	DEPARTMENT: SCIENCE 2022-2023	DATE: 14.08.2022
WORKSHEET NO: 4 With answers	TOPIC: NUTRITION IN ANIMALS	NOTE: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

I. VERY SHORT ANSWERS (1M):

1. What is animal nutrition?
[Hint: Animal nutrition includes nutrient requirement, mode of intake of food and its utilization in the body.]
2. Define digestion.
[Hint: Digestion is the breakdown of complex components of food into simpler substances.]
3. Mention the mode of feeding in i) Eagle ii) Butterfly
[Hint: i) Eagle – swallowing ii) Butterfly – sucking]
4. What constitute the digestive system in an organism?
[Hint: The digestive tract and the associated glands together constitute the digestive system.]
5. Name the glands associated with the alimentary canal.
[Hint: Salivary glands, liver and pancreas]
6. Mention the function of digestive juices.
[Hint: The digestive juices convert complex food substances into simpler ones.]
7. Name the largest gland in the body. What is its secretion?
[Hint: Liver; It secretes bile juice which is stored in a sac called Gall bladder.]
8. What is the function of bile?
[Hint: The bile plays an important role in the digestion of fats.]
9. What is the role of pseudopodium in the nutrition of amoeba?
[Hint: Pseudopodia are used by amoeba to capture its prey and also for the movement.]
10. How is energy released from the digested food?
[Hint: In the cells, glucose breaks down into carbon dioxide and water with the help of oxygen and energy is released.]

For the questions that follows, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below:

- i) Both A and R are true and R is the correct explanation of the assertion.**
- ii) Both A and R are true but R is not the correct explanation of the assertion.**
- iii) A is true but R is false.**
- iv) A is false but R is true.**

11. Assertion- Villi are present on the inner lining of stomach.

Reason- The villi increase the surface area for absorption of the digested food.

Ans: iv) A is false but R is true

12. Assertion- The process of digestion begins in the mouth.

Reason- The tongue mixes the food with saliva during chewing and helps in swallowing the food.

Ans: ii) Both A and R are true but R is not the correct explanation of the assertion.

13. Assertion- Ruminants can digest cellulose.

Reason-Ruminants have cellulose digesting bacteria in their stomach.

Ans: i) Both A and R are true and R is the correct explanation of the assertion.

II. PASSAGE BASED QUESTIONS:

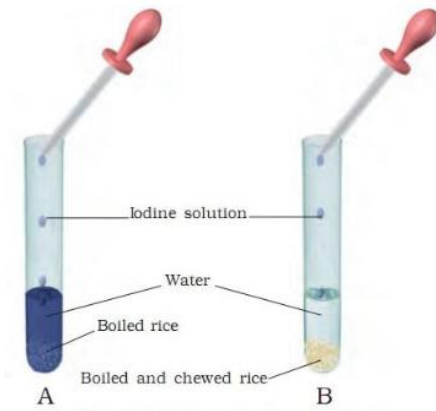
The inner walls of the small intestine have thousands of finger like outgrowths called villi. The villi increase the surface area for absorption of the digested food. Each villus has a network of thin and small blood vessels close to its surface. The surface of the villi absorbs the digested food materials. The absorbed substances are transported via the blood vessels to different organs of the body. In the cells, glucose breaks down with the help of oxygen into carbon dioxide and water and energy is released. The food that remains undigested and unabsorbed enters into the large intestine.

- i) The process by which digested food is passed into the blood is called
 - a) Ingestion
 - b) Digestion
 - c) Absorption**
 - d) Egestion
- ii) The energy from the absorbed nutrients is released into the
 - a) Villi
 - b) Blood vessels
 - c) Large intestine
 - d) Cells**

- iii) After digestion, the digested food is absorbed by blood while undigested food enters into the:
- Rectum.
 - Villi.
 - Small intestine.
 - Large intestine.**
- iv) What does a villus contain?
- Bones.
 - Network of blood vessels.**
 - Muscles.
 - Organ system.

III. CASE STUDY BASED QUESTIONS

1. Boojho took some grains of boiled rice in test tube 'A' and Paheli took boiled and chewed rice in test tube 'B'. Both of them poured 1 – 2 drops of iodine solution into the test tube and observed the colour change.



- i) The given activity demonstrates
- Test for fats
 - Test for proteins
 - Test for sugar
 - Effect of saliva on starch**
- ii) In the given activity, presence of starch is confirmed in
- Test tube A**
 - Test tube B
 - Both A and B
 - Neither A nor B
- iii) Identify the correct statement.
- Starch is converted to sugar in boiled rice.
 - Starch is converted to sugar in chewed rice.**
 - Blue black colour is obtained when Iodine is added to chewed rice.

- d) Blue black colour confirms the presence of saliva.
- iv) Starch is broken down into sugars by the action of:
- Iodine
 - Boiling of rice
 - Saliva
 - Water

2. You were blindfolded and asked to identify the drinks provided in two different glasses. You could identify drink A as lime juice and B as bitter gourd juice.

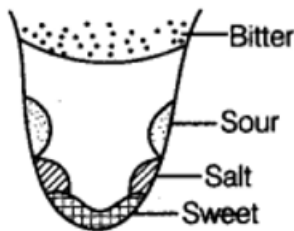
i) How could you do it in spite of being blindfolded?

[Hint: In spite of being blindfolded, one could identify two different drinks with the help of taste buds present in the tongue.]

ii) What is the function of taste buds?

[Hint: Taste buds can detect different tastes of food.]

iii) Draw a labelled diagram of tongue showing different regions of taste buds.



IV a) SHORT ANSWER TYPE QUESTIONS: (2M)

- Mention the parts of human digestive tract or alimentary canal.
[Hint: The alimentary canal can be divided into various compartments such as buccal cavity, oesophagus, stomach, small intestine, large intestine, rectum and anus]
- Differentiate between milk teeth and permanent teeth.
[Hint: The first set of teeth grows during infancy and they fall off at the age between six to eight years. These are termed as milk teeth. The second set that replaces the milk teeth are called the permanent teeth. The permanent teeth may last throughout life or fall off during old age.]
- State the functions of tongue.
[Hint: Tongue is used for talking. Besides, it mixes saliva with the food during chewing and helps in swallowing food. It has taste buds that detect different tastes of food.]
- What is the function of caecum in animals like horses and rabbits?
[Hint: Animals like horses and rabbits have a large sac like structure called caecum where cellulose is digested with the help of cellulose digesting bacteria.]
- What are the simple forms of carbohydrates, fats and proteins obtained after digestion?
[Hint: When digestion is completed, carbohydrates get broken into glucose, fats into fatty acids and glycerol and proteins into amino acids.]

6. Boojho and Paheli were eating their food hurriedly so that they could go out and play during the recess. Suddenly, Boojho started coughing violently. Think of the reasons why was he coughing?

[Hint: Sometimes when we eat hurriedly, talk or laugh while eating, we may cough, get hiccups or choking sensation. During the act of swallowing, a flap- like valve closes the passage of windpipe and guides food into the food pipe. If, by chance, the food enters the wind pipe, coughing helps to clear it]

7. Cellulose rich food substances are good source of roughage in human beings. Justify.
[Hint: Cellulose rich food substances are good sources of roughage in human beings. It is because the cellulose digesting bacteria are not present in the body of human beings due to which human beings cannot digest cellulose which are present in plant foods.]

IV b) SHORT ANSWER TYPE QUESTIONS: (3M)

1. What is ingestion? Mention the various modes of feeding in different animals. What is the mode of ingestion in humans?

[Hint: The process of taking food into the body is called ingestion. The various modes of feeding found in different animals are scraping, chewing, siphoning, capturing and swallowing, sponging and sucking. Humans chew the food with teeth and break it down mechanically into small pieces.]

2. What happens if we do not clean our teeth after eating the food?

[Hint: If we do not clean our teeth and mouth after eating, many harmful bacteria also begin to live and grow in it. These bacteria break down the sugars present from the leftover food and release acids. The acids gradually damage the teeth. This is called tooth decay. If it is not treated in time, it causes severe toothache and in extreme cases results in tooth loss.]

3. How can we prevent tooth decay?

[Hint: One should clean the teeth with a brush or datun (neem twigs) and dental floss (a special strong thread which is moved between two teeth to take out trapped food particles) at least twice a day and rinse the mouth after every meal. Also, one should not put dirty fingers or any unwashed object in the mouth.]

4. What are villi? Where are they found? Mention its function in the process of digestion?

[Hint: The villi are finger-like outgrowths which are present on the inner walls of the small intestine. 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.]

5. What is diarrhoea? Why do we give ORS to patients suffering from diarrhoea?

[Hint: Diarrhoea is a condition in which a person passes watery stool frequently. It may be caused by an infection, food poisoning or indigestion. Under severe conditions it can be fatal. This is because of the excessive loss of water and salts from the body. Diarrhoea should not be neglected. Even before a doctor is consulted the patient should be given plenty of boiled and cooled water with a pinch of salt and sugar dissolved in it. This is called Oral Rehydration Solution (ORS).]

6. Describe the terms rumen, rumination and ruminants.

[Hint: The grass eating animals like cows quickly swallow the grass and store it in a part of stomach called rumen. Here food is partially digested and is called cud. But later the cud returns to mouth in small lumps and the animal chews it. This process is called rumination and these animals are called ruminants].

7. Explain the role of stomach in the process of digestion.

[Hint: The stomach stores food and serves as the mixer and grinder of food. The inner lining of stomach secretes digestive juice which consist of mucous, hydrochloric acid and enzymes. The mucous protects the lining of stomach. The hydrochloric acid kills the bacteria that enter along with the food and make the medium inside the stomach acidic. The enzymes break down proteins into simpler substances.]

V. LONG ANSWER TYPE QUESTIONS. (5M)

1. Explain the importance of various glands associated with digestion.

[Hint: a) Salivary glands

Salivary glands secrete saliva. Saliva helps in moistening the food for easy swallowing. It has enzymes which break down starch to simple sugars (Maltose).

b)Liver

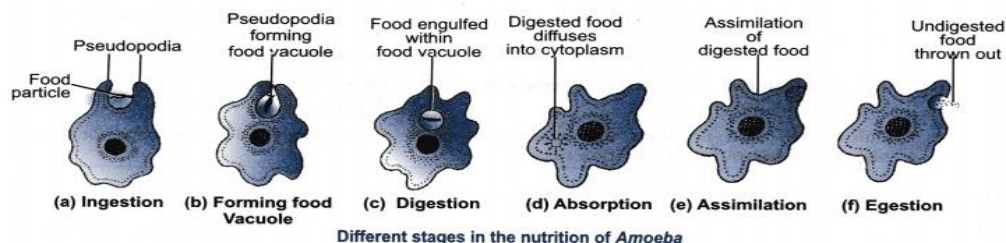
The liver is a reddish-brown gland situated in the upper part of the abdomen on the right side. It is the largest gland in the body. It secretes bile juice that is stored in a sac called the gall bladder. The bile plays an important role in the digestion of fats.

c)Pancreas

The pancreas is a large cream coloured gland located just below the stomach. The pancreas secretes pancreatic juice. The pancreatic juice acts on carbohydrates and proteins and changes them into simpler forms.

2. Explain the process of nutrition in amoeba with a neat labelled diagram.

[Hint: Amoeba feeds on some microscopic organisms. When it senses food, it pushes out pseudopodia around the food particle and engulfs it. The food becomes trapped in a food vacuole. Digestive juices are secreted into the food vacuole. They act on the food and break it down into simpler substances. Gradually, digested food is absorbed and used for growth, maintenance and multiplication.]



3. Describe different steps in the process of animal nutrition.

[Hint: Nutrition is a complex process involving

- a) Ingestion- It is the process of taking food into the body.
- b) Digestion – The breakdown of complex components of food into simpler substances.
- c) Absorption - The process by which nutrients from the digested food are absorbed by the body.
- d) Assimilation - The process by which the absorbed nutrients are utilised by the body for providing energy.
- e) Egestion - The process of removal of undigested food from the body of an organism.

4. Describe different types of teeth and state their functions.

[Hint: a) Incisors: There are eight incisors. Four in the upper jaw and four in the lower jaw. The incisors are well adapted for cutting and biting of food items.

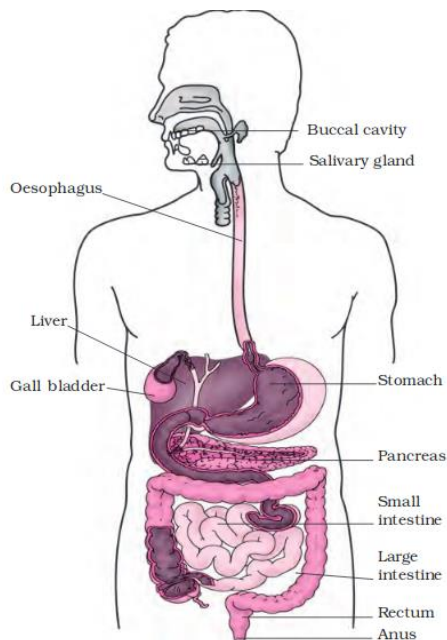
b) Canines: These are sharp and pointed teeth. Canines are well adapted to hold and tear the food. There are four canines found in humans.

c) Premolars: There are two premolars on each side of each jaw. Premolars help in crushing and grinding the food. There are 8 premolar teeth in an adult human.

d) Molars: There are three molars on each side in both the jaws. These teeth are meant for fine grinding of food. There are 12 molars in an adult human.]

5. a. Mention the parts of human digestive system with the help of a neat labelled diagram.

[Hint: The human digestive system consists of the alimentary canal and secretory glands. It consists of the (i) buccal cavity, (ii) oesophagus, (iii) stomach, (iv) small intestine, (v) large intestine ending in rectum and (vi) anus. The main digestive glands which secrete digestive juices are (i) the salivary glands, (ii) the liver and (iii) the pancreas. The stomach wall and the wall of the intestine also secrete digestive juices.]



b. Explain the process of digestion briefly.

[Hint: The digestion of carbohydrates like starch begins in the buccal cavity. The digestion of protein starts in the stomach. The bile secreted from the liver, the pancreatic juice from the pancreas and the digestive juice from the intestine wall complete the digestion of all components of food in the small intestine. The carbohydrates get broken up into simple sugars such as glucose, fats into fatty acids and glycerol, and proteins into amino acids. The digested food is absorbed in the blood vessels from the small intestine. The absorbed substances are transported to different parts of the body. Water and some salts are absorbed from the undigested food in the large intestine. The undigested and unabsorbed residues are expelled out of the body as faeces through the anus.

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