Worksheet 11 Subject: - Science Class: - VII Teacher: - Mrs. Harpreet Kaur

Name: _____ Class & Sec: _____ Roll No. _____ Date: 04.05.2020

Ch2: Nutrition in Animals

Visit this link: https://youtu.be/kK7IWjNYwxI

Q1. Define:-

a) Ruminants

b) Rumination

c) Cud

d) Villi

e) Rumen

Q2. Name the chambers of ruminants stomach.

Q3. Name the enzyme present in ruminants stomach to digest grass.

Q4. Draw the diagram of digestion in ruminants

Q5. Name the end products of fats, proteins, starch and vitamins and minerals after digestion.

Biology: Digestive System: Test Quiz

1) What is the main purpose of the digestive system?

- To fight off diseases
- To distribute energy throughout the body
- To be an instrument of communication between different parts of the body
- To break down food
- To regenerate cells

2) True or False: The digestive system is about 20 to 30 feet long.

- TRUE
- FALSE

3) What type of proteins does saliva have that helps break down starchy foods?

- Collagen
- Hemoglobin
- Enzymes
- Insulin
- Oxytocin

4) How does food travel from the mouth to the stomach?

- Food falls down the windpipe
- Throat muscles push food down the windpipe
- Food falls down the esophagus

- Throat Muscles push food down the esophagus
- The epiglottis flap releases and lets food inside the stomach

5) How many hours does food stay in the stomach?

- 1
- 2
- 4
- 12
- 24

6) True or False: The stomach is responsible for killing a lot of the bad bacteria in the food we eat.

- TRUE
- FALSE

7) The small intestine has fluids from which two organs to help continue to break down food?

- Heart and Lungs
- Stomach and Large Intestine
- Appendix and Kidneys
- Brain and Spinal Cord
- Liver and Pancreas

8) Where is the last stage of the digestive system?

- Small Intestine
- Gall Bladder
- Pancreas
- Kidneys
- Large Intestine

9) Where is bile from the liver stored?

- Small Intestine
- Gall Bladder
- Pancreas
- Kidneys
- Large Intestine

10) What type of molecules does bile break down?

- Carbohydrates
- Proteins
- Fats
- Nucleic Acids
- Simple Sugars

THE STORY OF THE STOMACH WITH A HOLE

How the working of the stomach was discovered makes an interesting story. On 6 June 1822, a man called Alexis St Martin was accidentally shot in the stomach. He was treated by an American doctor, William Beaumont. Martin survived but with a hole in his stomach that never completely healed. Dr Beaumont recognized this as a unique opportunity to observe digestive processes. He began to perform experiments on digestion using Martin's stomach.

The experiments were mainly conducted by inserting a piece of food tied to a string through the hole into Martin's stomach. Every few hours, Dr Beaumont would remove the food and observe how well it had been digested. He observed that the food was being churned in the stomach. Dr Beaumont also extracted a sample of gastric juices from Martin's stomach for analysis. He used it to 'digest' bits of food in cups. This led to the important discovery that the stomach juices digest the food into nutrients the body can use; in other words, digestion was primarily a chemical process and not a mechanical one.

The muscles in the small intestine mix food with more digestive juices. Some juices are secreted by the cells of the small intestine itself. Others come from the **liver**, which is the largest gland in the body, and the **pancreas** that is located just below the stomach.

The liver secretes **bile juice** which is stored in the **gall bladder**. The bile breaks up fats into tiny droplets that can be digested and absorbed more easily. The digestive juices then act on these tiny droplets to form simpler compounds known as fatty acids and glycerol. The pancreas secretes the **pancreatic juice** that changes starch into simple sugars, and proteins into simpler compounds called **amino acids**.

moves from the small intestine into a wide tube called the **large intestine**. Here, most of the water present in the waste is absorbed. The waste food which is now almost solid is stored in the last part of the large intestine called the **rectum**. It is then passed out of the body through the **anus**.

IT'S A FACT!

The small intestine is smaller in diameter but longer in length (about 7 metres) than the large intestine (about 1.5 metres).

IT'S A FACT!

Sometimes a food chunk may get into the trachea instead of the food pipe, leading to a bout of coughing. This is nature's way of removing the food chunk from the trachea. If this does not remove the food, the person can choke. A method called **Heimlich Manoeuvre** can stop the person from choking. It consists of giving a sudden thrust to the abdomen just below the rib cage. The thrust forces air out of the person's lungs and blows the food from the trachea. However, the manoeuvre should be learnt properly, since it can be dangerous if wrongly applied and can even break the ribs.

Fig. 2.7 Villi: small finger-like projections in the inner wall of the small intestine

Absorption in the small intestine

The digested food is then absorbed by the small intestine. Absorption of food occurs through thousands of small finger-like projections in the inner walls of the small intestine. These projections known as **villi** (singular: villus) increase the surface area of absorption of digested food (Fig. 2.7). Each villus has a network of fine blood capillaries close to the surface. The food absorbed on the surface of the villus passes into the blood in the capillaries.

IT'S A FACT!

During digestion, minerals and vitamins do not need to be changed. The cells are able to absorb them as they are.

Assimilation

The food absorbed into the blood is transported to different parts of the body. It is used to provide energy and materials for growth and repair of body tissues. This is the final stage in the process of digestion and is known as **assimilation**. Glucose is broken down in the cells with the help of oxygen into carbon dioxide and water, to provide energy. Amino acids are used for building and repairing of body parts. Fatty acids and glycerol are stored under the skin and act as energy reserves.

Egestion

Not all the food you eat is digested and absorbed. The food that cannot be digested

RUMINANTS

Ruminants are hooved, plant-eating animals that digest their food in two steps. Some examples are cows, buffaloes, goats, sheep and bison. They have complicated stomachs consisting of four chambers.

Food that is swallowed goes into the first chamber called the **rumen**. Here it is partially digested and is called **cud**. It then goes to the second chamber from where it is returned to the mouth for thorough chewing. This process is called **rumination**. That is why these animals are called **ruminants**. After chewing, the food is swallowed for a second time and then digested further in the remaining chambers. It is finally sent to the small intestine, where the absorption of the nutrients occurs.

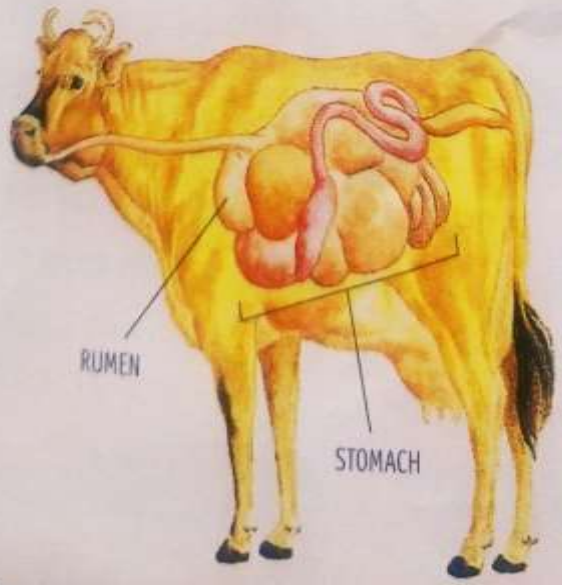

Fig. 2.8 A cow