

Nutrition in Animals:

NOTES

Animal nutrition :- Animal nutrition is a process of taking food by an organism and its digestion, absorption and utilisation in the body.

Different steps in the process of animal nutrition:-

⇒ There are five main steps in the process of nutrition in animals :-

1- Ingestion

2- Digestion

3- Absorption

4- Assimilation

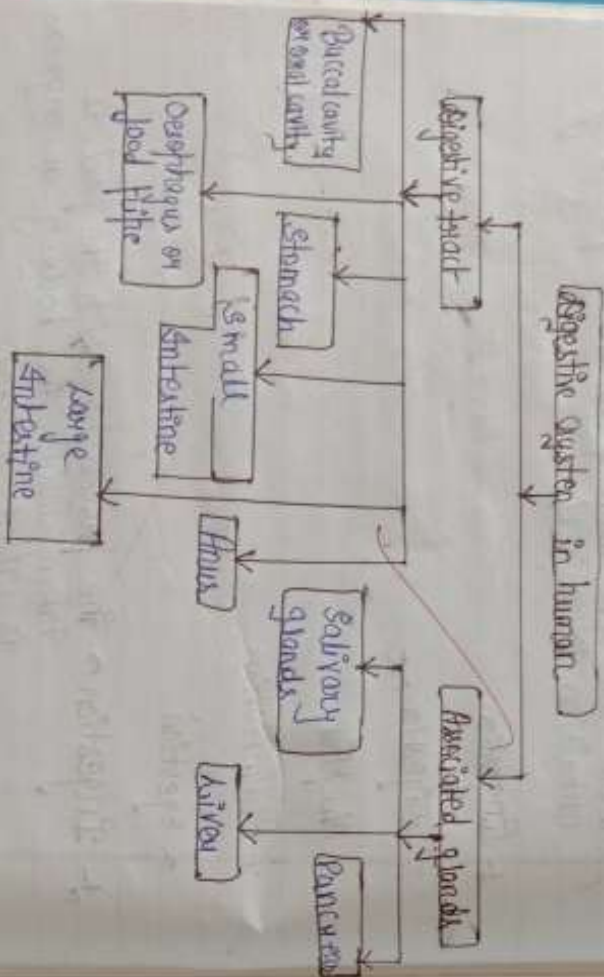
5- Egestion.

1- Ingestion ⇒ The process by which the food is taken inside the body of an organism is called ingestion.

2- Digestion ⇒ The breakdown of complex, insoluble food substances into simple, soluble food substances with the



Nutrition in human



help of digestive juices prepared by the body is called digestion.

3- Absorption → The process in which the simple, soluble digestion food substance are absorbed into the blood is called absorption.

4- Assimilation → The simple, soluble absorbed food substance are transported to the different parts of the body where they are utilised for energy, growth and repair. This process is called assimilation.

5- Egestion → The process in which the undigested food is removed from the body is called egestion.

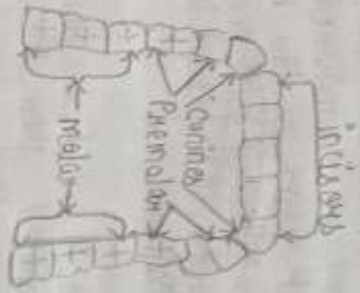
Nutrition in human :-

Alimentary canal :- The alimentary canal begins at the buccal cavity and ends at the anus.

The alimentary canal consists of following organs:-

- 1- Buccal cavity or oral cavity.
- 2- Oesophagus or food pipe.
- 3- Stomach.





4. Small intestine.

5. Large intestine ending at the rectum.

6. Anus.

1. Buccal cavity :- Mouth, the food goes into the buccal cavity of oral cavity. The buccal cavity contains teeth, tongue and salivary glands.

(a) Teeth :- The teeth break the food into small pieces, chew and grind it. Chewing mixes the small pieces of food with saliva.

ii) Incisors -> (Cutting teeth) :- These are four flat and blade-like teeth present in the front part of each jaw. These teeth are used to bite and cut the food into small pieces.

iii) Canines -> (Tearing teeth) :- The one present on the either side of the incisors. There are two in each jaw. These are sharp and pointed and help in tearing the food.

iv) Premolars -> (Grinding teeth) :- There are two premolars next to each canine (four in no. in each jaw). These have broad and flat grinding

surfaces. They grind the food and break it into small pieces.

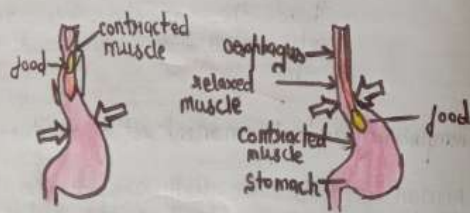
iv) Molars $\Rightarrow$ (grinding teeth) :- The remaining teeth in the jaws are three molars on either side of premolars (six in no. in each jaw). These teeth also have broad and flat grinding surfaces. These teeth are larger than the premolar. These teeth are also used to crush and grind the food.

Temporary and permanent set of teeth :- In

human begins, the teeth grow twice. The temporary set of teeth grow when the child is the age growth of 6 months to 8 years. This set of teeth is called milk teeth. These teeth are smaller and weaker. These are 20 in number: 10 in the upper jaw (4 incisors, 2 canines and 4 molars) and 10 in the lower jaw. Teeth grow again after the milk teeth fall out. The second set of teeth is called permanent teeth. These are total 32 teeth.

(b) Tongue :- The tongue is a fleshy muscular organ attached at the back to the floor of the buccal cavity. It has several taste buds that can distinguish four types of tastes in





Food - salty, sour, bitter and sweet. The tongue also helps us to speak.

(c) Salivary gland:- The salivary glands produce saliva. The saliva contains an enzyme (a substance that helps chemical change happen more quickly) called amylase.

2. Pharynx and Oesophagus:- The chewed food is pushed into a long and narrow muscular tube called the food pipe or oesophagus through another short muscular tube called the pharynx.

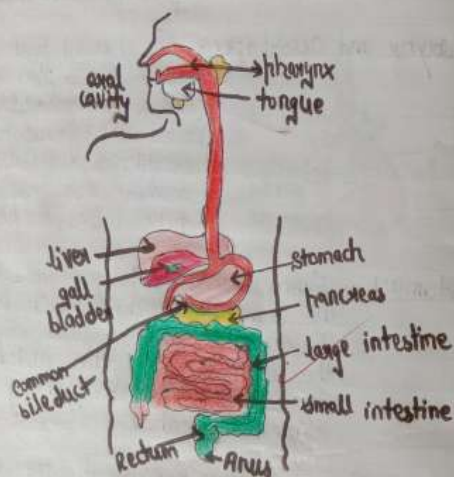
3. Stomach:- From the oesophagus, food goes into the stomach. The stomach is J-shaped, thick-walled organ on the left side of the abdomen. It is the widest part of the alimentary canal.

4. Intestinal juices:- The partially digested food gets mixed with pancreatic juice, bile juice and intestinal juices.

(a) 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.



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(b) Pancreas:- The pancreas is a large cream-coloured gland located just below the stomach. It secretes pancreatic juice and releases it into the intestine.

Absorption in the small intestine:- The process of absorption occurs in the small intestine. The inner wall of the small intestine has millions of finger-like projections or folds called villi (singular: villus). Each villus has a network of thin and small blood vessels called capillaries.

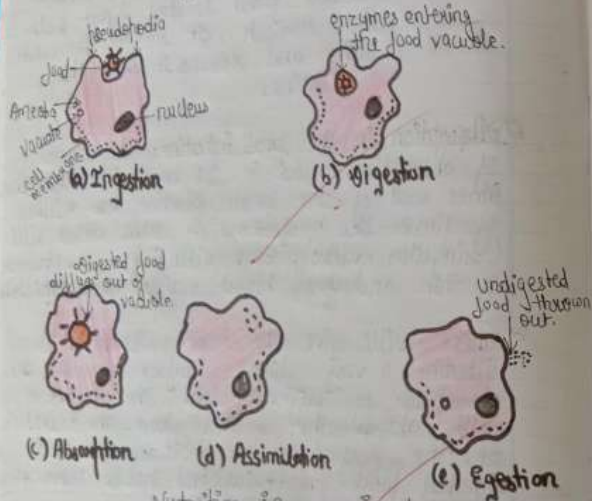
These villi give the inner walls of the small intestine a very large surface area for the absorption of digested food. The surface of villi absorb the digested food. The surface of the villi absorb the digested food material and passes them to the fine blood capillaries.

Assimilation of food:- Blood carries the absorbed digested food from the small intestine to different organs of the body. The digested food is used to build complex substances such as proteins, required for the growth and repair of body tissues. This is final stage in the process of digested and is known as assimilation or anabolism .

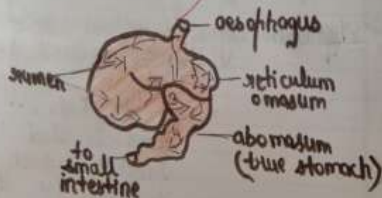


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Nutrition in Amoeba:-



Nutrition in ruminants:-



Nutrition in amoeba:- Amoeba is a microscopic single-celled organism found in ponds, pools and ditches. It constantly changes its shape by pushing out one or more finger-like projection called pseudopodia.

Nutrition in ruminants:-

1. Rumen
2. Reticulum
3. Omasum
4. Abomasum

The food that is swallowed goes into the first and the largest chamber, the rumen. The partially digested food goes to the second chamber or the reticulum from where it is returned to the mouth for thorough chewing. It now, bypasses the first two chambers and enters the third and the smallest chamber, the omasum. The food enters the fourth chamber or the abomasum.

Q. Short answer type-2 Question:-

Q. What is mechanical digestion?

Ans. The digestion of food in buccal cavity is known as mechanical digestion.

Q. What is chyme?



~~Ans:~~ Consequently, the food gets converted into partially digested, semi-solid food called chyme.

Q. All the questions: In notes.

F. Short Answer type - II Question:-

~~Q. Why cannot we breathe and swallow food in the same time?~~

~~Ans:~~ We cannot breathe and swallow at the same time because if we breathe will take our food along with it inside the lungs and this would almost certainly lead to a horrific, suffocating, painful death.

~~Q. In what substances carbohydrates, proteins and fats get converted into after digestion?~~

~~Ans:~~ Carbohydrates are converted into glucose, proteins are converted into amino acids and fats are converted into fatty acids and glycerol.

And the other question are: In notes.

~~Final~~
~~14/10/19~~

