

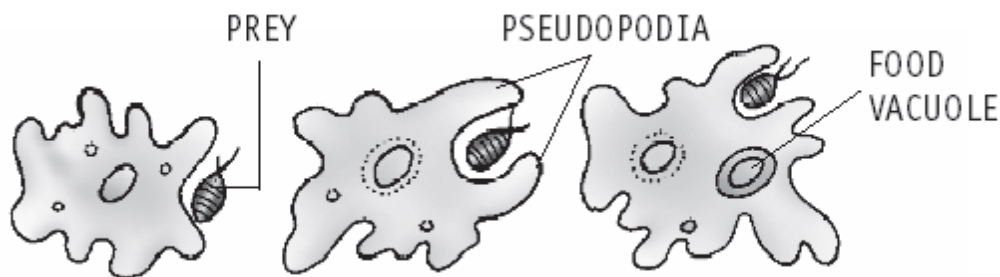
## NUTRITION IN ANIMALS

- C. 1. A frog uses its long sticky tongue to catch its prey.
  
2. A spider injects digestive juices into the body of the insect caught in a sticky web formed by the spider. This digests the body parts of the insect and the spider then sucks up the digested food.
  
3. The organs that make up the human alimentary canal are
  - (i) mouth,
  - (ii) food pipe or oesophagus,
  - (iii) stomach,
  - (iv) small intestine,
  - (v) large intestine,
  - (vi) rectum, and
  - (vii) anus.
  
4. Differences between milk teeth and permanent teeth are as follows.  
Milk teeth: The first set of teeth, 20 in number, grown in a child are milk teeth.  
Permanent teeth: Milk teeth fall off by the age of ten and are replaced by larger permanent teeth, 32 in number.
  
5. Saliva is a digestive juice. It is produced by three pairs of salivary glands in our mouth.
  
6. Taste buds detect all tastes – sweet, salty, sour and bitter.
  
7. Food stays in the stomach from a few minutes to a few hours depending on the type of food eaten.
  
8. The acid in the stomach kills bacteria present in the food and also helps in digestion of proteins.

D. 1. The various processes involved in nutrition in animals are as follows:

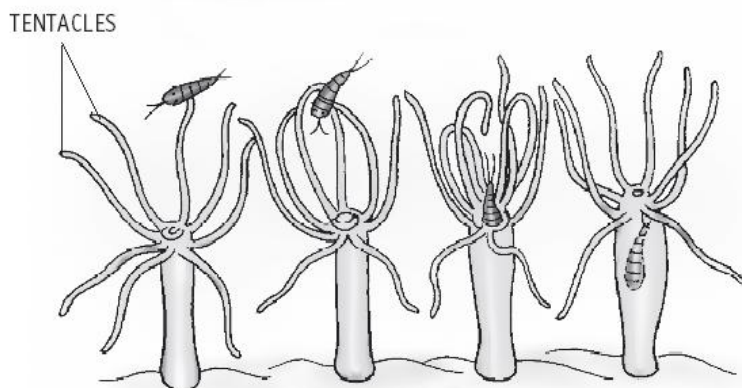
- (i) Ingestion: It is the process of taking in food through the mouth and eating it.
- (ii) Digestion: It is the process of breaking down of food into a simple, soluble form with the help of digestive juices in the body.
- (iii) Absorption: It is the process by which the food in the soluble form passes into the body fluids such as blood.
- (iv) Assimilation: It is the process of using the absorbed food to produce energy and for growth.
- (v) Egestion: It is the process of elimination of undigested solid parts of the food.

2. a. *Amoeba* engulfs tiny particles of food by throwing its false feet, known as pseudopodia around it. The pseudopodia join together to form a small cavity known as a food vacuole.



*Amoeba* uses its pseudopodia

b. *Hydra* has a number of tentacles around its mouth, which are used for ingestion of food. The tentacles entangle small aquatic animals and kill them with their stinging cells. They then push them into the mouth.

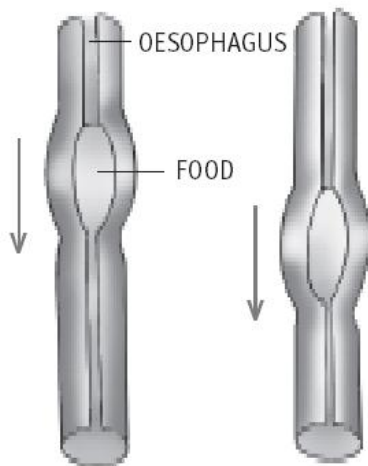


*Hydra* uses its tentacles

3. The four types of teeth in our mouth and their functions are:

- (i) Incisors (or biting teeth): are used for biting and cutting.
- (ii) Canines (or tearing teeth): are used for tearing pieces of food such as meat.
- (iii) Premolars (or crushing teeth): are used for crushing food like nuts.
- (iv) Molars (or grinding teeth): are used for grinding and chewing food.

4. The muscular movement of contraction and expansion to push food down in our oesophagus to our stomach in a wave-like action is called peristalsis.



5. a. The function of saliva: (i) It helps to break down starch of the food into sugars that are easier to digest

. (ii) It also makes food softer and easier to swallow by making it wet and slippery.

b. The function of bile juice: The bile breaks up fats into tiny droplets that can be digested and absorbed more easily.

c. The function of pancreatic juice: Pancreatic juice changes starch into simple sugars in small intestine and proteins into simpler compounds called amino acids.

6. a. Food in stomach: Stomach secretes mucous, hydrochloric acid and digestive juices. The acid kills bacteria that enter alongwith food and also helps in digestion of proteins. The digestive juices break down proteins to simpler substances. Thus, food gets partly digested in the stomach.

b. Food in small intestine: The muscles in the small intestine mix food with more digestive juices from its wall, some from liver (bile juice) and some from pancreas (pancreatic juice). Bile and digestive juice from intestinal wall together act on fats and break it into simplest form as fatty acids and glycerol. Pancreatic juice changes starch into simple sugars and proteins into simpler compounds called amino acids. Thus, digestion completes in small intestine and then it is absorbed by the intestinal wall.

7. The digested food is absorbed into thousands of small finger-like projections in the inner walls of small intestine. These projections called villi increase the surface area of absorption of digested food. Each villus has a network of fine blood capillaries close to the surface. So the food absorbed on the surface of the villus passes into the blood in the capillaries.

8. Process of digestion in ruminants: Ruminants have 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. Then it goes to the second chamber from where it is returned to the mouth for thorough chewing. This process is called rumination. After chewing, the food is swallowed for a second time and then digested further in the remaining chambers. Absorption of the nutrients is done in small intestine.