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Nutrition in Animals

Que 1. Fill in the blanks:

- (a) The main steps of nutrition in humans are ingestion, digestion, absorption, assimilation and egestion.
- (b) The largest gland in the human body is liver.
- (c) The stomach releases hydrochloric acid and digestive juices which act on food.
- (d) The inner wall of the small intestine has many finger-like outgrowths called villi.
- (e) Amoeba digests its food in the food vacuole.

Que 2. True or False:

- (a) Digestion of starch starts in the stomach. – **False**
- (b) The tongue helps in mixing food with saliva. – **True**
- (c) The gall bladder temporarily stores bile. – **True**
- (d) The ruminants bring back swallowed grass into their mouth and chew it for some time. – **True**

Que 3. Multiple Choice Questions:

- (a) Fat is completely digested in the
(i) stomach (ii) mouth (iii) **small intestine** (iv) large intestine
- (b) Water from the undigested food is absorbed mainly in the
(i) stomach (ii) food pipe (iii) small intestine (iv) **large intestine**

Que 4. Match the columns:

Column I	Column II
Food components	Product(s) of digestion
Carbohydrates	→ Fatty acids and glycerol
Proteins	→ Sugar
Fats	→ Amino acids

Que 5. What are villi? What is their location and function?

Answer: Villi are finger-like projections found on the inner walls of the small intestine. They increase the surface area for absorption of digested food. Each villus has a network of blood vessels to absorb nutrients and transport them throughout the body.

Que 6. Where is the bile produced? Which component of the food does it help to digest?

Answer: Bile is produced by the liver and stored in the gall bladder. It helps in the digestion of fats by breaking them down into smaller globules (emulsification).

Que 7. Name the type of carbohydrate that can be digested by ruminants but not by humans. Give the reason also.

Answer: The carbohydrate is cellulose. Ruminants can digest cellulose because they have special bacteria in their rumen that help break it down. Humans lack these bacteria.

Que 8. Why do we get instant energy from glucose?

Answer: Glucose is a simple sugar that is directly absorbed into the blood and quickly broken down in the cells to release energy. Therefore, it provides instant energy.

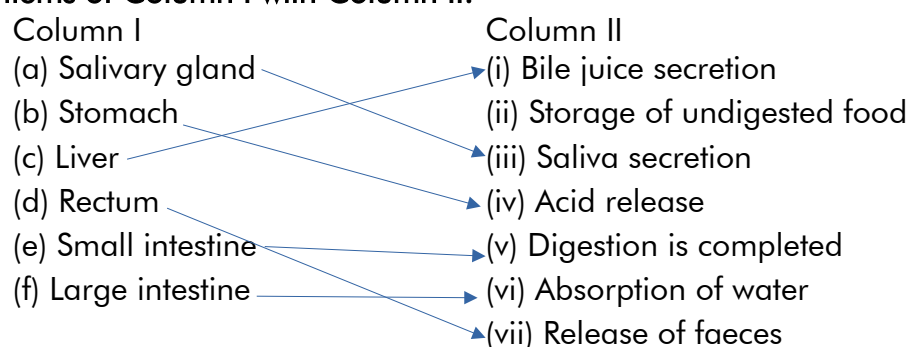
Que 9. Which part of the digestive canal is involved in:

- (i) absorption of food – Small intestine
- (ii) chewing of food – Buccal cavity
- (iii) killing of bacteria – Stomach
- (iv) complete digestion of food – Small intestine
- (v) formation of faeces – Large intestine

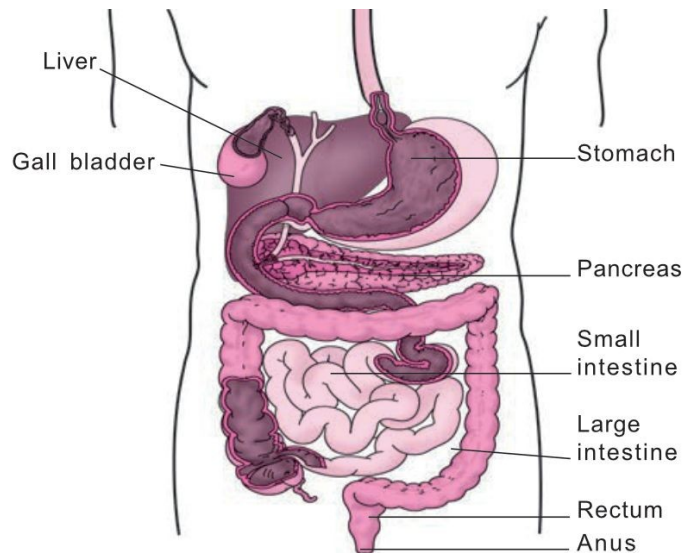
Que10. Write one similarity and one difference between the nutrition in amoeba and human beings.

Similarity: Both break down food into simpler substances using digestive juices.

Difference: Amoeba engulfs food with pseudopodia, while humans use specialized organs like mouth, stomach, and intestines.

Que 11. Match the items of Column I with Column II:

Que 12. Label the parts of digestive system.



Que 13. Can we survive only on raw, leafy vegetables/grass? Discuss.

Answer: No, humans cannot survive only on raw leafy vegetables or grass. These contain cellulose, which cannot be digested by humans due to the absence of cellulose-digesting bacteria. Also, such a diet lacks enough proteins and other nutrients required for growth and energy.

Activity-Based Questions

1. Visit a doctor and find out:

- (i) Under what conditions does a patient need to be on a drip of glucose?
- (ii) Till when does a patient need to be given glucose?
- (iii) How does glucose help the patient recover?

Answer:

Glucose Drip:

- (i) When is it needed? – When a patient is weak, dehydrated, or unable to eat.
- (ii) Till when is it given? – Until the patient can eat or drink normally.
- (iii) How it helps? – It gives quick energy and maintains body fluids.

2. Find out what vitamins are and get the following information.

- (i) Why are vitamins necessary in the diet?
- (ii) Which fruits or vegetables should be eaten regularly to get vitamins?

Answer:

Vitamins:

- (i) Why necessary? – For growth, immunity, and healthy functioning of the body.
- (ii) Sources:
 - Vitamin A – Carrot, spinach
 - Vitamin C – Lemon, orange
 - Vitamin D – Sunlight, milk
 - Vitamin E – Almonds