

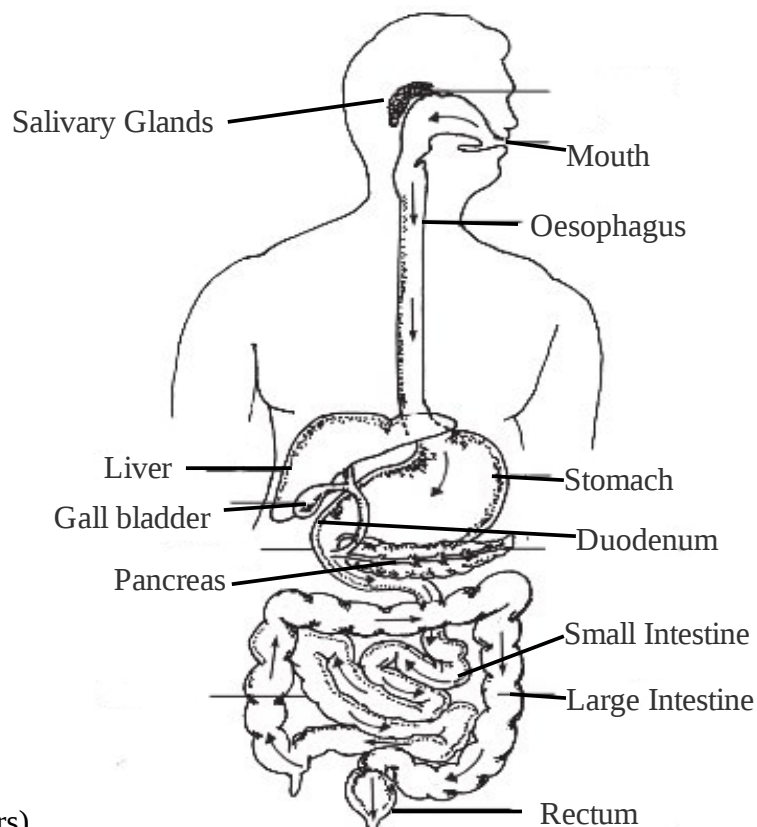
2. CHEMICAL CHANGES OF FOOD

- Why food ?
For obtaining energy, for growth and functioning of body.
- Nutrients ?

NUTRIENTS	EXAMPLE	CONTAINING FOOD
Carbohydrates [C, H, O] Mainly for energy and growth	-POLYSACCHARIDES [Starch, Cellulose, Glycogen] -MONOSACCHARIDES [Glucose, Fructose, Galactose] -DISACCHARIDES [Lactose(milk sugar), Sucrose (sugar), Maltose]	Rice & other grains, Root tubers, Fruits etc
Proteins [C, H, O, N] Mainly for growth	-Amino acids (simple proteins) -Enzymes - Hormones -Antibodies -Haemoglobin -Muscles etc.	Pulses, Meat, Fish, Milk etc.
Lipids [C, H, O] Mainly for energy	-Fatty acids & glycerol	Oil, Ghee, Butter etc.
Vitamins For physiological activities	-A, D, E, K -(fat soluble vitamins) -B complex, C -(water soluble vit.)	Leafy vegetables, Fruits, Liver etc.
Minerals For physiological activities	-Ca, P, Na, K -(essential elements) -Cu, Zn, Fe, I, Mg etc.	Milk, Egg, Meat, Sea food, vegetables etc
Water (70% of body wt)	-----	-----

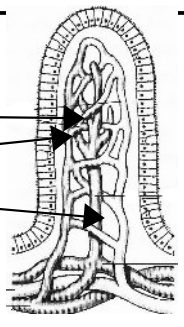
Wheat contains both carbohydrate & proteins

- Alimentary canal ?

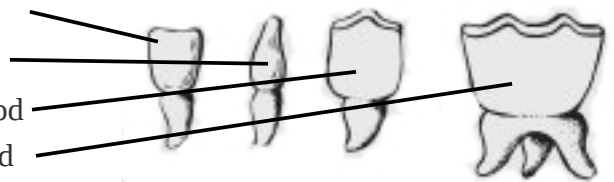


- Digestive glands ?
 - Salivary glands (3 pairs)
 - Liver [secretes bile]
 - Pancreas. [secretes pancreatic juice]
 [Also include Gastric glands (secretes gastric juice) as well as Intestinal glands (secretes intestinal juice)]

- Digestion of food.

	MECHANICAL DIGESTION	CHEMICAL DIGESTION			ABSORPTION
		Digestive Fluid	Factors in it	Action on food	
MOUSE	Cutting & Chewing food by teeth and tongue	Saliva	-Mucus -Salivary amylase -Lysozyme	-For smooth conduction. -Starch → Maltose -Destroy germs.	---
STOMACH	Churning food	Gastric Juice	-Mucus -HCl -Pepsin	- Protect stomach wall -Destroy germs and regulate the pH level -Protein → Peptone	---
SMALL INTESTINE	---	Bile (from the Liver) Pancreatic Juice Intestinal Juice	- Break down of lipids. Convert acidic food to basic. -Pancr. Amylase -Tripsin -Pancreatic Lipase -Peptidase -Disaccharidase	-Starch → Maltose -Protein → Peptide -Fat → Fatty acid and Glycerol -Peptide → Amino acid -Maltose → Glucose/ Fructose/Galactose	 VILLUS

- 4 Types of Teeth.
 - Incisor** (8) – For cutting the food.
 - Canine** (4) – For tearing the food
 - Premolar** (8) – for chewing the food
 - Molar** (12) – For chewing the food



- Wisdom Teeth are teeth that appear only after attaining maturity.
- Peristalsis ?
Wave like movement of oesophagus and intestine, when food passes.
- Duodenum ?
The initial part of the small intestine, where the bile and the pancreatic juice mixes with the food.
- Liver ?
The largest gland, which secretes bile.[Bile is stored in the Gall bladder] Liver is the only organ, capable of regeneration.
- Small Intestine ?
The longest tube of smooth muscles. Digestion complete here. Absorption of nutrients also occur in it.
- Large Intestine ?
Re-absorption of water occur with in the large intestine.
- Problems of Fast food ?
?
- Mode of nutrition in other animals.

Amoeba	Pseudopodia collect food. Enzyme seen inside the food vacuoles digest the food. (ie, intracellular digestion)
Hydra	Tentacles collect food. Digestion occur in mouth (ie, extracellular digestion) and also with in the food vacuoles (ie, intra cellular digestion).
Tape worm	Absorption of nutrients (digested food) through its body surface. No digestion.

- Example for an endoparasite ?
Tape worm.

IX BIOLOGY
Unit Test (Unit 2)

Time : 15 mnt
Score : 15

1. Amoeba : Pseudopodia ; Hydra : ----- ?
2. Pancreas : Pancreatic juice ; Liver : ----- ?
3. Which is the odd one ? Why ? [glucose, fructose, sucrose]
4. Name an endoparasite.
5. Name the wave-like movement of oesophagus when food passes through it.
6. Recognize the given figure. Give its function too.



7. Choose suitable enzymes from the bracket to fill in the place of **A, B** and **C**.
[**Pepsin, Peptidase, Tripsin**]

-----A-----	Converts protein in to peptone.
-----B-----	Converts protein in to peptide.
-----C-----	Converts peptide in to amino acid.

8. Which of the following category of food item is more nutritious ? Why ?
(a) – Dosa and Kadalakkary (b) – Bun and Jam (c) – Bread and Butter
9. Name **A** and **B** of the figure.

