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Question :- Write Notes on PHYSIOLOGY OF DIGESTION?

Answer :- PHYSIOLOGY OF DIGESTION :-

The process by which food is broken down into simple chemical compounds that can be absorbed and used as nutrients or eliminated by the body is called digestion.

The processes of digestion include six activities: Ingestion, propulsion, mechanical or physical digestion, chemical digestion, absorption, and defecation.

Digestion is the breakdown of large insoluble food molecules into small

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water-soluble food molecules so that they can be absorbed into the watery blood plasma.

In certain organisms, these smaller substances are absorbed through the small intestine into the blood stream. Digestion

is a form of catabolism that is often divided into two processes based on how food is broken down: mechanical and chemical digestion.

The term mechanical digestion refers to the physical breakdown of large pieces of food into smaller pieces which can subsequently be accessed by digestive enzymes.

In chemical digestion, enzymes break down food into the small molecules the body can use.

In the human digestive system, food enters the mouth and mechanical digestion of

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the food starts by the action of mastication (chewing), a form of mechanical digestion, and the wetting contact of saliva. Saliva, a liquid secreted by the salivary glands, contains salivary amylase, an enzyme which starts the digestion of starch in the food; the saliva also contains mucus, which lubricates the food, and hydrogen carbonate, which provides the ideal conditions of pH (alkaline) for amylase to work. After undergoing mastication and starch digestion, the food will be in the form of a small, round slurry mass called a bolus. It will then travel down the esophagus and into the stomach by the action of peristalsis. Gastric juice in the stomach starts

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protein digestion. Gastric juice mainly contains hydrochloric acid and pepsin. In infants and toddlers gastric juice also contains rennin. As the first two chemicals may damage the stomach wall, mucus is secreted by the stomach, providing a slimy layer that acts as a shield against the damaging effects of the chemicals.

At the same time protein digestion is occurring.

mechanical mixing occurs by peristalsis, which is waves of muscular contractions that move along the stomach wall. This allows the mass of food to further mix with the digestive enzymes.

Non-destructive digestion :-

some nutrients are

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complex molecules (for example vitamin B<sub>12</sub>) which would be destroyed if they were broken down into their functional groups. To digest vitamin B<sub>12</sub> non-destructively, haptocorrin in saliva strongly binds and protects the B<sub>12</sub> molecules from stomach acid as they enter the stomach and are cleaved from their protein complexes.

### Digestive hormones :-

