Chapter	9 Human Digestive System	Class	1st Year	Subject	Biology

Give Short Answers of the Following Questions

1. What function of the Digestive system?

Ans. Main function of the Digestive system:

- **Breakdown:** converts food into absorbable nutrients.
- **Absorption:** Transport nutrients into the bloodstream.
- **Elimination:** Expels indigestive waste as faces.

2. What is the mode of action of saliva in mouth?

Ans. Mode of Action of Saliva in Mouth:

- **Enzymatic action:** Salivary amylase begins carbohydrate digestion.
- **Moistening:** Lubricates food for easier swallowing.
- **Protection:** Contains lysozymes to inhibit bacterial growth.

3. What role of tongue in the mouth?

Ans. Role of Tongue in Mouth:

- **Mechanical Digestion:** Manipulates food during chewing.
- **Taste sensation:** Detects flavors via taste buds.
- **Bolus formation:** Shapes food into a soft mass for swallowing.

4. What role does the epiglottis play during swallowing?

Ans. Role of Epiglottis Play During Swallowing:

- **Protection:** Covers the trachea to prevent food entry into lungs.
- **Direction:** Guides food towards the esophagus.

5. What is the composition of gastric juice?

Ans. Composition of Gastric juice:

- **Hydrochloric Acid (HCl):** Create acidic PH.
- **Pepsinogen:** Activated to pepsin (digests proteins).
- **Mucus:** Protects the stomach lining from acid.
- **Gastric Lipase:** Begins fat digestion (minor role).

6. Why is hydrochloric acid important in the stomach?

Ans. Importance of hydrochloric acid in stomach:

- **Pathogen Destruction:** Kills ingested bacteria.
- **Enzyme Activation:** Converts pepsinogen to pepsin.
- **Optimal PH:** Maintains acidic environment for enzymatic avtivity.

7. What is the difference between bolus and chyme?

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Ans. Bolus and Chemical:

Bolus	Chyme
• Chewed food mixed with saliva (formed in the mouth).	• Semi-liquid mixture of partially digested food and gastric juice (formed in the stomach).

8. Which organ produces bile, and what is its function?

Ans. Bile Production:

- **Produced By:** Liver (stored in the gallbladder).
- **Function:** Emulsifies fats, neutralizes stomach acid, and aids lipid digestion.

9. Differentiate between physical and chemical digestion?

Ans. Physical and Chemical:

Physical	Chemical
• Mechanical breakdown (e.g. chewing, peristalsis)	• Enzymatic breakdown (e.g. amylase, pepsin, lipase)

10. What do you understand by emulsification of fats?

Ans . Emulsification of Fats:

- **Process:** Bile salts break large fat globules into smaller droplets.
- **Purpose:** Increases surface area for lipase enzyme action.

11. What is the role of the pyloric sphincter in digestion?

Ans. Role of Pyloric Sphincter in Digestion:

- **Regulation:** Controls the release of chyme from the stomach to the duodenum.
- **Prevents overload:** Ensures gradual entry into the small intestine.

12. How do villi and microvilli help in nutrient absorption?

Ans. Villi and microvilli help in nutrient absorption:

- **Villi:** Finger-like projection in the small intestine that increase surface area.
- **Microvilli:** Hair-like structures on villi (''brush border'') further enhance nutrient absorption.

13. What are the main functions of the large intestine?

Ans. Main Functions of Large Intestine:

- **Water Absorption:** Reabsorbs water and electrolytes.
- **Feces Formation:** Compacts undigested waste.

- **Bacterial Activity:** Gut flora synthesis vitamins (e.g. , vitamin K)

14. What causes jaundice in the digested system:

Ans. Causes of Jaundice in the Digested System:

- **Liver Dysfunction:** Hepatitis, cirrhosis, or bile duct obstruction.
- **Bilirubin Buildup:** Excess billirubin in blood due to impaired processing or excretion.

15. How does the stress negatively impact digestion?

Ans. Stress of Negatively Impact Digestion:

- **Reduced Blood Flow:** Diverts energy to muscles and brain.
- **Delayed Motility:** Slow digestion, causing bloating or constipation.
- **Acid Imbalance:** May trigger acid reflux or ulcers.
- **Gut Microbiome Disruption:** Alters bacterial balance, affecting nutrients absorption.