

Study Guide

Digestive System

Vocabulary (study using flashcard set on Quizlet: *DPSS Biology 12 – Digestive System*)

9.1 The Digestive Tract

- mechanical digestion
- chemical digestion
- mouth
- taste buds
- tongue
- hard palate
- soft palate
- uvula
- tonsils
- salivary glands
- teeth
- bolus
- pharynx
- nasopharynx
- reflex action
- epiglottis
- glottis
- larynx
- esophagus
- peristalsis
- abdominal cavity
- cardiac sphincter
- stomach
- rugae
- gastric glands
- gastric juice
- pepsinogen
- hydrochloric acid
- mucus
- chyme
- pyloric sphincter

- small intestine
- duodenum
- bile duct
- jejunum
- ileum
- villi
- microvilli
- capillaries
- lacteal
- *hormones**
 - *gastrin*
 - *secretin*
 - *cholecystokinin (CCK)*
- large intestine
- cecum
- appendix
- colon
 - ascending
 - transverse
 - descending
 - sigmoid
- rectum
- anus
- defecation
- fiber

9.2 Three Accessory Organs

- pancreas
- endocrine
- exocrine*
- pancreatic juice
- sodium bicarbonate
- insulin
- glucagon

- liver
- urea
- plasma proteins
- bile
 - bilirubin
 - bile salts
 - emulsification
- gallbladder

9.3 Digestive Enzymes

- carbohydrates
 - salivary amylase
 - pancreatic amylase
 - maltase
- proteins
 - pepsin
 - trypsin
 - peptidases
- nucleic acids
 - nuclease
 - nucleosidases
- lipids
 - lipase

9.4 Disorders

- cleft palate (9.1)
- tonsillitis (9.1)
- heartburn or acid reflux (9.1)
- appendicitis (9.1)
- peritonitis (9.1)
- lactose intolerance (9.3)
- stomach ulcer
- diarrhea
- constipation
- diabetes

* found in BC Biology 12 book but not specifically covered in class

Key Points (hint: go through PLOs and check off everything you know, then study the rest!)

PLO C1 Analyse the functional interrelationships of the structures of the digestive system

- Identify and give the function of digestive structures
- Describe swallowing and peristalsis
- Identify the pancreas as the source gland for insulin, and describe the function of insulin in maintaining blood sugar levels
- List at least six major functions of the liver
- Explain the role of bile in the emulsification of fats
- Describe how the small intestine is specialized for chemical and physical digestion and absorption
- Describe the structure of the villus, including microvilli, and explain the functions of the capillaries and lacteals within it
- Describe the functions of anaerobic bacteria in the colon
- Demonstrate the correct use of the dissection microscope to examine the various structures of the digestive system

PLO C2 Describe the components, pH, and digestive actions of salivary, gastric, pancreatic, and intestinal juices

- Relate the digestive enzymes to their glandular sources and describe the digestive reactions they promote
- Describe the role of water as a component of digestive juices
- Describe the role of sodium bicarbonate in pancreatic juice
- Describe the role of hydrochloric acid (HCl) in gastric juice
- Describe the role of mucus in gastric juice
- Describe the importance of the pH level in various regions of the digestive tract

Possible Test Questions

1. State the function of the digestive system (4 components).
2. Define the following terms and give two examples of each:
 - a. mechanical digestion
 - b. chemical digestion
3. Label a diagram of the digestive system.
4. Trace the path of food during digestion.
5. Give functions of the digestive structures.
6. Explain why if you chewed a cracker long enough, it will begin to taste sweet.
7. Which structures of the digestive system do not secrete enzymes?
8. Explain the function of the (a) cardiac sphincter and (b) pyloric sphincter.
9. Where does the digestion of proteins take place?
10. Label a diagram of the villi in the small intestine.
11. State the end product of digestion of each organic compound, where they are absorbed in the villus and where each goes from there.
12. What products of digestion enter the hepatic portal vein? What happens to these products when they enter the liver?
13. Name the 3 accessory organs of digestion and describe their contribution to the digestive process.
14. State the gland source for insulin. State the effects of insulin on target organs, cells, and tissues and its overall effect on the body.
15. Name 4 of the 7 functions of the liver.
16. Where does the bile duct enter the digestive system?
17. Name the major digestive enzymes. Give the...
 - a. production location
 - b. preferred pH of each
 - c. formula its involved in
18. Decide whether the described condition for digestion will allow digestion to occur maximally or not. If not, describe why.
19. Explain what is meant by digestive enzymes being hydrolytic enzymes.
20. Which compounds are digested in only one organ or region of the digestive system?
21. What problem may result from an inflammation of the large intestine which hinders its function?
22. Name and describe one disorder of the digestive system.