

RAVEN CHAPTER 48 GUIDED NOTES: THE DIGESTIVE SYSTEM

Raven 9th edition

1. Distinguish between heterotrophs and autotrophs.

2. Why must animals eat food?

3. Identify and describe the three modes of heterotrophic nutrition.

a. _____

b. _____

c. _____

4. Distinguish between intracellular digestion and extracellular digestion.

5. What two major changes occur to food in the mouth?

a. _____

b. _____

6. List and explain two adaptations of the mouth that enhance its function.

a. _____

b. _____

7. What is the function of the epiglottis?

8. How does food move down the esophagus?

9. Explain the role of sphincters in the digestive system.

10. List three functions of the stomach.
- a. _____
 - b. _____
 - c. _____
11. List three functions of the hydrochloric acid (HCl) of the stomach.
- a. _____
 - b. _____
 - c. _____
12. How are the parietal cells of the stomach protected from digesting themselves by pepsin?
- _____
- _____
13. How is the stomach itself protected from being digested or damaged by pepsin or by HCl?
- _____
- _____
14. List the major secretions that enter the duodenum and where they come from.
- a. _____
 - b. _____
 - c. _____
15. What are the two major functions of the small intestines?
- _____
- _____
16. List and explain the adaptations of the small intestines that enhance its function.
- _____
- _____

17. What enzymes are produced by the brush border of the small intestines?

18. List the enzymes secreted by the pancreas into the small intestines.

19. Explain the adaptation that protects the pancreas from digesting itself by the peptidases it produces.

20. Discuss the mechanisms of absorption of different nutrients by the small intestines.

21. Describe two important functions of the large intestine.

a.

b.

22. Describe the adaptations of the digestive system of ruminants

23. Describe the nutritional adaptation of animals that practice coprophagy.

24. Distinguish between the adaptations of the digestive system of herbivores and carnivores.

25. Review the neuronal control of the digestive system by making notes on the effect of each of these:

a. gastrin

b. cholecystinin (CCK)

c. gastric inhibitory peptide (GIP)

d. secretin

26. Discuss some of the regulatory functions of the liver

27. Where is each of the following chemically digested?

a. Carbohydrates

b. Protein

c. Nucleic Acid

d. Fat

28. Outline the regulation of blood glucose levels and explain how glucose metabolism demonstrates a homeostatic mechanism.

29. Briefly discuss essential nutrients — why are they “essential” and what role do they have in animal metabolism?

30. Identify a few key deficiency diseases.

31. Label the diagram of the human digestive system.

