



Chapter 34 Exercises

Review Questions

- Which of the following is a pseudo-ruminant?
a. cow b. pig c. crow d. horse
- Which of the following statements is *false*?
a. Roughage takes a long time to digest.
b. Birds eat large quantities at one time so that they can fly long distances.
c. Cows do not have upper teeth.
d. In pseudo-ruminants, roughage is digested in the cecum.
- The acidic nature of chyme is neutralized by _____.
a. potassium hydroxide c. bicarbonates
b. sodium hydroxide d. vinegar
- The digestive juices from the liver are delivered to the _____.
a. stomach c. duodenum
b. liver d. colon
- A scientist dissects a new species of animal. If the animal's digestive system has a single stomach with an extended small intestine, to which animal could the dissected specimen be closely related?
a. lion c. earthworm
b. snowshoe hare d. eagle
- Which of the following statements is *false*?
a. Essential nutrients can be synthesized by the body.
b. Vitamins are required in small quantities for bodily function.
c. Some amino acids can be synthesized by the body, while others need to be obtained from diet.
d. Vitamins come in two categories: fat soluble and water soluble.
- Which of the following is a water-soluble vitamin?
a. vitamin A c. vitamin K
b. vitamin E d. vitamin C
- What is the primary fuel for the body?
a. carbohydrates c. protein
b. lipids d. glycogen
- Excess glucose is stored as _____.
a. fat c. glycogen
b. glucagon d. lipids

10. Many distance runners “carb load” the day before a big race. How does this eating strategy provide an advantage to the runner?
- The carbohydrates cause the release of insulin.
 - The excess carbohydrates are converted to fats, which have a higher calorie density.
 - The glucose from the carbohydrates lets the muscles make excess ATP overnight.
 - The excess carbohydrates can be stored in the muscles as glycogen.
11. Where does the majority of protein digestion take place?
- stomach
 - duodenum
 - mouth
 - jejunum
12. Lipases are enzymes that break down _____.
- disaccharides
 - lipids
 - proteins
 - cellulose
13. Which of the following conditions is most likely to cause constipation?
- bacterial infection
 - dehydration
 - ulcer
 - excessive cellulose consumption
14. Which hormone controls the release of bile from the gallbladder?
- pepsin
 - amylase
 - CCK
 - gastrin
15. Which hormone stops acid secretion in the stomach?
- gastrin
 - somatostatin
 - gastric inhibitory peptide
 - CCK
16. In the famous conditioning experiment, Pavlov demonstrated that his dogs started drooling in response to a bell sounding. What part of the digestive process did he stimulate?
- cephalic phase
 - gastric phase
 - intestinal phase
 - elimination phase

Critical Thinking Questions

17. How does the polygastric digestive system aid in digesting roughage?
18. How do birds digest their food in the absence of teeth?
19. What is the role of the accessory organs in digestion?
20. Explain how the villi and microvilli aid in absorption.
21. Name two components of the digestive system that perform mechanical digestion. Describe how mechanical digestion contributes to acquiring nutrients from food.
22. What are essential nutrients?
23. What is the role of minerals in maintaining good health?
24. Discuss why obesity is a growing epidemic.
25. There are several nations where malnourishment is a common occurrence. What may be some of the health challenges posed by malnutrition?
26. Generally describe how a piece of bread can power your legs as you walk up a flight of stairs.
27. In the 1990s, fat-free foods became popular among people trying to lose weight. However, many dieticians now conclude that the fat-free trend made people less healthy and heavier. Describe how this could occur.
28. Explain why some dietary lipid is a necessary part of a balanced diet.
29. The gut microbiome (the bacterial colonies in the intestines) have become a popular area of study in biomedical research. How could varying gut microbiomes impact a person's nutrition?
30. Many mammals become ill if they drink milk as adults even though they could consume it as babies. What causes this digestive issue?
31. Describe how hormones regulate digestion.
32. Describe one or more scenarios where loss of hormonal regulation of digestion can lead to diseases.