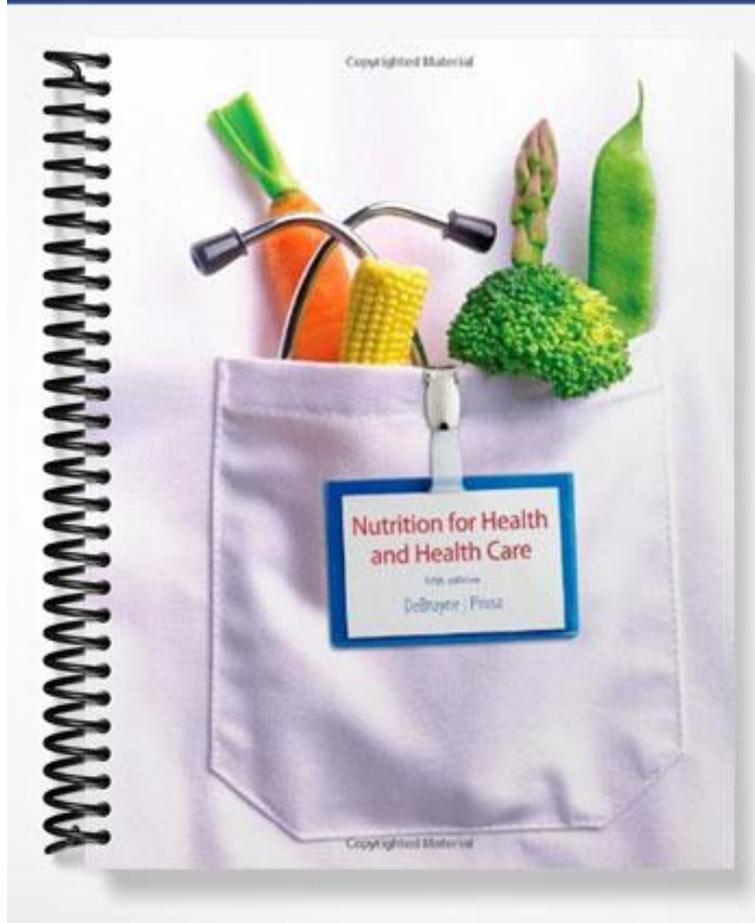


# TEST BANK



## Chapter 2 – Digestion and Absorption

### Multiple Choice

- Another name for the digestive tract is the:
  - urinary tract.
  - exocrine system.
  - gastrointestinal system.
  - muscular system.
- The digestive tract begins at the \_\_\_\_ and ends at the \_\_\_\_.
  - stomach; large intestine
  - pharynx; rectum
  - lower esophageal sphincter; rectum
  - mouth; anus
- A bolus is a(n):
  - sphincter muscle separating the stomach from the small intestine.
  - portion of food swallowed at one time.
  - enzyme that hydrolyzes starch.
  - portion of partially digested food expelled by the stomach into the duodenum.
- The \_\_\_\_ is formed in the mouth.
  - bile
  - bolus
  - chyme
  - villus
- The \_\_\_\_ prevents food from entering the lungs.
  - lower esophageal sphincter
  - pharynx
  - ileocecal valve
  - epiglottis
- The stomach empties into the:
  - ileum.
  - cecum.
  - jejunum.
  - duodenum.
- Chyme is:
  - a semiliquid mass of partially digested food.
  - a portion of food swallowed at one time.
  - an enzyme in the stomach needed for the digestion of protein.
  - an esophageal secretion.
- Two organs that secrete digestive juices into the small intestine are the \_\_\_\_ and \_\_\_\_.
  - gallbladder; pancreas
  - pancreas; liver
  - gallbladder; liver
  - duodenum; pancreas
- The movement of chyme from the stomach into the small intestine is regulated by the:
  - pancreas.
  - pyloric sphincter.
  - ileocecal valve.
  - duodenum.
- Immediately before passing into the large intestine, the food mass must pass through the:
  - pyloric sphincter.
  - lower esophageal sphincter.
  - ileocecal valve.
  - bolus.
- Peristalsis* is a term that refers to the:
  - circulation of blood in the blood vessels.
  - absorption of nutrients in the intestines.
  - mixing and moving of food through the lymphatic system.
  - last phase of digestion.
  - action of the involuntary muscles of the digestive tract.

12. Involuntary muscle contractions move food through the intestinal tract. The movement that forces the contents back a few inches before pushing it forward again is called:
- segmentation.
  - rotation.
  - peristalsis.
  - liquefaction.
13. Enzymes:
- facilitate chemical reactions.
  - draw water into the small intestine.
  - are present in all parts of the GI tract.
  - encourage bacterial growth.
14. Which enzyme breaks down starch in the mouth?
- lingual protease
  - lipase
  - salivary amylase
  - gastric protease
  - secretin
15. Saliva contains an enzyme that digests:
- proteins.
  - minerals.
  - starches.
  - vitamins.
  - fiber.
16. Which of the following is not a component of gastric juice?
- water
  - enzymes
  - chylomicrons
  - hydrochloric acid
17. The normal pH of the stomach is:
- very acidic.
  - slightly acidic.
  - neutral.
  - slightly alkaline.
  - strongly alkaline.
18. Which of the following organs does not contribute juices during digestion?
- salivary glands
  - small intestine
  - pancreas
  - esophagus
19. The function of mucus in the stomach is to:
- neutralize stomach acid.
  - activate pepsinogen to pepsin.
  - protect stomach cells from gastric juices.
  - emulsify fats.
  - collect bacteria.
20. The major digestive work in the stomach is the initial breakdown of:
- starch.
  - proteins.
  - fat.
  - vitamins.
21. In addition to hydrochloric acid, the stomach cells also secrete:
- mucus.
  - bile.
  - amylase.
  - lipoproteins.
  - cholesterol.
22. The major digestive enzyme secreted by the stomach is:
- amylase.
  - lipase.
  - pepsin.
  - disaccharidase.
23. Which nutrients are digested in the small intestine?
- carbohydrate, fat, and protein
  - fat, water, and fiber
  - protein, vitamins, and fiber
  - water, fiber, and minerals

24. The digestion of proteins begins in the \_\_\_\_\_ and ends in the \_\_\_\_\_.
- stomach; pancreas
  - pancreas; small intestine
  - stomach; small intestine
  - small intestine; liver
25. Which of the following organs is the primary source of digestive enzymes?
- pancreas
  - gallbladder
  - stomach
  - liver
26. After the pancreatic juices have mixed with chyme in the intestine, the resulting mixture is:
- very acidic.
  - slightly acidic.
  - strongly alkaline.
  - slightly alkaline.
27. The liver:
- reabsorbs water and salts.
  - secretes bile.
  - churns food to chyme.
  - performs enzymatic digestion.
  - stores bile.
28. The main function of bile is to:
- emulsify fats.
  - stimulate the activity of protein digestive enzymes.
  - neutralize the intestinal contents.
  - decrease the acidity of the contents of the stomach.
29. If the gallbladder becomes diseased, the digestion of \_\_\_\_\_ can become compromised.
- fat
  - protein
  - carbohydrate
  - fiber
30. The gallbladder:
- reabsorbs water and salts.
  - churns food to chyme.
  - performs enzymatic digestion.
  - stores bile.
31. The emulsification of fat requires:
- bile.
  - enzymes.
  - prostaglandins.
  - intestinal flora.
32. Which of the following contains no digestive enzymes?
- saliva
  - gastric juice
  - intestinal juice
  - bile
33. Which of the following does not secrete digestive juices?
- stomach
  - pancreas
  - salivary glands
  - large intestine
34. Which of the following nutrients takes longest to digest?
- fat
  - sugar
  - vitamin C
  - iron
  - glucose
35. Fats present in the GI tract:
- slow down the process of digestion and absorption.
  - cause difficulty in digestion.
  - stimulate and hasten digestion and absorption.
  - are carriers of thiamin, riboflavin, and niacin.

36. Which of the following foods would take the most time to digest?
- a piece of toast with strawberry jam
  - a grilled steak
  - a green salad with low-fat salad dressing
  - a cup of green beans
37. Which of these foods would be digested most quickly?
- sugar cookies
  - peanut butter sandwich and milk
  - stew and cornbread
  - hamburger, french fries, and milkshake
38. Which of the following foods would be digested most rapidly?
- a scoop of lemon sherbet
  - an apple
  - a baked potato with sour cream
  - a piece of cheese on a cracker
39. Which nutrients must be broken down in order to be absorbed?
- vitamins, minerals, water
  - carbohydrate, vitamins, minerals
  - fat, protein, minerals
  - carbohydrate, protein, fat
40. Bacteria in the GI tract perform all of the following functions except:
- producing biotin.
  - protecting people from infection.
  - producing vitamin K.
  - producing bile.
41. Fiber functions to:
- aid in the absorption of vitamins.
  - produce GI bacteria.
  - stimulate the GI tract muscles.
  - stimulate the absorption of nutrients.
42. A benefit of fiber is that it:
- promotes mineral absorption.
  - aids in keeping stools soft.
  - prevents diarrhea.
  - keeps individual foods from getting mixed together.
43. Once the digestive process is complete, the colon retrieves materials that the body must recycle. These materials are:
- water and dissolved salts.
  - iron and water.
  - protein and sodium.
  - water and fiber.
44. One of the functions of the colon is to absorb:
- salts.
  - vitamins.
  - sugars.
  - fiber.
45. The primary site of nutrient absorption is the:
- stomach.
  - pancreas.
  - small intestine.
  - large intestine.
46. Villi are part of the structure of the:
- esophagus.
  - stomach.
  - small intestine.
  - large intestine.
47. The microscopic hairs that cover the surface of each cell lining the small intestine are called:
- intestinal folds.
  - villi.
  - microvilli.
  - lymphatics.
48. Which of the following nutrients is/are absorbed into the lymphatic system?
- fat-soluble vitamins
  - water
  - amino acids
  - glucose

49. After absorption, the water-soluble nutrients are released directly into the:
- bloodstream.
  - kidneys.
  - liver.
  - lymph.
50. After absorption, the larger fats and fat-soluble vitamins are first released into the \_\_\_\_\_ transport system.
- excretory
  - mesentery
  - vascular
  - lymphatic
51. After digestion, lipids are packaged for transport as lipoproteins known as:
- HDL.
  - VLDL.
  - LDL.
  - chylomicrons.
52. Which of the following is not part of the structure of a chylomicron?
- phospholipid
  - protein
  - triglyceride
  - water-soluble vitamins
53. The lymphatic system:
- contains fluid with the same composition as blood.
  - eventually drains into the blood circulatory system.
  - carries chylomicrons to the intestines.
  - is where metabolism of nutrients takes place.
54. When nutrients enter the blood vessels from the small intestine, they are first transported to the:
- kidney.
  - liver.
  - cells throughout the body.
  - thoracic duct.
55. Which of the following is the body's major metabolic organ?
- pancreas
  - small intestine
  - gallbladder
  - liver
56. Elevated LDL concentrations are associated with a high risk of heart disease because they:
- transport cholesterol and triglycerides from the liver to the tissues.
  - carry excessive amounts of fat that is deposited around the heart.
  - encourage high levels of iron in the blood.
  - take excess cholesterol back to the liver, which increases the production of cholesterol.
57. Elevated HDL concentrations are associated with a low risk of heart disease because they:
- transport newly absorbed lipids from intestinal cells to the rest of the body.
  - carry cholesterol and triglycerides from the liver to the rest of the body.
  - carry lipids around in the blood more often than LDL.
  - take excess cholesterol and phospholipids from the tissues and return them to the liver.
58. The lipoprotein that contains the greatest proportion of triglyceride is the:
- HDL.
  - LDL.
  - VLDL.
  - chylomicron.
59. Which of the following factors is not required for optimal health and performance of the digestive system?
- adequate sleep
  - enzyme supplements
  - mental state
  - nutrition

60. Which of the following will cause a foodborne infection?
- foods containing toxin-producing microbes
  - Clostridium botulinum*
  - Campylobacter jejuni*
  - Staphylococcus aureus*
61. To prevent bacterial growth when holding cooked foods, they should be kept at \_\_\_\_\_° F or higher until served.
- 40
  - 140
  - 165
  - 200
62. To prevent foodborne illnesses:
- Fresh produce should be washed before it is eaten.
  - Only new sponges and towels should be used in the kitchen.
  - Leftovers can safely be covered and left at room temperature until the next meal.
  - Meats should be marinated at room temperature.
63. Cold food should be stored at \_\_\_\_\_.
- 40° F or colder
  - 55° F or colder
  - 80° F or colder
  - 140° F or colder
64. Leftovers should be used within \_\_\_\_\_ days.
- 5-7
  - 3-4
  - 2-3
  - 1-2

### Essay

- Outline and trace the path food follows through the digestive tract from one end to the other.
- Describe the role of the stomach in the process of digestion.
- Should antacids be taken to decrease the strong acidity of the stomach? Explain your answer.
- Explain what determines the rate of digestion of the energy nutrients.
- Explain the benefits of intestinal microflora to health.
- Describe the difference between low-density lipoproteins (LDL) and high-density lipoproteins (HDL). What is the relationship between blood levels of these lipoproteins and risk of heart disease?

**Matching**

- |                                   |  |
|-----------------------------------|--|
| 1. anus                           | a. the oral cavity containing the tongue and teeth.  |
| 2. appendix                       | b. the passageway leading from the nose and mouth to the larynx and esophagus, respectively.   |
| 3. duodenum                       | c. a cartilage structure in the throat that prevents fluid or food from entering the trachea when a person swallows.                               |
| 4. epiglottis                     | d. the passageway from the mouth and nose to the lungs.  |
| 5. esophagus                      | e. the conduit from the mouth to the stomach.  |
| 6. gallbladder                    | f. the sphincter muscle at the junction between the esophagus and the stomach.   |
| 7. ileocecal valve                | g. the sphincter muscle separating the stomach from the small intestine.   |
| 8. ileum                          | h. the organ that stores and concentrates bile.  |
| 9. jejunum                        | i. a gland that secretes enzymes and digestive juices into the duodenum.   |
| 10. large intestine               | j. a 10-foot length of small-diameter (1-inch) intestine that is the major site of digestion of food and absorption of nutrients.                  |
| 11. lower esophageal sphincter    | k. the top portion of the small intestine.   |
| 12. mouth                         | l. the first two-fifths of the small intestine beyond the duodenum.  |
| 13. pancreas                      | m. the last segment of the small intestine.  |
| 14. pharynx                       | n. the sphincter muscle separating the small and large intestines.   |
| 15. pyloric sphincter             | o. the last portion of the intestine, which absorbs water.   |
| 16. rectum                        | p. a narrow blind sac extending from the beginning of the large intestine; stores lymphocytes.   |
| 17. small intestine               | q. the muscular terminal part of the GI tract extending from the sigmoid colon to the anus.  |
| 18. trachea                       | r. the terminal sphincter muscle of the GI tract.  |
| 19. chylomicrons                  | a. class of lipids composed of glycerol with three fatty acids attached.   |
| 20. high-density lipoproteins     | b. the lipoproteins that transport lipids from the intestinal cells into the body.   |
| 21. lipoprotein                   | c. a cluster of lipids associated with proteins that serves as a transport vehicle for lipids in the lymph and blood.                              |
| 22. low-density lipoproteins      | d. the type of lipoproteins made primarily by liver cells to transport lipids to various tissues in the body; composed primarily of triglycerides. |
| 23. triglycerides                 | e. the type of lipoproteins derived from VLDL as cells remove triglycerides from them; composed primarily of cholesterol.                          |
| 24. very-low-density lipoproteins | f. the type of lipoproteins that transport cholesterol back to the liver from peripheral cells; composed primarily of protein.                     |

**Answer Key** (ANS = answer, DIF = level of difficulty, REF = page reference, TOP = chapter section)

**Multiple Choice**

1.	ANS: c	DIF: Knowledge-level	REF: 38	TOP: 2.1
2.	ANS: d	DIF: Knowledge-level	REF: 38	TOP: 2.1
3.	ANS: b	DIF: Knowledge-level	REF: 39	TOP: 2.1
4.	ANS: b	DIF: Knowledge-level	REF: 39	TOP: 2.1
5.	ANS: d	DIF: Knowledge-level	REF: 39	TOP: 2.1
6.	ANS: d	DIF: Knowledge-level	REF: 40	TOP: 2.1
7.	ANS: a	DIF: Knowledge-level	REF: 40	TOP: 2.1
8.	ANS: a	DIF: Knowledge-level	REF: 40	TOP: 2.1
9.	ANS: b	DIF: Knowledge-level	REF: 40	TOP: 2.1
10.	ANS: c	DIF: Knowledge-level	REF: 40	TOP: 2.1
11.	ANS: e	DIF: Knowledge-level	REF: 40	TOP: 2.1
12.	ANS: a	DIF: Knowledge-level	REF: 41	TOP: 2.1
13.	ANS: a	DIF: Knowledge-level	REF: 43	TOP: 2.2
14.	ANS: c	DIF: Knowledge-level	REF: 43	TOP: 2.2
15.	ANS: c	DIF: Knowledge-level	REF: 43	TOP: 2.2
16.	ANS: c	DIF: Knowledge-level	REF: 43	TOP: 2.2
17.	ANS: a	DIF: Knowledge-level	REF: 43	TOP: 2.2
18.	ANS: d	DIF: Knowledge-level	REF: 43	TOP: 2.2
19.	ANS: c	DIF: Knowledge-level	REF: 44	TOP: 2.2
20.	ANS: b	DIF: Knowledge-level	REF: 44	TOP: 2.2
21.	ANS: a	DIF: Knowledge-level	REF: 44	TOP: 2.2
22.	ANS: c	DIF: Knowledge-level	REF: 44	TOP: 2.2
23.	ANS: a	DIF: Knowledge-level	REF: 44	TOP: 2.2
24.	ANS: c	DIF: Knowledge-level	REF: 44	TOP: 2.2
25.	ANS: a	DIF: Knowledge-level	REF: 44	TOP: 2.2
26.	ANS: d	DIF: Knowledge-level	REF: 44	TOP: 2.2
27.	ANS: b	DIF: Knowledge-level	REF: 44	TOP: 2.2
28.	ANS: a	DIF: Knowledge-level	REF: 44	TOP: 2.2
29.	ANS: a	DIF: Application-level	REF: 44	TOP: 2.2
30.	ANS: d	DIF: Knowledge-level	REF: 44	TOP: 2.2
31.	ANS: a	DIF: Knowledge-level	REF: 44	TOP: 2.2
32.	ANS: d	DIF: Knowledge-level	REF: 43-44	TOP: 2.2
33.	ANS: d	DIF: Knowledge-level	REF: 43	TOP: 2.2
34.	ANS: a	DIF: Application-level	REF: 45	TOP: 2.2
35.	ANS: a	DIF: Knowledge-level	REF: 45	TOP: 2.2
36.	ANS: b	DIF: Application-level	REF: 45	TOP: 2.2
37.	ANS: a	DIF: Application-level	REF: 45	TOP: 2.2
38.	ANS: a	DIF: Application-level	REF: 45	TOP: 2.2
39.	ANS: d	DIF: Knowledge-level	REF: 45	TOP: 2.2
40.	ANS: d	DIF: Knowledge-level	REF: 45	TOP: 2.2
41.	ANS: c	DIF: Knowledge-level	REF: 45	TOP: 2.2
42.	ANS: b	DIF: Knowledge-level	REF: 45	TOP: 2.2
43.	ANS: a	DIF: Knowledge-level	REF: 45	TOP: 2.2
44.	ANS: a	DIF: Knowledge-level	REF: 45	TOP: 2.2
45.	ANS: c	DIF: Knowledge-level	REF: 45	TOP: 2.3

46. ANS: c	DIF: Knowledge-level	REF: 45	TOP: 2.3
47. ANS: c	DIF: Knowledge-level	REF: 45	TOP: 2.3
48. ANS: a	DIF: Knowledge-level	REF: 47	TOP: 2.3
49. ANS: a	DIF: Knowledge-level	REF: 47	TOP: 2.3
50. ANS: d	DIF: Knowledge-level	REF: 47	TOP: 2.3
51. ANS: d	DIF: Knowledge-level	REF: 47	TOP: 2.3
52. ANS: d	DIF: Knowledge-level	REF: 47	TOP: 2.3
53. ANS: b	DIF: Knowledge-level	REF: 48	TOP: 2.4
54. ANS: b	DIF: Knowledge-level	REF: 48	TOP: 2.4
55. ANS: d	DIF: Knowledge-level	REF: 48	TOP: 2.4
56. ANS: a	DIF: Knowledge-level	REF: 48-49	TOP: 2.4
57. ANS: d	DIF: Application-level	REF: 48-49	TOP: 2.4
58. ANS: d	DIF: Knowledge-level	REF: 50	TOP: 2.4
59. ANS: b	DIF: Knowledge-level	REF: 51	TOP: 2.5
60. ANS: c	DIF: Knowledge-level	REF: 53-55	TOP: NIP 2
61. ANS: b	DIF: Knowledge-level	REF: 58	TOP: NIP 2
62. ANS: a	DIF: Application-level	REF: 58	TOP: NIP 2
63. ANS: a	DIF: Knowledge-level	REF: 58	TOP: NIP 2
64. ANS: b	DIF: Knowledge-level	REF: 58	TOP: NIP 2

**Essay**

1. DIF: Knowledge-level	REF: 38-40	TOP: 2.1
2. DIF: Knowledge-level	REF: 41-42 43-44	TOP: 2.1 2.2
3. DIF: Application-level	REF: 43-44	TOP: 2.2
4. DIF: Knowledge-level	REF: 45	TOP: 2.2
5. DIF: Knowledge-level	REF: 45	TOP: 2.2
6. DIF: Knowledge-level	REF: 48-50	TOP: 2.4

**Matching**

1. ANS: r	DIF: Knowledge-level	REF: 38	TOP: 2.1
2. ANS: p	DIF: Knowledge-level	REF: 38	TOP: 2.1
3. ANS: k	DIF: Knowledge-level	REF: 38	TOP: 2.1
4. ANS: c	DIF: Knowledge-level	REF: 38	TOP: 2.1
5. ANS: e	DIF: Knowledge-level	REF: 38	TOP: 2.1
6. ANS: h	DIF: Knowledge-level	REF: 38	TOP: 2.1
7. ANS: n	DIF: Knowledge-level	REF: 38	TOP: 2.1
8. ANS: m	DIF: Knowledge-level	REF: 38	TOP: 2.1
9. ANS: l	DIF: Knowledge-level	REF: 38	TOP: 2.1
10. ANS: o	DIF: Knowledge-level	REF: 38	TOP: 2.1
11. ANS: f	DIF: Knowledge-level	REF: 38	TOP: 2.1
12. ANS: a	DIF: Knowledge-level	REF: 38	TOP: 2.1
13. ANS: i	DIF: Knowledge-level	REF: 38	TOP: 2.1
14. ANS: b	DIF: Knowledge-level	REF: 38	TOP: 2.1
15. ANS: g	DIF: Knowledge-level	REF: 38	TOP: 2.1
16. ANS: q	DIF: Knowledge-level	REF: 38	TOP: 2.1
17. ANS: j	DIF: Knowledge-level	REF: 38	TOP: 2.1
18. ANS: d	DIF: Knowledge-level	REF: 38 39	TOP: 2.1
19. ANS: b	DIF: Knowledge-level	REF: 47	TOP: 2.3

20. ANS: f	DIF: Knowledge-level	REF: 48	TOP: 2.4
21. ANS: c	DIF: Knowledge-level	REF: 47	TOP: 2.3
22. ANS: e	DIF: Knowledge-level	REF: 48	TOP: 2.4
23. ANS: a	DIF: Knowledge-level	REF: 47	TOP: 2.3
24. ANS: d	DIF: Knowledge-level	REF: 48	TOP: 2.4