Student Name _____

chapter 6 Tissues and Membranes

Answer Key: Textbook page references are provided as a guide for answering these questions. A complete answer key was provided for your instructor.

OBJECTIVES

1. List the four major types of tissues.
2. Do the following regarding epithelial tissue:
   - Describe the characteristics and functions of epithelial tissue.
   - Explain how epithelial tissue is classified.
   - List the types of epithelial tissue membranes.
   - Differentiate between endocrine and exocrine glands.
3. Describe the characteristics and functions of connective tissue, and list the types of connective tissue membranes.
4. Describe the characteristics and functions of nervous and muscle tissues.
5. Explain the process of tissue repair after an injury.
6. Differentiate between mucous and serous membranes.

Part I: Mastering the Basics

MATCHING

Types of Tissue

Directions: Match the following terms to the most appropriate definition by writing the correct letter in the space provided. Some terms may be used more than once. See text, pp. 77-86.

A. epithelial tissue
B. connective tissue
C. muscle tissue
D. nervous tissue

1. _____ Tissue that is avascular and is nourished from the underlying connective tissue
2. _____ Osseous tissue
3. _____ Attached to a basement membrane
4. _____ Blood, bone, cartilage, and adipose tissue
5. _____ Neurons and glia
6. _____ Classified as squamous, cuboidal, or columnar
7. _____ Classified as simple or stratified
8. _____ Has the greatest amount of intercellular matrix of the four tissue types
9. _____ Classified as skeletal, smooth, or cardiac
10. _____ Type of tissue that forms tough bands that attach muscle to bone
11. _____ Dense fibrous, reticular, and areolar
12. _____ Specialized type of this tissue stores fat
13. _____ A sarcoma arises from this type of tissue.
14. _____ A carcinoma arises from this type of tissue.
15. _____ Primary functions include secretion, absorption, excretion, and protection.
16. _____ Most abundant of the four tissue types
17. _____ Forms the epidermis
18. _____ Endocrine and exocrine glands arise from this type of tissue.
19. _____ Binds together parts of the body; examples include ligaments, tendons, capsules, and fascia
20. _____ Has two surfaces; one surface is always unattached or free, such as the surface of the outer skin and the lining of the mouth
21. _____ Chondrocytes and osteocytes
22. _____ Transitional; found in stretchy organs such as the urinary bladder
23. _____ Type of tissue that forms tough bands that attach bone to bone

MATCHING

Membranes

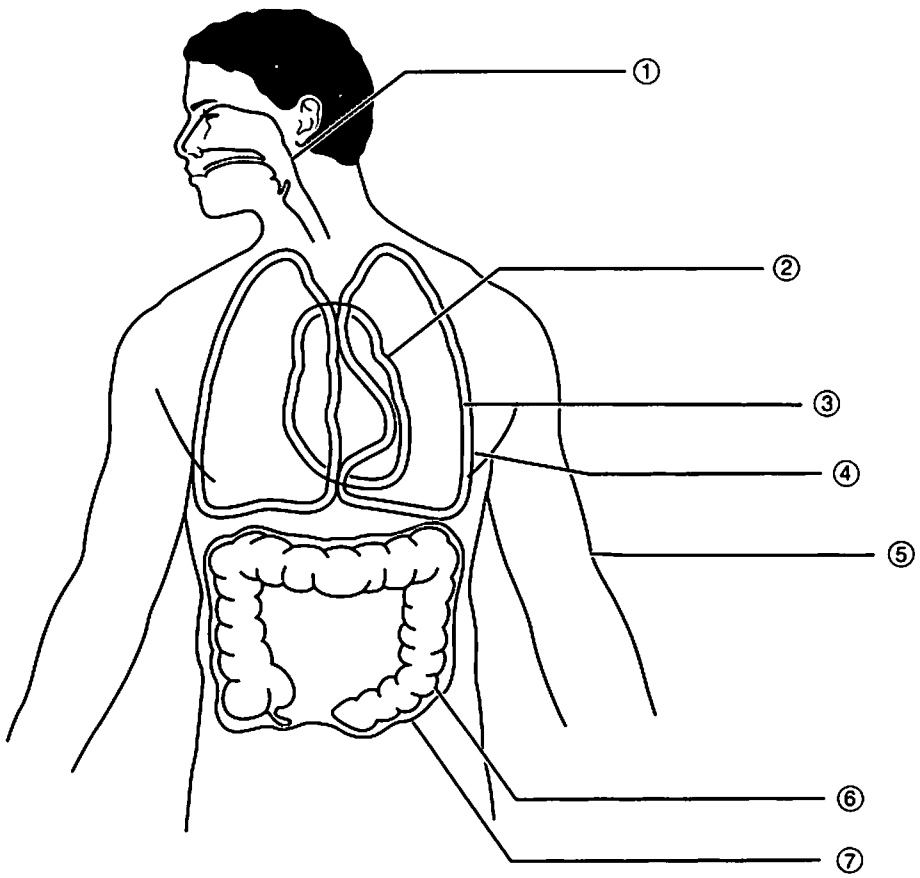
Directions: Match the following terms to the most appropriate definition by writing the correct letter in the space provided. See text, pp. 88-89.

A. visceral pleura
B. synovial membrane
C. visceral peritoneum
D. parietal pleura
E. pericardium
F. parietal peritoneum
G. cutaneous membrane
H. mucous membrane
I. connective tissue membrane

1. _____ Membrane lining all body cavities that open to the outside of the body
2. _____ Connective tissue membrane that lines the cavities of joints
3. _____ Skin
4. _____ Serous membrane that covers the outside of each lung
5. _____ Serous membrane that lines the inner wall of the abdominopelvic cavity
6. _____ Serous membrane that lines the organs of the abdominopelvic cavity
7. _____ Serous membrane that lines the walls of the thoracic cavity
8. _____ Synovial membrane and periosteum
9. _____ Lines the mouth, nose, and respiratory passages
10. _____ Sling that supports the heart

READ THE DIAGRAM

Directions: Referring to the illustration (Figure 6-9 in the text), write the numbers on the lines provided below. See text, pp. 88-89.



1. _____ Example of a mucous membrane
2. _____ Cutaneous membrane
3. _____ Parietal peritoneum
4. _____ Serous membrane that "hugs" the outer side of the lung
5. _____ A pericardial membrane

6. _____ Visceral peritoneum

7. _____ Serous membrane that "hugs" the inner walls of the thoracic cavity

8. _____ Membrane that surrounds the heart

9. _____ The intrapleural space is located between 4 and _____

10. _____ Most likely to become congested with the common cold

COLOR AND DRAW

Directions: Using the diagram from p. 36, color the following structures.

1. Color the parietal pleura ***blue.***
2. Color the visceral pleura ***green.***
3. Color the intrapleural space ***yellow.***
4. Draw in the diaphragm.

SIMILARS AND DISSIMILARS

Directions: Circle the word in each group that is least similar to the others. Indicate the similarity of the three words on the line below each question.

1. epithelial pleura muscle connective

_____

2. areolar cuboidal squamous columnar

_____

3. exocrine glandular epithelium meninges endocrine

_____

4. collagen reticular fibers simple squamous elastin

_____

5. fish scale–like tendons dice-shaped column-shaped

_____

6. areolar dense fibrous glandular epithelium osseous

_____

7. osseous glandular epithelium blood loose connective

_____

8. hyaline adipose fibrocartilage elastic

_____

9. fat pleura adipose connective

_____

10. cuboidal tendons fascia ligaments

_____

11. skeletal glia smooth cardiac

_____

12. cartilaginous connective nervous osseous

_____

13. mucous serous endocrine cutaneous

_____

14. synovial mucous periosteum meninges

_____

15. lipoma adenoma peritonitis osteoma

_____

16. melanoma decubitus bedsore pressure ulcer

_____

Part II: Putting It All Together

MULTIPLE CHOICE

Directions: Choose the correct answer.

1. The parietal and visceral pleurae
   a. are mucous membranes.
   b. secrete small amounts of serous fluid.
   c. are located in the abdominal cavity.
   d. surround the heart.

2. Epithelial tissue
   a. has extensive intercellular material.
   b. forms large continuous sheets of tissue.
   c. forms tendons, ligaments, and capsules.
   d. is described as visceral and parietal.

3. Glandular tissue
   a. is found only within the abdominal organs.
   b. arises from epithelial tissue.
   c. is classified as dense, fibrous, and areolar.
   d. stores fat.

4. Mucous membrane
   a. forms the pleurae.
   b. forms the peritoneal membranes.
   c. lines the respiratory tract.
   d. is a type of connective tissue membrane.

5. Squamous, cuboidal, and columnar
   a. refer to the layers of epithelial tissue.
   b. are types of nervous tissue.
   c. are shapes of epithelial tissue.
   d. are found only within the thoracic cavity.

6. Simple and stratified
   a. refer to the layers of epithelial tissue.
   b. are types of nervous tissue.
   c. are shapes of epithelial tissue.
   d. are found only within the thoracic cavity.

7. Which of the following membranes is confined to the thoracic cavity?
   a. meninges
   b. peritoneum
   c. synovial membranes
   d. pleurae

8. Because this type of tissue is so thin, it is concerned primarily with the movement of various substances across the membranes from one body compartment to another.
   a. connective tissue
   b. neuroglia
   c. simple squamous epithelium
   d. cartilage

9. Which of the following is most related to glandular epithelium?
   a. cuboidal epithelium
   b. skeletal, cardiac, and smooth
   c. tendons, ligaments
   d. adipose

10. Which of the following is related to endocrine glands?
    a. pleura and peritoneum
    b. serous and mucous
    c. ductless glands
    d. visceral and parietal

11. In which type of tissue is the intercellular matrix hardest?
    a. blood
    b. osseous
    c. simple squamous epithelium
    d. adipose

12. Which of the following is most descriptive of cartilage?
    a. squamous cell epithelium
    b. basement membrane
    c. hyaline and elastic
    d. endocrine and exocrine

13. Which of the following does not appear in the thoracic cavity?
    a. serous membranes
    b. pleural membranes
    c. serous fluid
    d. peritoneal membrane

14. Which of the following best describes scar tissue?
    a. sarcoma
    b. regeneration
    c. meninges
    d. fibrosis

15. Which of the following are described as parietal and visceral?
    a. mucous membranes
    b. serous membranes
    c. synovial membranes
    d. meninges

16. This condition is caused by prolonged pressure that results in a decrease in the blood supply to the tissues.
    a. peritonitis
    b. lactic acidosis
    c. decubitus ulcer
    d. meningitis

17. Which word is most descriptive of gangrenous tissue?
    a. necrotic
    b. scar
    c. fibrotic
    d. malignant

Student Name _____

18. Why do tissues become stiffer and less efficient with aging?
    a. The epithelial membranes become thicker.
    b. There is an increase in intracellular fluid.
    c. There is a decrease in collagen and elastin in connective tissue.
    d. Muscle and nerve tissue hypertrophy.

CASE STUDY

Six-year-old J.P. complained to her mom that she had a pain in her stomach. Her mom attributed the pain to too much junk food and suggested that she go to bed early. At 4 AM, J.P. awoke with severe abdominal pain, a high fever, and a rigid boardlike abdomen. Her physician admitted her to the hospital with a diagnosis of a ruptured appendix.

1. Which of the following is likely to develop in response to the ruptured appendix as waste (feces) leaks into the abdominopelvic cavity?
    a. peritonitis
    b. pleurisy
    c. hemorrhoids
    d. pericarditis

2. Which of the following became inflamed?
    a. pleura
    b. serous membrane
    c. meninges
    d. synovial membrane

Part III: Challenge Yourself!

GROUPS AND PUZZLE

1. Which group is incorrect?
    a. appearance of epithelial tissue: squamous, cuboidal, columnar
    b. types of muscle: skeletal, cardiac, and adipose
    c. types of nervous tissue: neurons and neuroglia
    d. types of fibers: collagen, elastin, and reticular

2. Which group is incorrect?
    a. shapes of epithelial tissue: squamous, cuboidal, and columnar
    b. types of connective tissue: adipose, areolar, and dense fibrous
    c. layers of epithelial tissue: simple and stratified
    d. serous membranes in thoracic cavity: pleura, pericardium, and peritoneum

3. Which group is incorrect?
    a. layers of connective tissue: simple and stratified
    b. types of tissues: epithelial, connective, nerve, and muscle
    c. types of nervous tissue: neurons and neuroglia
    d. types of connective tissue: areola, dense fibrous, reticular, cartilage, bone, and blood

PUZZLE

Hint: Scales, Columns, and Cubes

Directions: Perform the following functions on the Sequence of Words below. When all the functions have been performed, you are left with a word or words related to the hint. Record your answer below.

Functions: Remove the following:

1. Examples of connective tissue (six)
2. Two types of nervous tissue
3. Types of muscle tissue (three)
4. Two types of glands formed from glandular epithelium
5. Three serous membranes
6. Types of connective tissue that have a watery intercellular matrix
7. Type of membrane that lines the digestive and respiratory tracts
8. Connective tissue membrane that covers bone
9. Connective tissue membrane that covers the brain and spinal cord

Sequence of Words

MENINGESCARTILAGEEXOCRINES
MOOTHPERITONEUMTENDONSNE
UROGLIAAREOLARSKELETALPERI
OSTEUMBONEPERICARDIUMENDO
CRINEBLOODEPITHELIALTISSUEA
DIPOSELYMPHPLEURALIGAMENTS
CARDIACMUCOUSNEURON

Answer: _____