

Anatomy and Physiology 1 Worksheet for Tissue Types

Name _____

Read and study Chapter 4 on tissue types before you attempt this worksheet. This activity is to help you learn the four primary tissue types, their location and functions. **This worksheet must be turned in on Monday Feb. 11 at the beginning of class.**

Using the key choices, correctly identify the following *major* tissue types. Enter the appropriate answer in the answer blanks.

Key Choices

A. Connective

B. Epithelium

C. Muscle

D. Nervous

- _____ 1. Forms membranes
- _____ 2. Allows for movement of limbs and for organ movements within the body
- _____ 3. Uses electrochemical signals to carry out its functions
- _____ 4. Supports and reinforces body organs
- _____ 5. Cells of this tissue may absorb and/or secrete substances
- _____ 6. Basis of the major controlling system of the body
- _____ 7. Its cells shorten to exert force
- _____ 8. Forms endocrine and exocrine glands
- _____ 9. Surrounds and cushions body organs
- _____ 10. Characterized by having large amounts of extracellular material
- _____ 11. Allows you to smile, grasp, swim, ski, and throw a ball
- _____ 12. Widely distributed; found in bones, cartilages, and fat depots
- _____ 13. Forms the brain and spinal cord

Epithelial Tissue

1. List the six major functions of epithelium. _____

2. List six special characteristics of epithelium. _____

3. For 1–5, match the epithelial type named in Column B with the appropriate *location* in Column A.

Column A	Column B
_____ 1. Lines the stomach and most of the intestines	A. Pseudostratified ciliated columnar
_____ 2. Lines the inside of the mouth	B. Simple columnar
_____ 3. Lines much of the respiratory tract	C. Simple cuboidal
_____ 4. Endothelium and mesothelium	D. Simple squamous
_____ 5. Lines the inside of the urinary bladder	E. Stratified columnar
	F. Stratified squamous
	G. Transitional

Write T in the answer blank if a statement is true. If a statement is false, correct the underlined word(s) by writing the correct word(s) in the answer blank.

- _____ 1. Exocrine glands are classified functionally as merocrine, holocrine, or apocrine.
- _____ 2. The above classification refers to the way ducts branch.
- _____ 3. Most exocrine glands are apocrine.
- _____ 4. In apocrine glands, secretions are produced and released immediately by exocytosis.
- _____ 5. Holocrine glands store secretions until the cells rupture. Ruptured cells are replaced through mitosis.
- _____ 6. In apocrine glands, the secretory cells die when they pinch off at the apex to release secretions.
- _____ 7. A sweat gland is an example of a holocrine gland.
- _____ 8. The mammary gland is the most likely example of an apocrine gland.

Connective Tissue

1. Using the key choices, identify the following connective tissue types. Insert the appropriate answers in the answer blanks.

Key Choices

- | | |
|-------------------------------|--------------------------------|
| A. Adipose connective tissue | G. Fibrocartilage |
| B. Areolar connective tissue | H. Hyaline cartilage |
| C. Dense regular connective | I. Mucous connective |
| D. Dense irregular connective | J. Osseous tissue |
| E. Elastic cartilage | K. Reticular connective tissue |
| F. Elastic connective tissue | L. Vascular tissue |

- | | |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| _____ | 1. Parallel bundles of collagenic fibers provide strength; found in tendons |
| _____ | 2. Stores fat |
| _____ | 3. The skin dermis |
| _____ | 4. Hardest tissue of our "skull cap" |
| _____ | 5. Composes the basement membrane; surrounds and cushions blood vessels and nerves; its gel-like matrix contains all categories of fibers and many cell types |
| _____ | 6. Forms the embryonic skeleton; covers surfaces of bones at joints; reinforces the trachea |
| _____ | 7. Insulates the body |
| _____ | 8. Firm, slightly "rubbery" matrix; milky white and "glassy" in appearance |
| _____ | 9. Cells are arranged in concentric circles around a nutrient canal; matrix is hard due to calcium salts |
| _____ | 10. Contains collagenous fibers; found in intervertebral discs |
| _____ | 11. Makes supporting framework of lymphoid organs |
| _____ | 12. Found in umbilical cord |
| _____ | 13. Found in external ear and auditory tube |
| _____ | 14. Provides the medium for nutrient transport throughout the body |
| _____ | 15. Forms the "stretchy" ligaments of the vertebral column |

. Arrange the following tissue types from 1 to 3 in order of *decreasing* vascularity.

- _____ A. Cartilage
- _____ B. Areolar connective
- _____ C. Dense connective

. Using the key choices, select the structural or related elements of connective tissue (CT) types that permit specialized functions. Insert the appropriate answers in the answer blanks.

Key Choices

- | | | | |
|--------------------|---------------------|----------------|---------------------|
| A. Adipocytes | D. Elastic fibers | G. Macrophages | J. Osteocytes |
| B. Chondrocytes | E. Ground substance | H. Matrix | K. Osteoblasts |
| C. Collagen fibers | F. Hemocytoblast | I. Mesenchyme | L. Reticular fibers |

- _____ 1. Composed of ground substance and structural protein fibers
- _____ 2. Composed of glycoproteins and water-binding glycosaminoglycans
- _____ 3. Tough protein fibers that resist stretching or longitudinal tearing
- _____ 4. Primary bone marrow cell type that remains actively mitotic
- _____ 5. Fine, branching protein fibers that construct a supportive network
- _____ 6. Large, irregularly shaped cells, widely distributed, often found in CT; they engulf cellular debris and foreign matter and are active in immunity
- _____ 7. The medium through which nutrients and other substances diffuse
- _____ 8. Living elements that maintain the firm, flexible matrix in cartilage
- _____ 9. Randomly coiled protein fibers that recoil after being stretched
- _____ 10. The structural element of areolar tissue that is fluid and provides a reservoir of water and salts for neighboring tissues
- _____ 11. In a loose CT, the nondividing cells that store nutrients
- _____ 12. The embryonic tissue that gives rise to all types of CT
- _____ 13. Cellular elements that produce the collagen fibers of bone matrix

Nervous Tissue

1. Describe briefly how the particular structure of a neuron relates to its function in the body. _____

2. Circle the word that does *not* apply to neuroglia: Support Insulate Conduct Protect

Muscle Tissue

1. The three types of muscle tissue exhibit certain similarities and differences. Insert Sk (skeletal), C (cardiac), or Sm (smooth) into the appropriate blanks to indicate which muscle type exhibits each characteristic.

Characteristic

- | | |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------|
| _____ 1. Voluntarily controlled | _____ 9. Contains spindle-shaped cells |
| _____ 2. Involuntarily controlled | _____ 10. Contains cylindrical cells with branching ends |
| _____ 3. Banded appearance | _____ 11. Contains long, nonbranching cylindrical cells |
| _____ 4. Uninucleate | _____ 12. Displays intercalated discs |
| _____ 5. Multinucleate | _____ 13. Concerned with locomotion of the body as a whole |
| _____ 6. Found attached to bones | _____ 14. Changes the internal volume of an organ as it contracts |
| _____ 7. Enables you to swallow | _____ 15. Tissue of the circulatory pump |
| _____ 8. Found in the walls of the small intestine, uterus, bladder, and veins | |

2. Develop two criteria that would identify the three different muscle tissues in two steps.

Step 1: _____

Step 2: _____