

**A. Short Answer**

1. Mature cartilage cells are called \_\_\_\_\_.
2. Which type of muscle is not striated? \_\_\_\_\_
3. Which type of muscle has multinucleated cells? \_\_\_\_\_
4. Name a connective tissue that does not usually contain fibers. \_\_\_\_\_
5. Nearly every epithelium rests on a layer of \_\_\_\_\_ tissue.
6. Fat is also called \_\_\_\_\_ tissue, and its cells are called \_\_\_\_\_.
7. Most endocrine glands secrete their products into the \_\_\_\_\_.
8. A gland whose secretion consists of disintegrated cells is called a/an \_\_\_\_\_ gland.
9. \_\_\_\_\_ cells in simple columnar and pseudostratified columnar epithelium secrete mucus.
10. The fluid between cells of a tissue is called \_\_\_\_\_.
11. The epithelium most resistant to stress and abrasion is \_\_\_\_\_.

**B. Matching**

- |                           |                           |                              |                            |
|---------------------------|---------------------------|------------------------------|----------------------------|
| <b>A. transitional</b>    | <b>G. tight junctions</b> | <b>M. cardiac</b>            | <b>S. skeletal</b>         |
| <b>B. collagen</b>        | <b>H. adipocytes</b>      | <b>N. metaplasia</b>         | <b>T. mesoderm</b>         |
| <b>C. apoptosis</b>       | <b>I. ectoderm</b>        | <b>O. histiocytes</b>        | <b>U. lamina propria</b>   |
| <b>D. hyaluronic acid</b> | <b>J. striations</b>      | <b>P. intercalated discs</b> | <b>V. desmosomes</b>       |
| <b>E. gap junctions</b>   | <b>K. dense irregular</b> | <b>Q. dermatophyte</b>       | <b>W. chondrocytes</b>     |
| <b>F. endoderm</b>        | <b>L. smooth</b>          | <b>R. necrosis</b>           | <b>X. pseudostratified</b> |

- \_\_\_\_\_ 1. The ciliated epithelium in most of the respiratory tract.
- \_\_\_\_\_ 2. The only type of muscle under voluntary control.
- \_\_\_\_\_ 3. Contains branched, mononucleated cells.
- \_\_\_\_\_ 4. Embryonic origin of mucous membranes in respiratory tract.
- \_\_\_\_\_ 5. Distinguishes cardiac muscle from skeletal muscle.
- \_\_\_\_\_ 6. Pathological tissue death.

**C. True or False (if false, cross out the incorrect portion and write in the correction).**

1. Transitional epithelium is found only in the urinary and respiratory tracts.
2. In a pseudostratified epithelium, all cells touch the basement membrane.
3. The two types of involuntary muscle are skeletal and cardiac.
4. Both epithelia and cartilage are devoid of (lack) blood vessels.
5. Columnar epithelium is found in the heart among other places.
6. Both muscle and bone arise from embryonic mesoderm, but only bone arises from cartilage.
7. There are only four primary tissue types in the human body.

**D. Multiple Choice**

\_\_\_\_\_ 1. Intercellular junctions called intercalated discs are an aid to identifying \_\_\_\_\_ tissue.

- |                   |                  |
|-------------------|------------------|
| A. areolar        | D. smooth muscle |
| B. osseous (bone) | E. nervous       |
| C. cardiac muscle |                  |

\_\_\_\_\_ 2. Which of these is **NOT** a connective tissue?

- |              |                   |
|--------------|-------------------|
| A. blood     | D. areolar        |
| B. muscle    | E. osseous (bone) |
| C. cartilage |                   |

\_\_\_\_\_ 3. Hyaline cartilage can be found in:

- |                                      |                              |
|--------------------------------------|------------------------------|
| A. the lamina of the small intestine | D. the wall of the esophagus |
| B. rings around the trachea          | E. tendons and ligaments     |
| C. the walls of blood vessels        |                              |

\_\_\_\_\_ 4. The most likely place to find adipocytes is in:

- |                                     |                      |
|-------------------------------------|----------------------|
| A. the hypodermis                   | D. hyaline cartilage |
| B. osseous (bone) tissue            | E. mucous membranes  |
| C. dense regular connective tissues |                      |

\_\_\_\_\_ 5. The least vascular (having the fewest blood vessels) of the following tissues is:

- |                          |                   |
|--------------------------|-------------------|
| A. cardiac muscle        | D. areolar tissue |
| B. epithelium            | E. adipose tissue |
| C. osseous (bone) tissue |                   |

\_\_\_\_\_ 6. A tissue specialized for energy storage and thermal insulation is:

- A. cartilage
- B. muscular
- C. adipose
- D. epithelium
- E. nervous

\_\_\_\_\_ 7. A decrease in the size of a tissue or organ is:

- A. hyperplasia
- B. metaplasia
- C. hypertrophy
- D. atrophy
- E. apoptosis

\_\_\_\_\_ 8. The type of epithelium that is most commonly ciliated is:

- A. simple cuboidal
- B. simple squamous
- C. pseudostratified
- D. transitional
- E. stratified squamous

\_\_\_\_\_ 9. The epithelium best suited for resisting abrasion is:

- A. pseudostratified
- B. transitional
- C. simple squamous
- D. simple columnar
- E. stratified squamous

\_\_\_\_\_ 10. The formation of scar tissue is called:

- A. regeneration
- B. necrosis
- C. neoplasia
- D. metaplasia
- E. fibrosis

\_\_\_\_\_ 11. All adult human organs are made of just four primary categories of tissue, including all **except**

- A. fibrous
- B. epithelial
- C. nervous
- D. muscular
- E. connective

\_\_\_\_\_ 12. Heat production is a function of both \_\_\_\_\_ tissues.

- A. nervous and muscular
- B. adipose and muscular
- C. epithelial and connective
- D. nervous and connective
- E. osseous (bone) and reticular

\_\_\_\_\_ 13. Tendons and ligaments are made of \_\_\_\_\_ tissue.

- A. muscular
- B. dense irregular connective
- C. osseous (bone)
- D. areolar
- E. dense regular connective

\_\_\_\_\_ 14. Connective tissue:

1. Includes fewer cells than epithelial tissue.
2. Functions in storing energy reserves and immunity, for example.
3. Is made up of large areas of ground substance containing glycosaminoglycan.
4. Is normally highly vascularized (lots of blood vessels).

- A. 1 & 3  
B. 2 & 4  
C. 1, 2, & 3  
D. 4 only  
E. All of the above

**E. Word Origins: Identify the meaning of the portion of the words in their context or as a pre/suffix.**

1. In the word **ectoderm**, *ecto* means \_\_\_\_\_.
2. In the word **mesoderm**, *meso* means \_\_\_\_\_.
3. In the word **monocyte**, *mono* means \_\_\_\_\_.
4. In the word **fibroblast**, *blast* means \_\_\_\_\_.
5. In the word **reticular**, *icul* means \_\_\_\_\_.
6. In the word **leukocyte**, *leuko* means \_\_\_\_\_.
7. In the word **chondrocyte**, *chondro* means \_\_\_\_\_.
8. In the word **periosteum**, *peri* means \_\_\_\_\_.
9. In the word **desmosome**, *desmo* means \_\_\_\_\_.
10. In the word **merocrine**, *crin* means \_\_\_\_\_.
11. inter- means \_\_\_\_\_.
12. -trophy means \_\_\_\_\_.
13. apo- means \_\_\_\_\_.
14. hyal- means \_\_\_\_\_.
15. kerat- means \_\_\_\_\_.

**F. Which One Does Not Belong? Identify which option does NOT fit with the others, then write a SHORT explanation of why. There may be a couple of acceptable answers, depending on your reply.**

1. a) areolar                      b) dense regular                      c) adipose                      d) reticular
2. a) cartilage                      b) blood                      c) bone                      d) nerve
3. a) blood                      b) muscle                      c) nerve                      d) epithelium

**G. Matching Exercise: Match the tissue with its function and/or structure.**

- |  |                             |
|--|-----------------------------|
| <b>A. simple squamous</b>                    | <b>L. dense regular</b>     |
| <b>B. simple cuboidal</b>                    | <b>M. dense irregular</b>   |
| <b>C. simple columnar</b>                    | <b>N. hyaline cartilage</b> |
| <b>D. pseudostratified</b>                   | <b>O. elastic cartilage</b> |
| <b>E. keratinized stratified squamous</b>    | <b>P. fibrocartilage</b>    |
| <b>F. nonkeratinized stratified squamous</b> | <b>Q. bone</b>              |
| <b>G. stratified cuboidal</b>                | <b>R. blood</b>             |
| <b>H. transitional epithelium</b>            | <b>S. nerve</b>             |
| <b>I. areolar tissue</b>                     | <b>T. skeletal muscle</b>   |
| <b>J. reticular tissue</b>                   | <b>U. cardiac muscle</b>    |
| <b>K. adipose tissue</b>                     | <b>V. smooth muscle</b>     |

- \_\_\_\_\_ 1. Most attached to bones; body movement, facial expression, breathing, speech.
- \_\_\_\_\_ 2. Found on bone ends, eases joint movements, keeps airways open.
- \_\_\_\_\_ 3. Contained in heart and blood vessels; gas transport, defense.
- \_\_\_\_\_ 4. Stretches to allow filling of bladder, ureter.
- \_\_\_\_\_ 5. Found only on palms and soles.
- \_\_\_\_\_ 6. Underlies most epithelia, loosely binds them to deep tissues; surrounds nerves, vessels.
- \_\_\_\_\_ 7. Resists compression and absorbs shock in intervertebral discs.
- \_\_\_\_\_ 8. Layers of flat cells which resist pathogens in oral cavity, vagina.
- \_\_\_\_\_ 9. Absorption and secretion, lining of intestine, uterus.
- \_\_\_\_\_ 10. Allows rapid diffusion, secretes serous fluid; found in alveoli and lining of heart.
- \_\_\_\_\_ 11. Durable, withstands multiple stresses; found in deep dermis and capsules around viscera.
- \_\_\_\_\_ 12. Binds bones together, attaches muscle to bone.
- \_\_\_\_\_ 13. Upper respiratory tract, secretes and moves mucus.
- \_\_\_\_\_ 14. Absorption and secretion, mucous coat; found in thyroid follicles.
- \_\_\_\_\_ 15. Supportive stroma for lymph nodes, spleen, thymus.