

**HUMAN ANATOMY REVIEW WORKSHEET -- Exam I**

DUE: Day of Exam I      POINTS POSSIBLE: 20

*Remember, this is not intended to be a comprehensive review sheet (i.e., it doesn't cover everything) but rather to cover the more difficult or confusing concepts & terms. For a comprehensive review, (1) KNOW YOUR NOTES and (2) write out answers to all Course Objectives (attached), and (3) do the "Testing Your Recall" questions at the end of each text chapter (relevant questions are listed on my website).*

**FYI: Be able to label all assigned features on the following text Figures (available on my website): 1.6, 1.10, 1.11, 1.13(add Left & Right), 1.14, 2.3, 2.15a, 3.3, 3.31, 5.1, 5.3, 6.2, 6.5.**

- State which of the four basic tissue types each of the following tissues would most likely be.
  - \_\_\_\_\_ a. a sheet of multinucleated, striated cells found under the scalp
  - \_\_\_\_\_ b. a clump of elongated cells found in the skin that shortens when touched
  - \_\_\_\_\_ c. hollow tubes of cells found in the liver that secrete bile
  - \_\_\_\_\_ d. several layers of cells forming a tube carrying saliva into the oral cavity
  - \_\_\_\_\_ e. highly branched cells found in the wall of the stomach that generate electrical impulses as the stomach fills with food
  - \_\_\_\_\_ f. a tissue found in the uterus staining positively for collagen and reticular fibers
  - \_\_\_\_\_ g. a clump of highly branched cells outside the carotid artery that generate electrical impulses whenever the pH of the blood changes
- Collagen forms the (inorganic/organic) component of bone matrix and gives bone its (tensile strength/hardness).
- Trabeculae are found only in (cancellous/dense) bone, while osteons are found only in (cancellous/dense) bone.
- Give the "opposite" for each of the following directional terms.
 

caudal -	lateral -	distal -
inferior-	ventral -	superficial -
posterior -		
- List and describe the location of the 3 major subdivisions (compartments) of extracellular fluid.
- What is the structural difference between these types of "membranes"?
  - a. plasma membrane --
  - b. basement membrane --
  - c. epithelial membrane --
- What is the structural difference between these types of "fibers"?
  - a. muscle fiber --
  - b. connective tissue fiber --
  - c. nerve fiber --

8. Give another name for these terms and features.

- |                                  |                           |
|----------------------------------|---------------------------|
| a. frontal plane-                | f. osteon-                |
| b. midsagittal plane-            | g. central canal-         |
| c. transverse plane-             | h. merocrine sweat gland- |
| d. hypogastric abdominal region- |                           |
| e. perforating canal-            |                           |

9. List four structural/histological differences between thick skin and thin skin.

10. Chondroblasts are involved in (intramembranous/endochondral) ossification. In a teenager, chondroblasts are involved in (interstitial/appositional) growth.

11. List the tissues or organs in which you would find the following.

- |                   |                          |
|-------------------|--------------------------|
| a. osteoclast --  | d. keratinocyte --       |
| b. dendrites --   | e. intercalated discs -- |
| c. chondrocytes-- | f. neuroglia --          |

12. List the five zones of the metaphysis, from epiphysis to diaphysis.

13. Complete this chart, comparing and contrasting the two types of sudoriferous glands.

<b>Feature</b>	<b>Apocrine sweat gland</b>	<b>Merocrine (eccrine) sweat gland</b>
Function		
Body-wide location & relative number of each		
Structure: lumen size & location of duct		

14. Give meanings for the following word parts. (FYI → List & define a term that uses each of these word parts)

- |         |         |        |          |
|---------|---------|--------|----------|
| patho-  | hypo-   | inter- | retic-   |
| poie-   | pseudo- | intra- | papilla  |
| -tomy   | caud-   | endo-  | sub-     |
| cardio- | quad-   | cuta-  | cyt-     |
| lys-    | sect-   | derm-  | hemo-    |
| gen-    | plex-   | peri-  | squam-   |
| hyper-  | strat-  | para-  | chondro- |
| soma    | striat- | exo-   | pili     |
| sudor-  | epi-    | osteo- | dendro-  |
| lamella | glia    | a-     | -blast   |
| lamina  | cerum-  | myo-   | histo-   |
| -ology  |         | morph- |          |
| melan-  |         | -clast |          |

## **Anatomy Educational Objectives FYI**

*(If you really want a thorough review, you should be able to write out complete “answers” to all these objectives.)*

### A Note on Terminology

Building an anatomical/physiological vocabulary is essential for success in both courses and your career. For each unit/system, be able to define and use each assigned word root.

### **I. Body as a Whole**

1. Define and give an example of each level of structural organization in the human body.
2. Describe and give examples of the relationships between structure and function at each level of organization.
3. Define anatomy and its subdisciplines.
4. Define the assigned word roots used to construct anatomical terminology. **(This objective is to be met in all subsequent topics.)**
5. List and give examples of the three parts of a typical medical term.
6. State why medical terms are preferred over eponyms.
7. Define the anatomical position.
8. Give the anatomical terms for assigned body regions.
9. Define all assigned directional terms and use each correctly in a sentence.
10. Define and identify examples of anatomical planes and sections.
11. List and identify the major body cavities and their general contents.
12. Sketch and label the abdominopelvic quadrants and regions.

### **II. Cells**

1. List the 3 major structural components of the human body.
2. List the 2 major compartments of body fluids.
3. List the 3 major subdivisions of extracellular fluid.
4. List and sketch 9 types of cell shapes.
5. List 4 major structural components of a cell and the major functions of each component.
6. List 3 types of cell extensions and the function of each.
7. Describe, recognize, and give functions for assigned cell organelles.
8. Explain why the cell is considered the body's unit of structure and function.
9. Describe the fluid-mosaic model of the plasma membrane.

### **III. Tissues**

1. List the four basic tissue types.
2. Sketch an example of how a 3-D structure looks in a 2-D microscopic view.
3. Describe the general structural features and functions of epithelial tissues.
4. Differentiate the two types of glandular epithelium.
5. Describe the criteria used to classify covering and lining epithelia.
6. Give a description, location and function for simple squamous epithelium.
7. Describe the general structural features and functions of connective tissues.
8. Give a description, location and function for areolar connective tissue.
9. Describe the locations and structure of three types of epithelial membranes.
10. Describe the locations of the three types of serous membranes.
11. Describe the general structural features and functions of muscle tissues.
12. Give specific structural descriptions, locations and functions for the three types of muscle tissue.
13. List the two main cell types of nervous tissue.
14. Sketch and label the 3 major parts of a neuron.
15. Describe the two major tissue types and two fiber types found in a neuromuscular junction.

#### **IV. Integumentary System**

1. List the organs comprising the integumentary system.
2. List 5 functions of the integumentary system.
3. Describe the structure of the epidermis, including its layers and cell types.
4. Compare and contrast thick skin with thin skin, including structure, function, & location.
5. Describe the structure of the dermis.
6. Describe the structure of the following accessory organs of the integumentary system: subcutaneous layer, hair (and arrector pili), nails, merocrine (eccrine) and apocrine glands, sebaceous glands.
7. Compare the location and functional features of the two dermal capillary networks.
8. List the three pigments primarily responsible for skin color.
9. List and define 6 terms relating the color of skin to its diagnostic value.

#### **V. Skeletal System – Bone tissue**

1. List 3 major components of the skeletal system.
2. List 5 functions of the skeletal system.
3. Sketch and label the features of a typical long bone.
4. Describe the blood and nerve supply to a typical long bone.
5. Name and describe the cell types involved in bone formation and remodeling.
6. List the components (and percentage of each) of bone matrix.
7. Sketch, label, and describe the histology of compact and spongy bone, including the location of each type.
8. Describe and sketch the processes of intramembranous and endochondral ossification in detail.
9. Describe and sketch the zones of an epiphyseal plate.
10. Compare and contrast the processes of interstitial and appositional growth.
11. Explain the process and purpose of bone remodeling.
12. Describe the causes, consequences, and prevention of osteoporosis.

#### **Examples of some integrative objectives**

1. Describe the structural differences between a plasma membrane, a basement membrane, and an epithelial membrane.
2. Describe the structural differences between a muscle fiber, a connective tissue fiber, and a nerve fiber.
3. List 3 examples of the use of the word “interstitial” in this unit.

**Recall and apply all “deeper insights” assigned for this unit.**