Study Guide # 2

Human Anatomy

**Osseous (Bone) Tissue**

1. Discuss the functions of Bone. Describe the 6 broad categories for classifying bone by *shape*.
2. Describe the anatomy of a typical long bone, like the ‘split’ femur or tibia.
3. List the organic and inorganic components of bone. How do they contribute to bone structure/function?
4. Describe the 4 types of bone cells discussed in class. What are the functions of each cell type?
5. Name the important hormones affecting bone growth, remodeling and repair, and briefly how they act.
6. List the 4 essential things that are required for normal bone growth, repair and remodeling.
7. Briefly compare intramembranous and endochondral bone formation. Discuss disorders of bone.
8. How are bone fractures classified? List and briefly describe the bone fractures discussed in class.

**Axial and Appendicular Skeleton**

1. Describe the functional anatomy of the axial skeleton (skull, vertebral column, rib cage), including sinuses, fontanelles, sutures; and the appendicular skeleton (pectoral & pelvic girdles).
2. Describe the natural curvatures of the vertebral column and 3 abnormal curvatures.
3. Complete matching columns in worksheets. Be familiar with bony landmark terminology.

**Articulations (Joints)**

1. Name and define the 3 Functional and Structural types of joints. Give specific examples of each.
2. What are the 6 categories of synovial joints? List them with *specific* examples for each.
3. Draw and label a typical synovial joint, include and describe the important accessory structures.
4. What is the function of locking the knee when standing for long periods? Describe the mechanisms for locking and unlocking the knee, including the muscles and actions used.
5. Detail the anatomy of the knee joint. What makes some joints more stable than others? Give specific examples in the body. Describe the trade-off between stability & mobility.
6. Compare monoaxial, biaxial and triaxial movement in relation to synovial joints of the body.
7. Define and describe the following types of movement: **1)** gliding motion, **2)** angular motions – flexion, extension, hyperextension, abduction, adduction, circumduction, **3)** rotational movements – internal, external, medial, lateral rotation and pronation, supination, **4)** special movements – (foot) inversion, eversion, dorsiflexion, plantarflexion, (hand) opposition, reposition, protraction, retraction, elevation, depression.
8. Briefly describe some diseases and disorders of articulations discussed in class.

**The Muscular System**

1. Describe the 3 types of muscle tissue, their location and how they differ from one another.
2. Describe 4 basic properties of all muscle tissue. Describe the major functions of skeletal muscle.
3. Give examples of how skeletal muscle names can involve: shape, size, location, action, orientation, etc.
4. How can skeletal muscles be classified by the arrangement of their fascicles? Include categories.
5. Describe the gross anatomy of muscle cell (fibers), fascicles and a whole muscle.
6. What are the 3 layers of connective tissue in skeletal muscle? Describe their arrangement.
7. What is the function of a lever in the body? Discuss the bone-joint-skeletal muscle relationship.
8. Describe the 3 classes of levers in the body and give a specific example of each type in the body.
9. What is skeletal muscle origin, insertion and action (O/I/A)? Compare antagonistic/synergistic.
10. Analyze (Include O/ I/A) the muscles of the: a) rotator cuff; b) ‘hamstrings’; c) quadriceps; d) 'calf'.