UNIT 6: PHYSIOLOGY
Chapter 33: Protection, Support, and Movement

I. Skeletal System (33.1)

A. Skeletal system is organ system that ________________ organs and ________________ you body

1. Includes bones and ________________ tissue that holds bones together

2. ________ bones

   a. **Appendicular skeleton**- part of skeleton that allows body to ____________ (legs, arms, feet, and hands)

   b. **Axial skeleton**- bones in trunk and head of body

      1). ______________ weight of body

      2). _____________ internal organs and tissues

3. _______________- flexible connective tissue found between your bones

   a. ________________ bones and allows for smooth movement

   b. Sometimes connects two ____________

B. Bones connect to form joints

1. ______________ - place where two bones meet.

   a. Allows for different amount of ______________

   b. Some do not allow movement

   c. Several types of joints (Gliding, Pivot, Ball-and-socket, saddle, and hinge joints)

2. ________________- long, flexible band of connective tissue that connects two bones across a joint

C. Bones are living ______________

1. Bones also produce red ______________ cells and store ________________

2. **Two** types of bone structure
a. ______________________bone- hard, dense layer that protects against jolts and bumps (found on outside)

b. ______________________bone- less dense that is surrounded by compact bone

   1). Holds and protects red or yellow bone
   ______________________

   2). Red bone marrow produces red blood cells and yellow stores ______

3. Bone growth

   a. Human embryos do not have bones at first. Skeleton made of _________________

   b. Over time replaced by _____________

   c. Bones form when cells called osteoblasts secrete chemicals that cause cartilage to ________________.

      1). Process called ______________________

      2). Bones grow from their ______

   d. ________________ is continually being deposited and removed from your bones.

      1). Bones strongest in person between 18-30 years old

      2). After that, bones lose ________________ when calcium taken to be used elsewhere in the body

II. Muscular System (33.2)

A. Body system that ___________ bones at joints and _______________ substances such as blood, food, and fluids throughout the body

   1. Contain many ______________________ to power contractions

   2. Muscle contractions help regulate body
   ______________________

   3. Cells form muscle fibers that ____________, or shorten, when stimulated by nervous system and produce
   ______________________
B. Humans have ______ types of muscle

1. ________________ muscle - attaches to skeleton by tendons
   a. ________________ - connective tissue begins in muscle and continues into the bone or other muscle
   b. Most skeletal muscle under voluntary __________
   c. Two types of muscle fibers
      1). __________ twitch fibers - respond quickly to nerve impulse (quick, sudden movements)
      2). __________ twitch fibers - respond slowly and responsible for sustained movements

2. Smooth muscle - found in many body systems
   a. ________ under voluntary control
   b. Surrounds ___________ vessels and internal organs
   c. ___________ food through digestive tract, empties bladder, controlling blood flow

3. Cardiac muscle - found only in __________
   a. Use huge amounts of _________ (have more mitochondria than skeletal muscle cells)
   b. Under ___________________ control

C. Muscle contraction

1. Controlled by ______________ system

2. Muscles composed of long strands of ____________
   a. Filaments are arranged in regular pattern
   b. ________ and ___________ filaments work together to cause contraction
   c. _____________ ions stimulate contractions
III. Integumentary System (33.3)

A. Includes __________, hair, nails, oil glands, and sweat glands

1. ______________ you body

2. Help maintain ______________________

B. All tissues of integumentary system housed in skin

1. Made up of three layers

   a. __________________- outermost layer

       1). First layer of protection

       2). Contains pores which sweat, salts, and oils can leave the body

       3). Surface consists mostly of __________

   a). ______________ builds up in areas that need extra protection (souls of feet, etc.)

   b). ______________- dark pigment that absorbs harmful UV sunlight rays

b. ________________- layer under epidermis

   1). Contains glands and cells that produce elastin and collagen

   2). Contains __________ follicles

   3). _____________ glands- help to control body temperature

   4) Sebaceous glands- produce _________ that lubricate the skin and keep it waterproof

   b. Subcutaneous __________ - layer of fat cells protects and cushions larger blood vessels and neurons. It also _________________ the muscles and internal organs