A&P Chapter 4 Skin and Body Membranes

1. Distinguish epithelial membranes and connective tissue membranes with examples.

---body membranes which cover surfaces, line body cavities, and form protective (often lubricating) sheets around organs form two major groups

---**epithelial membranes** include the cutaneous, mucous, and serous membranes

--all contain epithelial sheet always combined with underlying connective tissue

--these membranes are actually simple organs

---**connective tissue membranes** represented by synovial membranes

---are classified in part according to their tissue makeup

2. Name an example of the cutaneous membrane, categorize it, and state the type of epithelial tissue involved.

---cutaneous membrane is the SKIN

---its superficial epidermis composed of keratinizing stratified squamous epithelium

---underlying DERMIS is mostly dense (fibrous) connective tissue

---unlike the other epithelial membranes, the cutaneous membrane is exposed to air and is a DRY membrane

3. Define mucous membranes, categorize them, and state general functions.

---**mucous membrane (mucosa)** is composed of epithelium (type varies with site) resting on loose connective tissue membrane called **lamina propria**

---mucous membrane lines ALL body cavities that open to the exterior

--hollow organs of respiratory, digestive, urinary, and reproductive tracts

---most mucosae contain either stratified squamous epithelium (mouth and esophagus) or simple columnar epithelium (rest of digestive tract)

---are “wet” or moist membranes continually bathed in secretions or in case of urinary mucosae, urine

---epithelium of mucosae often adapted for absorption/secretion

---mucosae of respiratory/digestive tracts secrete large amounts of protective, lubricating mucus

---that of urinary tract does NOT secrete mucus

4. Define serous membranes, relate them to pairing, and define serous fluid.

---**serous membranes** composed of layer of simple squamous epithelium resting on thin layer of areolar connective tissue

---serous membranes line body cavities that are closed to exterior (except for dorsal body cavity & joint cavities)

---serous membranes occur in PAIRS
---**parietal layer** lines a specific portion of wall of ventral body cavity, then folds back on itself to form **visceral layer** which covers outside of the organs in cavity
---in body, serous layers separated by thin, clear fluid called **serous fluid** which is secreted by both membranes
--serous fluid allows organs to slide easily across cavity walls and one another without friction as they carry out their functions
--extremely important when mobile organs such as pumping heart and churning stomach involved

5. State the specific names given to serous membranes in the abdominal cavity, thoracic cavity, and around the heart.
---specific names of serous membranes depend of their locations
--**peritoneum** is serosa lining abdominal cavity and covering its organs
--**pleura** is serosa lining the lungs
--**pericardium** is serosa lining around the heart

6. Describe connective tissue membranes to epithelial content, locations, and fluid produced.
---composed of connective tissue and contain NO epithelia cells
---these membranes line fibrous capsules surrounding joints
---provide smooth surface and secrete lubricating fluid called **synovial fluid**
---also line small sacs of connective tissue called **bursae** and the tubelike **tendon sheaths**
--both of these cushion organs moving against each other during muscle activity (such as movement of tendon across a bone's surface

7. State the major organ of the integumentary system.
---skin is the major organ of the integumentary system

8. State the functions of skin.
---protection; insulation; cushions; protection from mechanical damage (bumps/cuts), chemical damage (acids/bases), thermal damage (heat and cold), ultraviolet radiation (sunlight), and bacteria
---uppermost layer of skin full of keratin and **cornified (hardened)** to prevent water loss from body surface
---skin's capillary network and sweat glands play important role in regulating heat loss from body surface
---skin acts as mini-excretory system: urea, salts, and water are lost when we sweat
---skin manufactures several proteins important to immunity and synthesizes vitamin D

---**cutaneous sensory receptors** (part of nervous system) located in skin
--tiny sensors include touch, pressure, temperature, and pain receptors

9. Outline the layers involved in structure of skin.

---skin is composed of two kinds of tissue
---outer **epidermis** composed of stratified squamous epithelium capable of keratinizing (becoming hard and tough)
---underlying **dermis** composed of dense connective tissue
---epidermis and dermis firmly connected
--burn or blister may cause them to separate = blister
---**epidermis** composed of five zones or layers called **strata**
--from inside out they are: **stratum basale**, **spinosum**, **granulosum**, **lucidum**, **and corneum**
---**dermis** composed of two zones or layers
--from inside out they are: **reticular layer** and **dermal papillae**

10. Highlight the information related to the layers of the epidermis.

---**stratum basale** is deepest cell layer of epidermis
--lies closest to dermis and contains only epidermal cells that receive adequate nourishment via diffusion of nutrients from dermis
--these cells constantly undergoing mitosis; hence its alternate name of **stratum germinativum**
-millions of new cells produced daily
---**stratum spinosum** situated above stratum basale and means “spiny layer”
--consists of 8-10 layers of cells and keratinocytes (most abundant epithelial cells) are bound together by desmosomes
--some cells in this layer continue to divide
---**stratum granulosum** (grainy layer) is layer of cells superficial to stratum spinosum
--consists of 3-5 layers of keratinocytes
--most cells in this layer have stopped dividing
--cells being manufacturing large quantities of keratohyalin and keratin
--cells become thinner and flatter as keratin fibers develop
--cell membrane thickens, nuclei and organelles disintegrate
--cells die and dehydrate creating tightly interlocked layer of keratin fibers surrounded by keratohyalin
---**stratum lucidum** occurs in thick skin of palms and soles
--glassy stratum lucidum (clear layer) covers stratum granulosum
--cells in this layer flattened, densely packed, and filled with keratin