Honors Anatomy & Physiology
Mid Term Review

Chp. 1

1.Be able to define anatomy & physiology.
2. What are the 2 types of anatomy?
3. Explain how *receptors, effectors & control centers* maintain *homeostasis*.
4. Review the medical terminology prefixes (notes) & anatomical terms.
5. Know the anatomical body sections & anatomical position.
6. Know the organ systems & their major function(s).
7. Be able to identify the body & cranial cavities on a diagram.
8. Know the levels of organization (6) from simplest to most complex.

Chp 2

1.a) How many elements are found in the human body? b) List the 4 most abundant elements in the human body.
2. What is an *ion* & the difference between an *ionic* and *covalent* bond?
3. Atoms form bonds with other element by _____, _____ or _____ electrons.
4. Write the chemical formula for water. Next to it draw the structural formula. How are they alike, how are they different?
5.What role do catalysts play in chemical reactions?
6. Explain the difference (chemically) between an acid and a base. What scale do we use to indicate the concentration of the acid or base?
7. What values on the pH scale would indicate an acid? A base? Neutral solutions?
8. What is the difference between an inorganic substance & an organic one?
9. Explain what carbohydrates, fats & proteins are and what they do (in general) for us. Be able to classify examples.
10. There are 3 categories of carbs. Name these three and give an example of each.

Chp. 3

1. Know the location, appearance and function of the cell organelles. See coloring & notes.
2. List the 4 types of *passive transport* and use a diagram to aid in your explanation of how each works.
3. Define *selectively permeable* and explain how the structure of the cell membrane is related to its permeability.
4. Describe how *active transport* is utilized by the cell and give an example of each.
5. Review *diffusion & osmosis*.

Chp. 4

1. Review *anabolism & catabolism* (anabolic metabolism & catabolic metabolism)
2. Explain what enzymes do & the factors that alter them.
3.Review the steps in cellular respiration covered in lecture and pgs 75 – 78. This is a 'toughy' but you need to understand the overall process (NOT each step).

Chp. 5

1. Name the 4 categories of tissues we studied.
2. What are the 2 main types of epithelial tissues?
3. What 5 special characteristics does epithelial tissue have?
4. Describe squamous tissue.
5. Which tissue has multiple layers that stretch when they're under tension?
6. Which tissue has multiple layers of cells that look like little boxes?
7. What are the major differences between simple & stratified epithelium?
8. What substance is secreted by mucous cells? What makes it "mucousy"?
9. What tissue has cells that are taller than they are wide and nuclei that are oval shaped on a parallel axis?
10. What are the 4 functions of connective tissue?
11. Know the types of loose and fibrous connective tissue.
12. Complete: Tendons connect _____ to _____.
13. Complete: Ligaments connect _____ to _____.
14. . Tear one of these & due to its lack of direct blood supply and slow cellular reproduction you'll be "on the bench" for the rest of the season!
15. This tissue is found underneath the skin & in spaces between the muscles.
16. The common name for osteocytes is _____.
17. These are the shock absorbers for your bones. Found in the knee, spine & pelvis.

Chp. 6

Be able to label on a diagram:

Epidermis, dermis & subcutaneous layers, Hair shaft & follicle, sebaceous gland, sweat gland, arrector pili.

1. As an organ, how big is the skin? 2. Where is it the thinnest & thickest? 3. How often are skin cells replaced?
2. The skin serves 3 main functions. What are they and give 2 examples of each.
3. What two functions does the dermis serve?
4. Which layer of the dermis is thick with collagen & elastic fibers and is the deepest?
5. Where is hair located on the body? What are its primary functions? What kind of cells is hair composed of?
6. Describe the 2 main parts of hair. 12. What is the follicle? What occurs here?
7. In mammals, what purpose does the arrector pili serve? What about in humans?
8. What kind of gland is a sebaceous gland? What is the name of the oil secreted here? What function does it serve? Where aren't sebaceous glands found?
9. What kind of cells composed your fingernails? What is their function?
10. Review the diagram of the nail. What is the lunula? matrix?
11. Why are your nails pink? What happens if your nails get torn off?
12. Name the 2 types of sweat glands. What is the function of each?

Chp. 7

1. What are the 4 classifications of bones? B) Give an example of each.
2. Know the location & function of : periosteum, epiphysis, diaphysis, compact & spongy bone, red & yellow marrow, osteon, osteonic canal, osteocyte.
3. What is the difference between: osteoblasts, osteocytes, osteoclasts.
4. Go over pgs 131 & 132 as an overview of bones.
5. What are the functions of the sinuses in the skull?
6. Know the location & function of the various parts of a vertebra – see pg 140. Also be able to recognize the difference between cervical, thoracic & lumbar vertebra.
7. Recall the importance of the atlas & axis & which is which.
8. What bones form the pelvic girdle? b) What are the strengths & weaknesses? c)Which bone is the heaviest? Why? d) How do they differ from males & females?
9. Distinguish between true, false & floating ribs.
10. What bones make up the pectoral girdle? b) What are their function?
11. Name the 3 parts of the sternum.
12. Review the parts of the scapula.
13. Study the chart on page 147 (male vs female skeletons)
15. Review the types of joints on page 153. What are bursae?
16. Review the movement vocab. on pg 154.

Chp. 8

1. What are the 3 types of muscles in the body?
2. Explain what the types of connective tissues in muscles are & how they function.
3. Go to pg 167, Explain how the fascicle & fascia are alike and how they differ.
4. Define: sarcolemma, sarcomere & sarcoplasm.
5. Review Fig. 8.2 on pg 168.
6. What is another name for the light and dark bands of muscle?
7. Describe the function (or what occurs) at motor neurons & neuromuscular junctions.
9. We outlined 6 steps for muscle contraction in class – review them.
10. Explain how ATP is converted into energy. (172)
11. Explain how ATP and creatine phosphate are related. (172)
12. Why do muscles need oxygen? Where do they get it from? (172)
13. What is ***oxygen debt?(173)***
14. Explain how muscles become fatigued and cramp. (174)
15. Explain what *threshold stimulus, all-or-none response and sustained contraction* are. (174)
16. What is meant by a muscle twitch? B) Sketch a myogram and identify the *latent period, period of contraction and period of relaxation* are. (175)
17. In physiology, what do they mean by *muscle tone*? (175)
18. Compare and contrast the features and functions of the 3 types of muscle.

Use your nervous system study guide to review that, but since it is so recent, I'd expect you to know it.

Diagrams: The plates starting on pg. 22 won't be assigned, but are worth looking at.
Chp. 1 - Fig. 1.7 & 1.11
Chp. 2 – Fig. 2.1, 2.4, 2.6, 2.7, 2.15 & 2.16
Chp. 3 – Fig. 3.2, 3.11, 3.14, 3.20 & 3.21
Chp. 4 – Fig. 4.1, 4.4, 4.5, 4.7, 4.12 & 4.13
Chp. 5 – Fig. 5.1 thru 5.8, 5.13 thru 5.24
Chp. 6 – 6.1, 6.4.
Chp. 7 – Fig. 7.1, 7.3, 7.8 – 7.14, 7.16, 7.17, 7.18, 7.20 – 7.31, 7.39 thru 7.41
Chp. 8 – Fig. 8.1, 8.2, 8.12, 8.13, 8.17 – 8.21, 8.25 – 8.30
Chp. 9 – Fig. 9.3, 9.5 – 9.10, 9.12, 9.15, 9.19, 9.25 & 9.26.