

Anatomy & Physiology Semester “A” EXAM Review

Material from the following chapters / topics will be covered:

- ❖ Prefixes & Suffixes
- ❖ Anatomical & Positional Terminology (Chapter 1)
 - ❖ Cells (Chapter 3)
 - ❖ Tissues (Chapter 3)
- ❖ Skeletal System (Chapter 5)
- ❖ Muscular System (Chapter 6)

DISCLAIMER:

BE AWARE THAT THIS REVIEW SHEET PROVIDES ONLY *REPRESENTATIVE EXAMPLES* OF QUESTIONS FROM EACH UNIT. YOU ARE RESPONSIBLE FOR ALL MATERIAL COVERED IN CLASS (NOTES) AND CAN EXPECT TO ENCOUNTER QUESTIONS ON THE EXAM THAT, WHILE COVERING THE *TOPICS* FROM EACH UNIT, MAY NOT BE *EXPLICITLY* COVERED IN THIS REVIEW.

Prefixes & Suffixes – know them. Here are some practice examples:

1. aquasynthesis _____
2. osteocyte _____
3. neoplasm _____
4. dermatology _____
5. gastroscope _____

Anatomical & Positional Terminology (ch.1) – know them.

6. Describe the “anatomical position”.
7. Top (head end) of body –
8. Front of body –
9. Posterior aspect of knee –
10. Cheek area –
11. Top of shoulder –
12. Anterior aspect of elbow –
13. Area where leg joins body –
14. Posterior aspect of shoulder –
15. The two subdivisions of the ventral body cavity –
16. The cranial body cavity is _____ to the vertebral body cavity.
17. The elbow is _____ to the axillary region.
18. The abdominopelvic body cavity is _____ to the diaphragm.
19. The entire integumentary system is _____ to the skeletal system.
20. The heart is _____ and _____ to the patellar region.
21. The plane that divides the body into right and left parts –
22. A cut that separates a body into top and bottom halves –

Classify these organs into their appropriate organ system ***and*** body cavity:

- | | |
|-----------------------|-----------------|
| 23. Heart – | 28. Kidney– |
| 24. Liver – | 29. Stomach – |
| 25. Small intestine – | 30. Diaphragm – |
| 26. Lungs – | 31. Spleen – |
| 27. Trachea – | 32. Uterus– |

Cells (ch.3)

1. Cells are made of what 4 primary elements?
2. Describe the structure of the plasma membrane and the importance of each part.
3. Explain what is happening in each of these diagrams (use terms that end in “-tonic” please):



4. Why can't we drink sea water? Explain using tonicity, solute, solvent, direction of water flow, and cellular changes. (Don't even think about saying something lame like "It's not good for you." DUH!!!)

Tissues (ch.3)

Complete the following outline:

I. Tissues – (definition)

A. (tissue type #1):

1. Functions:
2. Named according to cell _____ and _____.
3. Several specific types (list 8):

-	-
-	-
-	-
-	-

B. (tissue type #2):

1. Functions:
2. Two common characteristics of this tissue type:
 - a.
 - b.
3. Five types of this tissue in order of hardest to softest extracellular matrix:
 - a.
 - b.
 - c.
 - d.
 - e.

C. (tissue type #3):

1. The single function of this highly specialized tissue is to _____
2. Three specific types of this tissue:

<u>name</u>	<u>location(s) found</u>	<u>function(s)</u>
a.		
b.		
c.		

D. (tissue type #4):

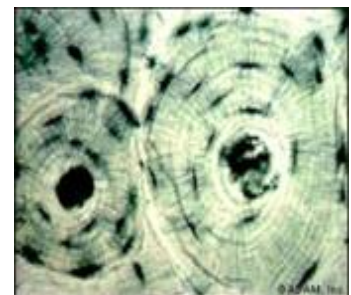
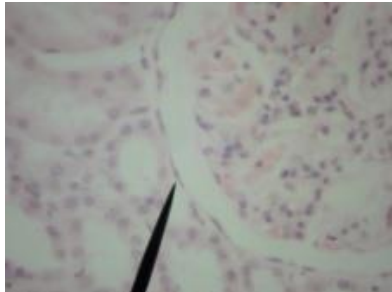
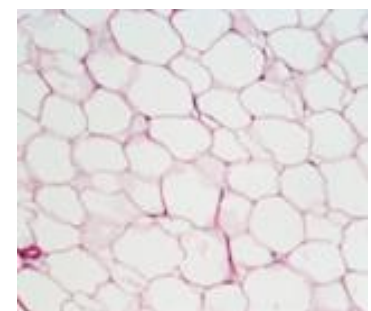
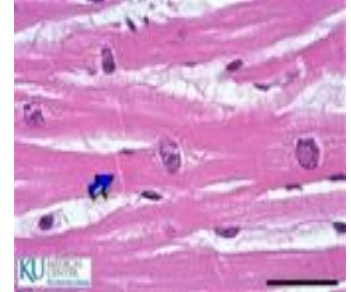
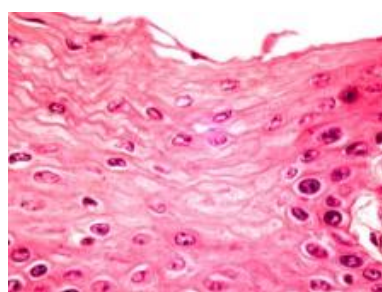
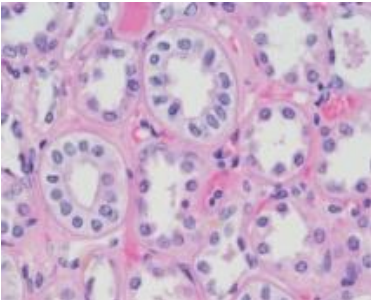
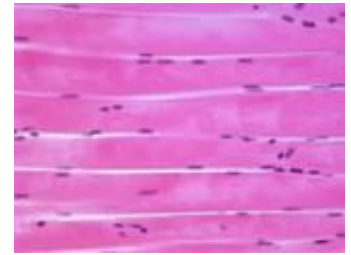
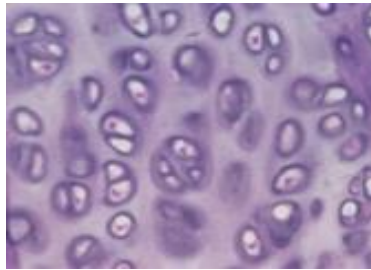
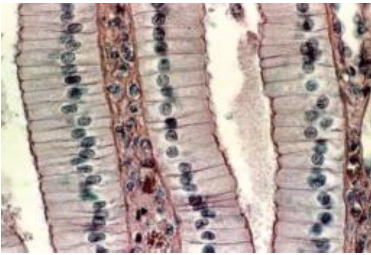
1. Tissue made of cells called:
2. Two major functions of this highly specialized tissue:
 - a.
 - b.

Tissues

(continued)

1. What are the major differences between skeletal, cardiac, and smooth muscles?
2. What *specific* tissues could you find when looking at a complete knee joint?
3. Why is blood considered a connective tissue? When are the fibers apparent in blood tissue?
4. Why is stratified squamous a good type of epithelium for your skin?
5. Why are your lungs lined with simple squamous epithelium?
6. What are the differences between endocrine and exocrine glands?
7. What kind of tissue are tendons and ligaments? What does each of these hold together?
8. What is unique about the way that cardiac muscle cells join together?

Be able to identify tissue types visually, such as these for example:



Skeletal System (ch.5)

1. What are 3 basic functions of the skeletal system?
2. Identify the 2 subdivisions of the skeleton.
3. Name the 4 main kinds of bones.
4. Differentiate between compact and spongy bone.
5. Be able to identify the bones listed on your “Bones to Know” page.
6. Name the parts of a typical vertebrae body (spinous process, vertebral arch, vertebral foramen, transverse process) and be able to identify cervical, thoracic, and lumbar vertebrae.
7. What are spinal curvatures and why are they important?
8. Identify the bones of the pectoral and pelvic girdles.
9. Describe the differences between male and female pelvises.
10. In what two ways can skeletal joints be classified?
11. Explain any connections between the two ways of classifying skeletal joints.
12. Be able to describe the symptom and causes of the disorders and injuries that we discussed.

Describe how muscles are grouped according to their actions (*prime mover, antagonist, synergists, fixators*).

What is a motor unit?

Explain the process in which a muscle cell is activated by a nerve, using the terms:

nerve, neuromuscular junction/synaptic cleft, neurotransmitter (acetylcholine), Ca⁺, electrical balance, action potential, actin, myosin, sliding filament.

Be able to identify the parts of a muscle (in cross section).

Compare and contrast isotonic and isometric muscle contractions.

Use the chart below to summarize aerobic and anaerobic muscle contractions:

	Oxygen Use?	Relative Strength and Speed of Contractions	Efficiency <i>(how many ATP's can be made from 1 glucose molecule?)</i>	Sustainability until Fatigue
Aerobic Contractions				
Anaerobic Contractions				

Fatigue:

- What is it?
- Why does it happen?

Distinguish between the characteristics of fast-twitch and slow-twitch muscle fibers.

Define and give the causes of hypertrophy and atrophy.

Nervous System (ch.7)

The major function of the nervous system and the 3 overlapping steps in which this function to happens.

Structure of a neuron and the events of a neurochemical event.

How the nervous system is organized (central, peripheral, autonomic, somatic, sympathetic, parasympathetic).

The 4 regions of the brain and basic function of each.

Reflexes and reactions: what are they and how do they work?

Study hard, good luck, and most of all remember...

Chicks dig scars.

Glory lasts forever.

And word banks are for sissies.

