Final Exam Review - Anatomy & Physiology

Introduction

1. Common Anatomical terms
2. planes of the body
3. directions terms
4. Basic Systems of the body and their function
5. What is homeostasis

Histology

1. What are the 4 different types of tissue, their functions, and examples
2. What are specific types of epithelial tissues
3. Compare and contrast the 3 different types of muscle tissue

Kidney

1. Be able to label the basic structures of the kidney: Cortex, pyramids, bowman's capsule, loop of henle, collecting duct,
2. What is the basic role of the kidney in the human body

Integumentary System

1. What are the basic layers of the Integumentary system
2. What are the functions of the layers of the epidermis: stratum basale, stratum spinosum and stratum corneum.
3. Compare and contrast Keratinized vs non-keratinized epithelial
4. What type of glands are found in the integument and what is their function.
5. What happens as we age
6. What is jaundice and what can that be a symptom of?

Skeletal System

1. Functions
2. axial vs appendicular (structures and functions)
3. Regions of the vertebral column
4. How do bones grow? Explain growth at the growth plate (epiphyseal growth), appositional, and endochondral ossification.
5. Gross anatomy of bones (long bone anatomy)
6. Cytology: Bone cells and functions
7. What happens if there is a deficiency in vitamin D?

Musculatory System

1. Functions
2. Anatomy of muscle belly and sarcomere
3. Review the sliding filament mechanism and muscle contraction
4. What role does Calcium play in contraction
5. What role does ATP play in contraction

Cardiovascular System

1. Explain the composition of blood and the various types of cells
2. Explain what a hematocrit is and how a change in a hematocrit can be used to identify health problems.
3. Label the parts of a heart.

4. Explain the flow of blood through the heart
5. Describe the different types of vessels and the bath of blood: Arteries → arterioles → capillary beds → venules → veins
6. Describe/recognize the basic idea of how capillary bed functions to regulate blood flow to a tissue

Nervous System

1. Label the parts of a brain: Cerebrum, cerebellum, brainstem, corpus callosum
2. Recognize a neuron as multipolar, unipolar or bipolar
3. What's the benefit of schwann cells and myelin on an axon?
4. Know the basic sequence of events for neurons to sent messages - here they are:
    i. A stimuli causes a wave of depolarization at dendrites
    ii. The wave opens voltage gated Na channels at the axon hillock to start an action potential
    iii. Na enters and depolarizes the membrane and spreads the charge to the next node
    iv. K leaves to repolarize
    v. Na/K pump puts all the ions back in high concentration using active transport

Essay (12 pts)

1. Pick 2 systems of the body, or 2 individual things we learned this year from different units that relate to each other. They should be 2 things that depend on each other and/or influence each other.
    a. Grading will look for: defining anatomical structures of your 2 choices, the functions of each, a clear explanation of how they are interconnected, and the overall clarity and flow of your essay.