

Cheatography

anatomy Cheat Sheet
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chapter 1

Exam Fall 14 Quiz 1
Define: histology microscopic anatomy
Cytology study of cells
Physiology study of diseases/disease process
2. Begin with the subatomic particles and complete the organizational scheme.
subatomic particles → molecules → organelles → tissue → organs → systems → organism
3. List two organs in the lymphatic system and the nervous system. Give two functions for each system.
Lymphatic:
① tonsils/spleen
② lymphatic nodes
③ thymus gland
④ lymphatic vessels
Nervous:
① brain
② spinal cord
4. Define homeostasis. Give an example. Differentiate positive and negative feedback.
① coverage of volume during the exercise
② ex: when the body becomes too hot, indicates in the body release sweat to cool the body down.
③ ex: when the body becomes too cold, indicates in the body release heat to warm the body up.
5. Name and describe the planes of dissection.
Sagittal - coronal
Frontal - coronal
Transverse - transverse
6. Name three body cavities. Include their contents. Also include the tissues associated with one cavity and its location.
① (thoracic) pleural - lungs & heart - two
② (thoracic) pericardial
③ (thoracic) peritoneal
7. Where is the mediastinum located? Function?
in thoracic cavity
separates left and right lung
radiates from the heart
8. Name and differentiate two diagnostic procedures.
CT - (computed tomography) - 3D image of body
MRI - (magnetic resonance imaging) - shows different organ structures
how many electrons in an atom of chlorine? Potassium?
17 19
9. Name the following landmarks: a. _____ b. _____ c. _____
10. What directional terms mean toward the head? Toward the middle? Toward the back?
superior
medial
posterior

chapter 2

Exam Fall 2014 Quiz 2
1. What type of bond is between Sr and Cl? Name the cation.
ionic
Sr²⁺
2. Differentiate between isotopes and radioisotopes.
isotopes: same number of protons, different number of neutrons
radioisotopes: same number of protons, different number of neutrons, unstable and break down
3. Name and describe two theoretical models of atoms.
Bohr's model
Schrodinger's model
4. Why do elements have valence electrons?
they react with other atoms to become more stable
5. Describe the two strong chemical bonds.
ionic bonds - transfer of electrons
covalent bonds - sharing of electrons
6. Name two weak chemical bonds. Describe one.
hydrogen bond - attraction between a δ^+ on hydrogen atom and δ^- on oxygen or nitrogen
7. Using the concepts of hydrophobic/hydrophilic and polar/non-polar, why does oil not dissolve in water?
oil does not dissolve in water because it is hydrophobic and non-polar. Water is a polar molecule and only dissolves things that are hydrophilic and polar. Oil molecules are hydrophobic and non-polar, so they do not interact with water molecules.
8. Define chemical energy. Give an example.
ex: potential energy stored in a battery
9. Differentiate between hydrolysis and dehydration. Give an example using a synthesis reaction.
hydrolysis - adding water to break apart a molecule
dehydration - removal of water
$$g + f \rightarrow gf + H_2O$$

10. List the categories of lipids. Give their m/s.
fatty acid - carbonyl
triglyceride - ester
phospholipid - alcohol
steroids - cholesterol
phospholipids - diglyceride & polyphospholipid
glycolipids - carbohydrates & lipids
11. Draw and label a pH scale. Include examples of strong acids and bases, and weak acids and bases.
pH scale from 1 to 14
12. Name the following functional groups:
aldehyde
ketone
carboxylic acid
amine
ether
ester
alcohol

chapter 3

1. Define and give a general example of an endothermic reaction.
$$A + B \rightarrow C + D + \text{energy}$$

2. Define exothermic. Give two examples.
① combustion
② cellular respiration
3. Draw a steroid. Name three examples of modified steroids.
cholesterol
steroid hormones
vitamin D
4. Give the general structure of a phospholipid. Name two other modified lipids.
phospholipid: phosphate head, hydrophilic, glycerol backbone, hydrophobic tails
5. Describe the basic structure of a protein.
primary - amino acid sequence
secondary - alpha helix, beta sheet
tertiary - complex folding
quaternary - assembly of subunits
6. Differentiate between a cofactor and a coenzyme.
cofactor: non-protein molecule
coenzyme: organic molecule
7. Define denaturation. Can it be reversed? Explain.
change in structure or function of a protein
8. Name and differentiate the types of nucleic acids.
DNA - double stranded
RNA - single stranded
9. Define metabolic turnover. Give two specific examples.
① protein turnover
② lipid turnover
10. Define phosphorylation. How is this related to cellular energy?
phosphorylation: the adding of a phosphate group
$$ATP \rightarrow ADP + P_i$$

11. What is an omega fatty acid?
omega fatty acid is an unsaturated fatty acid
12. Draw and label a cell membrane. Include a function for one component.
phospholipid - lactone
protein - transport
channel - ion
flexibility

chapter 10

1. List 4 ways to organize muscle fibers. Give an example for each.
① parallel fibers
② convergent fibers
③ fusiform fibers
④ pennate fibers
2. Describe the 3 classes of levers as applied to skeletal muscles. Include an example for each.
① first class
② second class
③ third class
3. Name the 6 types of muscles. Include their action and innervation. Are these intrinsic or extrinsic? Explain.
① biceps brachii
② triceps brachii
③ deltoid
④ pectoralis major
⑤ latissimus dorsi
⑥ rectus abdominis
4. Define hernia. List three possible causes, and three locations.
hernia: protrusion of an organ through a weak spot in the abdominal wall
5. Define retinaculum. Give two locations.
retinaculum: band of connective tissue that holds a structure in place
6. List the hamstrings. List the quadriceps. List the muscles of the rotator cuff.
7. Differentiate between isometric and isotonic contractions.
8. Differentiate between isometric and isotonic contractions.
9. Draw and label a neuron.
10. What organelle is associated with mitosis? Name two locations where these are present.
11. List 4 structural classifications of neurons. Draw 1 multipolar neuron.
12. Describe the steps in neural regeneration.
13. List the neuroglia found in the CNS. Function?
14. Describe the steps in neural regeneration.
15. List the neuroglia found in the CNS. Function?

chapter 4

1. Explain cellular respiration that occurs without oxygen.
anaerobic - respiration w/o oxygen. pyruvate can be used in fermentation, or lactic acid - ATP for cell work.
2. Describe protein synthesis.
transcription - mRNA is synthesized in the nucleus
translation - mRNA is translated into a protein in the cytoplasm
3. What affects movement across the cell membrane? Include solubility and diffusion in your answer.
diffusion is a passive process and will move from a higher concentration to a lower.
4. Differentiate between the types of tumors. Include the necessary steps.
benign - stays in place, doesn't spread
malignant - invades, spreads
5. Use the concept of differentiation, and describe the function of a stem cell.
stem cell - undifferentiated cell that can divide to replace damaged tissue and make new cells
6. Give an example of active transport. Why might this occur?
active transport - against concentration gradient
7. Describe the steps in cell division. Include 2 stimulants and 1 inhibitory compound.
① mitosis - diploid cells
② meiosis - haploid cells
8. List a characteristic of epithelial cells.
① polarity
② junctions
9. Describe the types of epithelial cells. Include shape, organization, location, and function.
① squamous
② cuboidal
③ columnar
④ transitional
⑤ simple cuboidal
⑥ simple columnar
⑦ stratified squamous
⑧ stratified columnar
⑨ stratified cuboidal
⑩ stratified columnar
⑪ transitional
⑫ transitional

chapter 5

Exam Fall 14 Quiz 3
1. Draw a type of tubular structure, and label the apical surface, lumen, and basement membrane.
2. What is transitional epithelium? Name 1 location.
3. Name two types of epithelial cells. Draw a simple cuboidal, a simple columnar, a simple squamous, and a compound cuboidal epithelium.
4. Name two types of tissue cells and two muscle cells. Give a function for each.
5. Define matrix. Give a specific example.
6. Name the different types of leukocytes. Assign a function to each.
7. Name two types of connective tissue.
8. Define a satellite cell. Give a location. Name the two daughter cells.
9. Describe three processes that occur during wound healing.
10. Draw and label a neuron.
11. Name the types of muscles. What characteristics do they have?

chapter 6

1. List 4 functions of the skin. Include the connection between sunlight and Vit. D absorption.

2. Describe the layers of the epidermis.

3. List 3 common skin malignancies.

4. Describe the ABCD system of cancer detection.

5. Name 2 sources and 2 functions of EGF.

6. How are sweat glands formed?

7. List 2 types of hairs. Include a location for each.

8. List 2 functions of the sebaceous gland.

9. Name and differ bet. 2 types of sweat glands.

10. What makes up granulation tissue?

11. Differ bet. the types of burns.

12. Describe the injury repair sequence.

13. Differ bet. primary and secondary intention.

chapter 7

1. List 4 types of bone based on shape. Include examples of each.

2. Draw and label a long bone. Include compact and spongy bone.

3. Name the major cells of bone. What does it come from?

4. What is another name for spongy bone?

5. Describe the process of ossification.

6. Describe the homeostasis of blood calcium.

7. List 6 types of fractures. Describe 3. Which would be the hardest to heal?

8. Differ bet. rickets and scurvy.

9. Name three sinuses and give three functions.

10. Define the term fibro. Numbers?

11. List 3 differences bet. male and female pelvis.

chapter 9

1. Name the neurotransmitter(s) for the various types of muscles.

2. List 3 functions for the skeletal muscle.

3. Begin with the muscle cell membrane and name the c.c.s that are contiguous to the peritendrium.

4. Describe the embryonic development of muscle tissue.

5. Name the myo of a muscle fiber. Function?

6. Draw and label a sarcomere.

7. What is the function of the following: myofibril?

8. Begin with the release of a NT and describe muscle contraction.

9. How does CP affect muscle contraction?

10. Describe 2 diseases that cause paralysis.

chapter 11

Using the concept of electrochemical gradient, (a) explain which ion is responsible for the action potential. (b) do the same for the repolarization phase.

1. Name 4 types of ion channels. Give an example of each.

2. List three differences between graded response and an action potential.

3. Describe the concept of hyper-polarization. Give two examples of ion movement.

4. Explain the concept of summation. Where does it occur?

5. Where is the initial segment located? Why?

6. Describe the refractory periods associated with a neuron.

7. Compare the types of neurons based on size. Give a specific example for each.

8. Differ bet. a chemical and an electrical synapse.

9. Define neuromodulator. Include the opioids.

chapter 8

1. Name the correct term for calcium release? Why?

2. Name three types of joints based on motion. Give an example of each.

3. Draw and label a typical joint.

4. List 4 functions for synovial fluid. Describe.

5. Differ bet. a sprain and a strain.

6. Differ bet. a bursa and a bursitis.

7. List 4 types of synovial joints. Give an example of each.

8. Describe two problems that might occur with an I.V. disk. Why might the spinal cord be in jeopardy?

9. Name 3 ligaments that stabilize the elbow.

10. Name 3 ligaments that stabilize the hip joint.

11. Describe three diseases that affect the joint.

chapter 12

1. Name 3 classes of neurotransmitters from table. Include a specific example, mechanism of action and location.

2. Define presynaptic inhibition. Give a specific example. Do the same for presynaptic facilitation.

3. Differ bet. spatial and temporal summation.

4. Draw and label a section of the cerebellum.

5. Define plexus. Include the myo and an advantage.

6. List the spinal segments for the brachial plexus. List 4 nerves, their specific spinal segments, and their target.

7. List the spinal segments for the lumbar plexus. List 3 nerves, their specific spinal segments, and their target.

8. Name the types of neural circuits. Draw an example.

9. List the myo of the muscle spindle. Why?

10. Name the meninges. Describe their organization and include any spaces.