

REVIEW FOR EXAM 1

Please answer the following questions. These questions are meant to help you test your knowledge of the subject matter. Do *not* send your answers to the school.

CHAPTER 1 – INTRODUCTION TO ANATOMY & PHYSIOLOGY

1. An example of a macroscopic anatomic part is a/an
 - a. ion.
 - b. cell.
 - c. tissue.
 - d. muscle.
2. The system consisting of glands and hormones is called
 - a. integumentary.
 - b. reproductive.
 - c. endocrine.
 - d. digestive.
3. What plane is perpendicular to the sagittal and transverse plane?
 - a. Dorsal
 - b. Midsagittal
 - c. Median
 - d. Cranial
4. The word that means toward the nose is
 - a. cranial.
 - b. proximal.
 - c. dorsal.
 - d. rostral.
5. Which terms refer to up and down?
 - a. Cranial and caudal
 - b. Dorsal and ventral
 - c. Medial and lateral
 - d. Rostral and caudal

6. The plantar surface is
- located distal to the tarsus on the back of the hind limb.
 - located proximal to the tarsus on the back of the hind limb.
 - located distal to the carpus on the front of the front limb.
 - located proximal to the carpus on the back of the front limb.
7. The dorsal body cavity consists of
- the peritoneal and pleural cavities.
 - the cranial and spinal cavities.
 - the visceral and parietal cavities.
 - none of the above.
8. What divides the ventral body cavity into the cranial thoracic cavity and the caudal abdominal cavity?
- The liver
 - The stomach
 - Intercostal muscles
 - The diaphragm

CHAPTER 2 – CHEMICAL BASIS OF LIFE

1. Which statement is true regarding archaebacteria?
- They're found in hot springs, salt flats, and intestines of animals.
 - They create chemical energy needed to survive.
 - They exist today in the brains of animals.
 - Both a and b are true.
2. Which element is the primary component of organic molecules?
- Nitrogen
 - Carbon
 - Oxygen
 - Calcium
3. Which particles are found in the atomic nucleus?
- Protons and electrons
 - Electrons and neutrons
 - Protons and benzene
 - Protons and neutrons
4. The atomic number represents the number of
- protons.
 - electrons.
 - neutrons.
 - protons plus neutrons.
5. The rate at which radioactive isotopes emit energy is called the
- isotopic rate.
 - rate of radioactivity.
 - rate of decay.
 - rate of stability
6. The second electron shell can hold up to how many electrons?
- Eight
 - Ten
 - Two
 - Six

7. Hydrogen bonds are very _____ and have a slight _____ charge.
- a. weak; negative
 - b. strong; positive
 - c. weak; positive
 - d. strong; negative
8. Special proteins that catalyze chemical reactions are
- a. ions.
 - b. cations.
 - c. acids.
 - d. enzymes.
9. What's a key component of thyroid hormone?
- a. Iodine
 - b. Manganese
 - c. Fluorine
 - d. Calcium

CHAPTER 3 – THE AMAZING CELL

1. What three structures are found in all mammalian cells despite three billion years of evolution?
- a. Lysosomes, free ribosomes, and cilia
 - b. Cell membrane, cytoplasm, and cilia
 - c. Cytoplasm, nucleus, and cell membrane
 - d. Globular proteins, nucleus, and nuclear envelope
2. The family of molecules that play a vital role in cell-to-cell recognition or contact signaling is
- a. ligands.
 - b. membrane receptors.
 - c. glycolipids.
 - d. cell adhesion molecules.
3. Examples of ligands include
- a. neurotransmitters and cilia.
 - b. glycoproteins and hormones.
 - c. neurotransmitters and hormones.
 - d. glycoproteins and glycolipids.
4. The principal components of cytoplasm are
- a. cytoskeleton, organelles, inclusions, and cytosol.
 - b. cilia, cytosol, and intermediate fibers.
 - c. flagella, mitochondria, lysosomes, and cytosol.
 - d. Golgi apparatus, ribosomes, cytoskeleton, and cilia.
5. How many mitochondria are in the average mammalian cell?
- a. 10
 - b. 100
 - c. 3
 - d. It depends on the cell's activity level. Highly active cells such as heart cells require more mitochondria.
6. Ribosomes produce
- a. glucose.
 - b. lipids.
 - c. proteins.
 - d. bacteria.

7. Which of the following cell structures modify, package, and distribute proteins destined for secretion or intracellular use?
- a. Golgi apparatus.
 - b. Lysosomes.
 - c. Ribosomes.
 - d. Mitochondria.
8. Centrioles play an important role in forming the bases of cilia and flagella and during
- a. protein synthesis.
 - b. ATP production.
 - c. transcription.
 - d. cell division.

CHAPTER 4 – TISSUES: LIVING COMMUNITIES

1. Functions of epithelial cells include
- a. secretion or excretion of biochemical substances.
 - b. filtering of biochemical substances.
 - c. providing sensory input.
 - d. all of the above.
2. The type of cellular junction found between epithelial cells that's a strong, welded plaque or thickening, and formed of filaments that interlock with one another is a
- a. gap junction.
 - b. desmosome.
 - c. tight junction.
 - d. basement membrane.
3. Which structure acts as a partial barrier between the epithelial cell and the underlying connective tissue?
- a. Connexon
 - b. Gap junction
 - c. Basement membrane
 - d. Plaque
4. The simple columnar epithelial cells that manufacture and store lubricating mucus that is secreted onto the luminal surface of the epithelia are
- a. goblet cells.
 - b. endothelial cells.
 - c. mesothelial cells.
 - d. desmosomes.
5. An example of an endocrine gland is
- a. the goblet cell.
 - b. the adrenal gland.
 - c. the pituitary gland.
 - d. both b and c.
6. The goblet cell is described as a
- a. multicellular exocrine gland.
 - b. unicellular exocrine gland.
 - c. multicellular endocrine gland.
 - d. unicellular endocrine gland.
7. What glands package their secretions into granular units and release them via exocytosis?
- a. Holocrine
 - b. Mixed exocrine
 - c. Apocrine
 - d. Merocrine

8. The type of tissue most abundant by weight in the body is
- muscle.
 - connective.
 - nervous.
 - epithelial.
9. Which of the following are functions of connective tissue?
- It forms a protective sheath around organs.
 - It acts as a reserve for energy.
 - It plays a vital role in the healing process and in controlling invading organisms.
 - All of the above are functions.
10. Connective tissue fibers that provide support for highly cellular organs such as the liver, lymph nodes, spleen, and bone marrow are _____ fibers.
- reticular
 - elastic
 - fixed
 - collagenous
11. A component of connective tissue that acts as a shock-absorbing cushion and help(s) to protect the more delicate cells it envelops is
- collagenous fibers
 - wandering cells
 - ground substance
 - reticular fibers
12. Which is an example of a wandering cell?
- Reticular
 - Macrophage
 - Adipocyte
 - Fibroblast
13. The primary function of leukocytes is to
- fight infection.
 - distribute oxygen and nutrients to the body.
 - provide a ground substance for connective tissue.
 - help blood to clot.

CHAPTER 5 – THE INTEGUMENT AND RELATED STRUCTURES

1. Which layer of skin provides nutrition to the epidermis?
- Hypodermis
 - Subcutaneous layer
 - Dermis
 - Adipocytes

2. Which layer consists of a single layer of keratinocytes which are firmly attached to the epithelial basement membrane?
- a. Papillary layer
 - b. Stratum germinativum
 - c. Hypodermis
 - d. Stratum spinosum
3. Langerhans cells are found most abundantly in which layer?
- a. Stratum corneum
 - b. Stratum lucidum
 - c. Stratum granulosum
 - d. Stratum spinosum
4. Cells in the _____ begin to fill with keratohyaline and lamellated granules that lead to the degeneration of nuclei and other organelles and ultimate cell death.
- a. stratum granulosum
 - b. papillary layer
 - c. stratum corneum
 - d. stratum germinativum
5. Which structures are found in the papillary layer of the dermis?
- a. Blood vessels
 - b. Nerve endings
 - c. Temperature-sensitive receptors
 - d. All of the above
6. Approximately 80 percent of the dermis consists of
- a. loose connective tissue.
 - b. dense regular connective tissue.
 - c. elastic connective tissue.
 - d. dense irregular connective tissue.
7. The hypodermis consists of _____ tissue.
- a. dense regular connective
 - b. areolar
 - c. dense irregular connective
 - d. reticular connective
8. The central weight-bearing pads of an animal's foot are
- a. carpal pads.
 - b. tarsal pads.
 - c. metacarpal and metatarsal pads.
 - d. digital pads.
9. _____ are found in the paw pads of many animals:
- a. Apocrine sweat glands
 - b. Sebaceous glands
 - c. Salivary glands
 - d. Eccrine sweat glands

ANSWERS

Chapter 1

1. D
2. C
3. A
4. D
5. B
6. A
7. B
8. D

Chapter 2

1. D
2. B
3. D
4. A
5. C
6. A
7. C
8. D
9. A

Chapter 3

1. C
2. B
3. C
4. A
5. D

6. C

7. A

8. D

Chapter 4

1. D

2. B

3. C

4. A

5. D

6. B

7. D

8. B

9. D

10. A

11. C

12. B

13. A

Chapter 5

1. C

2. B

3. D

4. A

5. D

6. D

7. B

8. C

9. D