



"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

SNS 304 ANATOMY AND PHYSIOLOGY

END OF SECOND SEMESTER EXAMINATIONS

APRIL/MAY 2018

LECTURER: MR G MITI

DURATION: 3 HOURS

INSTRUCTIONS

1. Do not write your name on the answer sheet
2. Use Answer Sheets Provided
3. Begin your answer for Each Question on a New Page
4. Credit is Given for Neat Presentation





Anatomy and Physiology Exam

Section A: Answer all questions

1. Circle the most appropriate answer. (1 mark each)
 - 1.1. Maintenance of a relatively stable internal environment in response to changing internal or external conditions of the body is:
 - A. Nervous system reaction
 - B. Homeostasis
 - C. Body adjustment system
 - 1.2. The cytoplasm contains viscous fluid which contains dissolved substances e.g. glucose, amino acids, ions. This is called:
 - A. Lysosome
 - B. Cytosol
 - C. Organelle
 - 1.3. Which of the following organelles are NOT membrane bound?
 - A. Golgi apparatus, lysosomes, peroxisomes
 - B. Ribosomes, cytoskeleton, centrosome
 - C. Endoplasmic reticulum
 - 1.4. The plasma membrane is made up of a phospholipid molecules that have:
 - A. Hydrophobic heads and hydrophilic tails
 - B. Hydrophilic heads and hydrophobic tails
 - C. Hydrophilic tails and hydrophilic heads
 - 1.5. Which of the following is not an active process?
 - A. Carrier-mediated facilitated diffusion
 - B. Endocytosis
 - C. Exocytosis
 - 1.6. Which statement is true about the Sodium/Potassium pump?
 - A. It moves potassium ions out of the cell against its concentration gradient.
 - B. It moves sodium ions into a cell against its concentration gradient
 - C. It moves sodium ions out of the cell against its concentration gradient
 - 1.7. A solution in which cells gain water from their environment is termed:
 - A. Isotonic
 - B. Hypertonic
 - C. Hypotonic
 - 1.8. What is the mitotic stage at which chromatin coils to form chromosomes, the nuclear membrane disappears, the nucleolus dissolves, spindle fibres are formed and centrioles migrate to the poles?
 - A. Anaphase
 - B. Prophase
 - C. Metaphase

- 1.9. In homeostasis the body structure that detects change in a variable that is regulated is called:
 - A. Effector
 - B. Receptor
 - C. Control centre
- 1.10. Which of the following cellular structure has two membranes, the inner one being folded?
 - A. Ribosomes
 - B. Golgi bodies
 - C. Mitochondria
2. Distinguish between:
 - 2.1. Areolar and Adipose connective tissue (6 marks)
 - 2.2. Hyaline and Elastic cartilage (6 marks)
3. Outline the key functions of the integumentary system. (5 marks)
4. With the aid of a diagram, describe the structure and function of a typical neuron. (8 marks)
5. With the aid of diagrams explain what happens during the anaphase and telophase phases of mitosis. (8 marks)
6. Describe, using examples, how connective tissues perform each of the following functions: (12)
 - 6.1. Physical protection
 - 6.2. Immune protection
 - 6.3. Storage
 - 6.4. Transport
7. Giving examples of each, distinguish between long and short bones. (4)
8. Draw a typical long bone and label the following: (6)
 - 8.1. Diaphysis
 - 8.2. Epiphysis
 - 8.3. Articular cartilage
 - 8.4. Metaphysis
9. Briefly describe the structure and function of each of the following blood components:
 - 9.1. Erythrocytes (6)
 - 9.2. Leucocytes (6)
 - 9.3. Platelets (3)

Section B Answer any two questions.

10. Describe in detail how different hormones influence bone growth and remodelling. (10)
11. Give a detailed description of the bones of the upper limb. (10)
12. Write detailed notes on the following functions of blood: (10)
 - 12.1. Transportation
 - 12.2. Protection
 - 12.3. Regulation
13. Describe the structure and function of the various regions of the large intestines. (10)