

Candidate Number _____



"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

DEPARTMENT OF HEALTH SCIENCES

BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS

NSNS304 ANATOMY & PHYSIOLOGY

END OF FIRST SEMESTER EXAMINATIONS

MARCH INTAKE

JUNE 2018

LECTURER: MR G. MITI

DURATION: 3 HOURS

INSTRUCTIONS

1. Answer **all** questions in section A and two (2) questions in section B on separate answer sheets provided.
2. Mark allocation for each question is indicated at the end of the question.
3. Credit will be given for logical, systematic and neat presentations.

SECTION A: ANSWER ALL QUESTIONS

1. Circle the most appropriate answer. (1 mark each)

- 1.1. Which of the following organelles are membrane bound?
 - A. Golgi apparatus,
 - B. Ribosomes,
 - C. cytoskeleton,
- 1.2. 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
- 1.3. Which of the following is an active process?
 - A. Carrier-mediated facilitated diffusion
 - B. Endocytosis
 - C. Diffusion
- 1.4. 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
- 1.5. A solution in which cells lose water to their environment is termed:
 - A. Isotonic
 - B. Hypertonic
 - C. Hypotonic
- 1.6. What is the mitotic stage at which mitotic spindle first appear?
 - A. Anaphase
 - B. Prophase
 - C. Metaphase
- 1.7. In homeostasis the body structure that processes messages about a variable that is regulated is called:
 - A. Effector
 - B. Receptor
 - C. Control centre
- 1.8. Which of the following cellular structures has no membrane?
 - A. Ribosomes
 - B. Golgi bodies
 - C. Mitochondria

2. With the aid of diagrams describe the structure and functions of the following organelles

- 2.1. Mitochondria
- 2.2. Ribosomes
- 2.3. Nucleolus
- 2.4. Smooth Endoplasmic reticulum (16)

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3. With the aid of a diagram, describe the structure and function of a typical neuron. (8 marks)
4. With the aid of diagrams explain what happens during the interphase of mitosis. (8 marks)
5. Describe the key characteristics and functions of epithelial tissues (12)
6. Giving examples of each, distinguish between long and short bones. (4)
7. Draw a detailed labelled diagram to show the structure of a long bone (6)
8. With the aid of detailed diagrams describe the structure and function of the heart. (15)

SECTION B ANSWER ANY TWO QUESTIONS.

9. Discuss the role of different hormones in bone growth and remodelling. (12)
10. Give a detailed description of the bones of the lower limb. (12)
11.
 - a. Outline the key components of blood. (4)
 - b. Write detailed notes on the key functions of blood. (8)
12. Describe the structure and function of the human eye. 12)