

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE IN BIOMEDICAL SCIENCE AND
TECHNOLOGY**

BMED 212: MEDICAL CELL AND STRUCTURAL BIOLOGY

STREAMS: BMED

TIME: 2 HOURS

DAY/DATE: TUESDAY 05/12/2017

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS:

- **ANSWER QUESTION ONE AND ANY TWO QUESTIONS**
- **DO NOT WRITE ON THE QUESTION PAPER**

QUESTION ONE (30 MARKS)

- (a) With a well labeled diagram describe the prokaryotic cell. [8 marks]
- (b) Briefly describe the three types intercellular junctions. [6 marks]
- (c) Distinguish the three main types of humoral communication. [3 marks]
- (d) Using peroxidase as an example, explain briefly enzyme histochemistry. [5 marks]
- (e) Define briefly immunocytochemistry. [3 marks]
- (f) Distinguish the two types of chromatin as found in the eukaryotic cells. [3 marks]
- (g) What is the role of cellular compartmentalization? [2 marks]

QUESTION TWO (20 MARKS)

- (a) Describe in detail the molecular structure of cell membranes using diagrams where appropriate. [10 marks]
- (b) Transfer of substances into cells and outside of cells is realized by two basic mechanisms: passive and active transport. Explain [10marks]

QUESTION THREE (20 MARKS)

- (a) Describe in detail the cell cycle of the eukaryotic cell. [10 marks]
- (b) The nucleus is one of the most important cell organelles. With a well labeled diagram explain the structure and function of the nucleus. [10 marks]

QUESTION FOUR (20 MARKS)

- (a) There exist various relationships between microorganisms and macro organisms. Explain [10 marks]
- (b) A bacterium is the simplest prokaryotic organism in nature. Explain [10 marks]
-