

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF BIOMEDICAL TECHNOLOGY

BMET 212: MEDICAL CELL AND STRUCTURAL BIOLOGY

STREAMS: BMET

TIME: 2 HOURS

DAY/DATE: MONDAY 22/03/2021

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

- **Answer question ONE and any other TWO questions.**

QUESTION 1 (COMPULSORY) (30 MARKS)

- Using a well labeled diagram describe the structure of the cell membrane. (6 marks)
- Giving specific examples, describe classification of cancer based on the three embryonic germ layers from which tissue or organ is derived. (5 marks)
- Explain how cilia are structurally equipped to produce cell movement. (5 marks)
- Describe the structural adaptations of the mitochondrion that enable it to carry out its functions. (5 marks)
- Using a diagram describe the structure of a chromatin. (5 marks)
- Explain 3 main roles of cellular compartmentalization. (3 marks)

QUESTION 2 (20 MARKS)

- Compare and contrast passive and carrier mediated forms of transport. Give examples of each case. (10 marks)
- Explain how the cell cycle is regulated at the various cycle check points. (10 marks)

QUESTION 3 (20 MARKS)

- (a) Explain the basic steps of mitosis. (10 marks)
- (b) Describe 5 types of intercellular junctions found on the lateral surface of plasma membrane. (10 marks)

QUESTION 4 (20 MARKS)

- (a) Discuss the clinical significance of tumor markers. (10 marks)
- (b) Explain the stages in prophase of Meiosis I in cell division. (10 marks)
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