



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

**UNIVERSITY EXAMINATION FOR:**

**BTMB/ BMLS**

**AAB 4104 : CELL BIOLOGY**

**END OF SEMESTER EXAMINATION**

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE:** Pick Date Apr 2016

## Instructions to Candidates

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

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## **Question ONE**

- a) Explain any two processes of endocytosis (4 marks)
- b) Explain how surface area to volume ratio limits cell size (5 marks)
- c) The bacterial cell wall has some unique composition and characteristics. Explain (4 marks)
- d) (i) Highlight the three common features in the cell division of both eukaryotes and prokaryotes (3 marks)  
(ii) State two differences between prokaryotic and eukaryotic cell division (2 marks)
- e) Define the following
  - (i) chromatin (1 mark)
  - (ii) hydrophobic molecules (1 mark)
  - (iii) kinases (1 mark)
- f) Differentiate between the cell necrosis and cell apoptosis processes (4 marks)
- g) Name three types of movements at cellular level (3 marks)
- h) Give the functions of the following
  - (i) Channel proteins (1 mark)
  - (ii) Carrier proteins (1 mark)

## **Question TWO**

- (i) Draw a well labelled diagram of an animal cell (10 marks)
- (ii) Mitochondrion and chloroplasts are believed to have once been freely living bacteria that were later engulfed by a larger cell. Explain five pieces of evidence supporting this claim (10 marks)

## **Question THREE**

- (i) Discuss passive transport of substances across the cell membrane (10 marks)
- (ii) With the aid of diagrams describe membrane pumps (10 marks)

## **Question FOUR**

Describe five properties and functions of muscle tissue (20 marks)

## **Question FIVE**

Discuss the process of hybridoma cell formation for monoclonal antibody production (20 marks)