



TECHNICAL UNIVERSITY OF MOMBASA

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.

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)