

# 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) Define these terms

Isotonic solution (1 mark)

Hypertonic solution (1 mark)

Hypotonic solution (1 mark)

Cytokinesis (1 mark)

- b) Explain how cell are adapted to survive in a hypotonic environment (3 marks)
- c) Describe three types of cell junctions (6 marks)
- d) Describe the fluid mosaic model structure of cell membranes (4s marks)
- h) With specific examples explain the importance of apoptosis (3 marks)
- i) State three functions of glial cells (1.5 marks)
- j) Highlight three second messenger molecules (1.5 molecules)
- k) Describe two basic cells of the nervous system (3 marks)

- 1) Highlight five main classes of tissues (2.5 marks)
- m) Differentiate between
  - (i) Uniport (1/2 mark)
  - (ii) Symport (1/2 mark)
  - (iii) Antiport (1/2 mark)

#### **Question TWO**

Discuss the phases of the cell cycle (20marks)

#### **Question THREE**

Discuss

- (i) Vesicular transport (15 marks)
- (ii) Facilitated diffusion as a method of passive transport (6 marks)

# **Question FOUR**

Describe ten does and don'ts of maintaining aseptic conditions in a cell culture laboratory (20 marks)

# **Question FIVE**

- (i) Discuss the process of cell signaling (15 marks)
- (ii) Illustrate an example of a cytoplasmic response to a signal (5 marks)