**UNIVERSITY OF KABIANGA**

**UNIVERSITY EXAMINATIONS**

**2014/2015 ACADEMIC YEAR**

**SECOND YEAR SECOND SEMESTER EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN MICROBIOLOGY**

**COURSE CODE: MIC 213**

**COURSE TITLE: CELL BIOLOGY**

**DATE: 5/5/2015**

**TIME: 2.00 P.M- 5.00 P.M**

**INSTRUCTIONS TO CANDIDATES:**

Answer **ALL** Questions in **section A** and any other **THREE** in **section B**.

**SECTION A: ATTEMPT ALL QUESTIONS (28 Marks)**

1. Outline the basic characteristics of all cells. (2 marks)

2. Describe the principles of modern cell theory. (4 marks)

3. Explain the functions of the following organelles:

 a. Lysosomes. (2 marks)

 b. Peroxisomes. (2 marks)

4. Draw and label a mitochondrion and outline its functions in a cell. (4 marks)

5. Outline the differences between an animal and a plant cell. (4 marks)

6. a. Describe the effect on shape of a cell placed in the following solutions:

 i. Hypotonic. (1 mark)

 ii. Hypertonic. (1 mark)

 b. What life process/es is demonstrated by the experiment above. (1 mark)

7. What are the functions of the following cell organelles. (4 marks)

 a. Endoplasmic Reticulum

 b. Golgi apparatus

8. Briefly explain the functions of the proteins found within plasma membrane. (4 marks)

**SECTION B: Answer any THREE Questions (42 marks)**

9. i. Describe with the aid of a diagram the structure of a chromosome. (7 marks)

 ii. Give an explanation of the different types of chromosomes based on the position or centromere. (7 marks)

10. With the aid of labelled diagrams, explain the following types of cells:

 a. Prokaryotic. (7 marks)

 b. Eukaryotic. (7 marks)

11. With the help of a diagram, describe the fluid-mosaic model of a plasma membrane. (14 marks)

12. Discuss cell transport processes. (14 marks)