



# **SOUTH EASTERN KENYA UNIVERSITY**

## **UNIVERSITY EXAMINATIONS 2016/2017**

### **FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOCHEMISTRY AND MOLECULAR BIOLOGY**

#### **BCH 103: THE CELL, ORGANELLES AND BIOMEMBRANES**

**DATE: 15<sup>TH</sup> DECEMBER, 2016**

**TIME: 4.00-6.00 P.M**

### **INSTRUCTIONS TO CANDIDATES**

- (a) Answer ALL the Questions in Section A**
- (b) Answer ANY TWO Questions in Section B**
- (c) Illustrate your answers with well labeled diagrams where appropriate**

### **SECTION A (30 marks)**

1. State **three** functions of nuclear envelope. **(3 marks)**
2. State **six** basic functions of the plasma membrane. **(3 marks)**
3. List **three** functions of the lysosome. **(3 marks)**
4. Differentiate mRNA from tRNA. **(3 marks)**
5. Distinguish between the lamina and the cytoskeleton. **(3 marks)**
6. State **three** non-membranous organelles. **(3 marks)**
7. Briefly describe the factors that affect membrane fluidity. **(3 marks)**
8. State **three** functions of smooth endoplasmic reticulum. **(3 Marks)**
9. Giving an example, distinguish between intracellular and extracellular fluid. **(3 marks)**
10. Briefly explain the differences in permeability of the inner and outer mitochondrial membranes. **(3 marks)**

**SECTION B (40 marks)**

11. Discuss the biochemistry of renal cells. (20 marks)
12. Discuss the cell nucleus. (20 marks)
13. Discuss the cell cytoskeleton system. (20 marks)
14. Discuss the structure of the plasma membrane. (20 marks)