



**KISII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR THE AWARD OF THE**  
**DEGREE OF BACHELOR OF SCIENCE**  
**FIRST SEMESTER 2022/2023**  
**[SEPTEMBER-DECEMBER, 2022]**

**ZOOL 232: CELL BIOLOGY**

**STREAM: Y2 S1**

**TIME: 2 HOURS**

**DAY: FRIDAY, 12:00 – 2:00 PM**

**DATE: 23/12/2022**

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**INSTRUCTIONS**

- 1. Do not write anything on this question paper.***
- 2. Answer All question in section A and any other TWO questions in section B***

**SECTION A (40MARKS)**

**QUESTION ONE**

Write brief notes on the following

- |                           |          |
|---------------------------|----------|
| a) Spontaneous generation | (2marks) |
| b) Facilitated diffusion  | (2marks) |
| c) Pinocytosis            | (2marks) |
| d) Cell wall              | (2marks) |

**QUESTION TWO**

- a) Briefly describe the contributions of Theodor Schwann, Matthias Schleiden and Rudolf Virchow in the development of cell theory. (4marks)
- b) Outline four principles of modern cell theory. (4marks)

### **QUESTION THREE**

Describe the structural differences between the following

- a) Prokaryotic and Eukaryotic cells (2marks)
- b) Plant and animal cells (6marks)

### **QUESTION FOUR**

- a) Describe the fluid mosaic model of plasma membrane. (5marks)
- b) Outline the functions of different types of proteins in the plasma membrane. (3marks)

### **QUESTION FIVE**

Distinguish the following term

- a) Passive and Active transport (2marks)
- b) Endocytosis and Exocytosis (2marks)
- c) Diffusion and Osmosis (2marks)
- d) Karyokinesis and Cytokinesis (2marks)

## **SECTION B**

### **QUESTION SIX**

Describe the events that take place in different phases of the cell cycle. (15marks)

### **QUESTION SEVEN**

Discuss the functions of cell organelles in a typical animal cell. (15marks)

### **QUESTION EIGHT**

Describe the shape of animal and plant cells when placed in. (15marks)

- a) Hypertonic solution
- b) Isotonic solution
- c) Hypotonic solution