



WI-2-60-1-6

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**  
**University Examinations 2024/2025**

**YEAR I SEMESTER II EXAMINATION FOR THE DEGREE OF MASTER OF  
SCIENCE IN MOLECULAR BIOLOGY**

**TIM 3110: CELL ORGANIZATION STRUCTURE AND FUNCTION**

**DATE: DECEMBER, 2024**

**TIME: 3 HOURS**

**INSTRUCTIONS: Attempt any FOUR questions**

**Question One**

Using a diagram, describe the eukaryotic animal cell and its contents. [25 marks]

**Question Two**

Explain the role of the rough endoplasmic reticulum in the functioning of the plasma membrane. [25 marks]

**Question Three**

Discuss how eukaryotic organisms accomplish their essential functions through the cell. [25 marks]

**Question Four**

Compare and contrast the structure and function of the prokaryotic and eukaryotic ribosomes. [25 marks]

**Question Five**

Discuss how DNA is packaged in the nuclear. [25 marks]

**Question Six**

Discuss the process of mRNA translation and post-translation modifications of polypeptides in eukaryotic organisms. [25 marks]