



W1-2-60-1-6

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND
TECHNOLOGY**

UNIVERSITY EXAMINATIONS 2022/2023

**YEAR I FIRST SEMESTER EXAMINATION FOR THE DEGREE OF MSc in MOLECULAR
MEDICINE**

TIM 3101 – CELL STRUCTURE AND FUNCTION

Date: August 2023

Time: 3 HOURS

INSTRUCTIONS: Answer ANY FOUR questions. Each question is 25 Marks

Question One

- (a) Briefly describe the importance of association between lysosomes and other organelles (10 Marks)
- (b) Describe in details the modes of lysosome localization and movement (15 Marks)

Question Two

Discuss the roles of the secretory pathway within the Endoplasmic reticulum and Golgi bodies (25 Marks)

Question Three

Citing examples, explain how gene transcription can be targeted to control certain disease states (25 Marks)

Question Four

Describe the critical role performed by Endoplasmic reticulum in calcium ions (Ca^{2+}) signal transduction (25 Marks)

Question Five

Account for the structural adaptation of cytoskeleton in performing the cellular functions (25 marks)

Question Six

Cell renewal and apoptosis are important for continued cell survival. Describe the mechanism of apoptosis mentioning the modulators involved (25 Marks)