



W1-2-60-1-6

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
UNIVERSITY EXAMINATIONS 2024/2025

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

TIM 3111 – SIGNAL TRANSDUCTION AND PROTEOMICS

Date: December 2024

Time: 3 HOURS

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

Question One

Describe how DNA methylation:

- a) Affects DNA structure and gene expression (10 Marks)
- b) Contributes to cancer development (15 Marks)

Question Two

- a). Briefly, describe the branches of proteomics (5 Marks)
- b). Describe application of proteomics in diagnosis of diseases and medicine (20 Marks)

Question Three

- i) Briefly, explain why cells require chromatin remodeling (5 Marks)
- ii) Give an account of chromosomal processes that require remodelers (20 Marks)

Question Four

Describe the different types and application of biological networks (25 Marks)

Question Five

Cell signaling is the process by which cells communicate with their environment and respond temporally to external cues that they sense. Describe any five (5) cell signaling pathways (25 Marks)

Question Six

Describe the experimental techniques that can be used to study protein-protein interactions (25 Marks)