



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

(MAIN CAMPUS)

**UNIVERSITY EXAMINATIONS (MAIN PAPER)
2021/2022 ACADEMIC YEAR**

FIRST YEAR SECOND SEMESTER EXAMINATIONS

**FOR THE DEGREE
OF
MASTER OF SCIENCE, MEDICAL BIOTECHNOLOGY**

COURSE CODE: BMB 825

COURSE TITLE: ENDOCRINOLOGY AND CELL SIGNALING

DATE: 20/04/2022

TIME: 8.00 - 11.00 AM

INSTRUCTIONS TO CANDIDATES

Answer all questions. DO NOT WRITE ON THE QUESTION PAPER.

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over

Answer ONLY four (4) Questions (100 marks).

1. Cell signaling is very important for proper coordination of all metabolic process that takes place in living cells. Explain the following in regard to cell signaling (25 marks)
 - a. Signal amplification (5 marks)
 - b. Signal transduction (5 marks)
 - c. Factors that influence signal amplification (7 marks)
 - d. How second messenger take part in the signal amplification pathway (8 marks)
2. Receptors are important structures found on the cell to facilitate cell signaling. Discuss various types of cell receptor and they facilitate cellular communication (25 marks)
3. Explain the effect of glucose concentration on the cAMP and catabolic activator protein (25 marks)
4. describe how cGMP is involved in vasodilation or smooth muscle relaxation (25 marks)
5. Discuss the visual pathway for light transduction in brain? (25 marks)