



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

**FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE OF MASTER
OF SCIENCE IN BIOMEDICAL SCIENCES
FIRST SEMESTER, 2023/2024
(MAY-AUGUST, 2024)**

**MBSC 821: BIOINFORMATICS AND GEOGRAPHICAL INFORMATION
SYSTEMS**

STREAM: Y1S1

TIME: 3 HOURS

DAY: WEDNESDAY, 12.00PM-3.00PM

DATE: 14/08/2024

INSTRUCTIONS

- 1. Do not write anything on this question paper.***
- 2. Answer ANY THREE questions only.***

QUESTION ONE

Giving an example in each case, describe biological databases used in various bioinformatics applications. [20 marks]

QUESTION TWO

Describe how various omics techniques can be used to solve specific questions in biomedical research. [20 marks]

QUESTION THREE

Giving specific examples, describe various applications of the Basic Local Alignment Search Tool (BLAST). [20 marks]

QUESTION FOUR

Describe various bioinformatics experiments that you will conduct to study the biology of a novel gene. [20 marks]

QUESTION FIVE

Discuss the applications of Geographic Information System in health research. [20 marks]