



TECHNICAL UNIVERSITY OF MOMBASA
FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

MSC

AML5111: BIOINFORMATICS

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: 16 Apr 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** Question(s). Attempt any **THREE** questions.

Do not write on the question paper.

Question ONE Briefly describe the procedure of DNA extraction (20 marks)

Question TWO Explain the following as used in Bioinformatics (20 marks)

- a) Minisatellite
- b) Backbone of DNA molecule
- c) Numbering Carbone atoms in ribonucleic acid
- d) The arrangement of base pair in a nucleotide

Question THREE Using simplified structures of phosphate, bases and nucleic acid, construct a DNA molecule and show how DNA strands pair (20 marks)

Question FOUR a) Show by calculation the number of codons that six bases will form

b) Below is a sequence of genetic material. State the number of codons and explain 5' and 3'

5' A T G A C G T G G G G G A 3'
3' T A C T G C A C C C C T 5'

Question FIVE a) Briefly describe the life history of *C. elegans* nematode

b) Describe its importance in molecular science?

c) Briefly describe the anatomical structure of *C. elegans*