



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BTMB

AAB 4206 : MICROBIAL GENETICS PAPER 1

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: Pick Date May 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE (30 Marks)

- (a) Define the following terminologies (3mks)
 - (i) Genetics
 - (ii) Chromosomes
 - (iii) Depurination
- (b) Contrast RNA and DNA (5mks)
- (c) Explain how genetic control of enzyme synthesis is achieved in bacteria (5mks)
- (d) Name the classes of mutations (4mks)
- (e) Distinguish between vertical and Horizontal gene transfer (4mks)
- (f) Describe the steps involved in bacterial transformation (5mks)
- (g) List the properties of transposable genetic elements (4mks)

Question TWO

- (a) Discuss plasmids as an essential tool in molecular biology (10mks)
- (b) Outline the various types of genetic recombination (10mk)

Question THREE

- (a) Highlight the importance of conjugation (5mks)
- (b) Describe the process of F⁺conjugation in bacteria (15mks)

Question FOUR

Explain the DNA repair mechanisms in bacteria (20mks)

Question FIVE

Discuss the lac operon (20mks)