



# TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

## UNIVERSITY EXAMINATION FOR:

INDUSTRIAL MICROBIOLOGY AND BIOTECHNOLOGY (BIMB)  
YEAR IV SEMESTER II

AAB 4402 : ANALYTICAL MICROBIOLOGY PAPER I

END OF SEMESTER EXAMINATION

**SERIES:** APRIL 2016

**TIME:** 2 HOURS

**DATE:** Pick Date Select Month Pick Year

### Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Choose No questions. Attempt Choose instruction.

**Do not write on the question paper.**

### Question ONE

- a) Distinguish the following;
- i) Potency and toxicity
  - ii) Accuracy and precision (6mks)
- b) Elaborate the
- i) Role of biostatics in bioassaying (2mks)
  - ii) Challenges of using intact animals in experimentation (2mks)
- c) Outline FOUR principles that govern the choice and set up of bioassays (4mks)
- d) Outline the role of positive and negative controls in microbiological assays. (4mks)
- e) Give TWO possible error types that could occur during bioassaying (4mks)
- f) Describe the following vitamin assays; i) Curative  
assays (2mks)
- i) Reaction time assays (2mks)
- g) Outline FOUR advantages of measuring potency during early product development (4mks)

### Question TWO

- a) Explain the working principle of the following susceptibility tests
- i) Kirby Bauer test
  - ii) E- test (10mks)
- b) Describe the interpretation of the findings of susceptibility tests (10mks)

**Question THREE**

4 ampoules 20 ml each of Ketoconazole injection have been submitted to your laboratory for evaluation.

Describe the assay(s) you would set up to determine;

- i) Sterility (10mks)
- ii) Potency against a known fungal isolate. (10mks)

**Question FOUR**

Elaborate the process of biological evaluation of a proposed therapeutic preparation as prescribed in pharmacopoeia. (20mks)

**Question FIVE**

Describe the different types of bioassays used in microbiological analyses. (20mks)