



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)