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:APRIL2016

TIME:2HOURS

DATE: Pick DateSelect MonthPick 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. AttemptChoose 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 20ml each of Ketoconazoleinjection 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)