



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

**UNIVERSITY EXAMINATION FOR:**

**BTMB**

**AAB 4402 : ANALYTICAL MICROBIOLOGY**

**END OF SEMESTER EXAMINATION**

**SERIES: DECEMBER 2016**

**TIME: 2 HOURS**

**DATE:** Pick Date Dec 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.**

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- a) **Question ONE** Outline the procedure(s) used to verify the purity of cultures (4mks)
- a) Explain the effect of the age of the test inoculum in determining bioassay outcomes (4mks)
- b) Describe the role of biosensors in substrate assaying. (6mks)
- c) Compare the bracketing and 3 point assays for testing efficacy, citing the advantage that each of the assay has over the other (6mks)
- d) Outline FIVE qualities that need to be put into consideration when choosing a method of bioassaying (5mks)
- f) Describe the following methods of sterility testing;
- i) Immersion (2mks)
  - ii) Membrane filtration (2mks)
- g) Outline the factors influencing the choice of media in disc diffusion tests. (4mks)

## **Question TWO**

Outline the procedure(s) of determining the minimum inhibitory concentration

(20mrks)

**Question THREE**

Four ampoules 10 ml each of Penicillin injection have been submitted to your laboratory for evaluation.

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

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

**Question FOUR**

You have successfully isolated a key *Rhizobium spp.* to be used as a biofertilizer. Explain how the isolate can be maintained in purity over a period of time. (20mks)

**Question FIVE**

Describe the use of microbiological bioassays in quality assurance laboratories. (20mks)