



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A constituent of JKUAT)

**Faculty of Applied and Health Sciences**

**DEPARTMENT OF PURE AND APPLIED SCIENCES**

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF  
TECHNOLOGY IN INDUSTRIAL MICROBIOLOGY AND  
BIOTECHNOLOGY

**BIMBT 09A**

## **SBT 2455 : ANALYTICAL MICROBIOLOGY**

SPECIAL/SUPPLEMENTARY EXAMINATION

FEBRUARY 2013 SERIES

2

HOURS

Instructions to candidates:

This paper consist of **FIVE** questions

Answer question **ONE** (compulsory) and any other **TWO** questions

### **Question ONE**

- State the FIVE principles of bioassays (5marks)
- Describe the use of quantal bioassays (5marks)
- Explain the importance of sterility testing (5marks)
- List FIVE factors that influence the width of zone of inhibition (5marks)
- Name FIVE conditions that necessitate performance antifungal susceptibility tests.

(5marks)

- State FIVE sources of variability in validation of assays. (5marks)

### **Question TWO**

Discuss immersion/direct inoculation method under the following sub-headings:-

- (i) Procedure **(14marks)**
- (ii) Criteria for retesting  
**(6marks)**

### **Question THREE**

Describe the following microbial assays for antibiotic susceptibility testing :-

- (i) Dilution test  
**(8marks)**
- (ii) Diffusion test  
**(12marks)**

### **Question FOUR**

Discuss potency testing under the following sub-headings:-

- (i) Definition **(2marks)**
- (ii) Regulation **(8marks)**
- (iii) Biological assays **(6marks)**
- (iv) Assay design **(4marks)**

### **Question FIVE**

Explain the procedures of the following bioassays :-

- (i) Vitamin assay  
**(12marks)**
- (ii) Decarboxylation assay **(8marks)**