



# 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 2446 : APPLIED MICROBIAL ECOLOGY**

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

- Explain the role of clustering in preventing nitrogenase damage. (5marks)
- Outline the problems of fungi as biocontrol agents. (3marks)
- Name the FIVE biological components of a biosensor (5marks)
- Explain the beneficial uses of urban solid wastes. (7marks)
- Describe the primary stage of sewage treatment (6marks)
- List down any FOUR properties of methane gas (4marks)

### Question TWO

- State any SIX benefits of mycorrhiza in Agriculture (6marks)

b) Describe the symbiotic relationship between endomyconhiza fungi and trees **(14marks)**

### **Question THREE**

a) Describe the mode of infection of nuclear polyhedrosis viruses **(5marks)**

b) Discuss *Paenibacillus popliae* under the following sub-headings:-

i) Mode of action **(7marks)**

ii) Application **(5marks)**

iii) Spread after application **(3marks)**

### **Question FOUR**

a) Name the THREE methods used for sanitary land fills **(3marks)**

b) Describe the following methods of composting :-

(i) Windrow **(5marks)**

(ii) Aerated pile **(5marks)**

(iii) Continuous feed **(7marks)**

### **Question FIVE**

Describe the major stages of industrial microbial penicillin production **(20marks)**