



TECHNICAL UNIVERSITY OF MOMBASA

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School of Applied and Health Sciences  
DEPARTMENT OF PURE AND APPLIED SCIENCES

**UNIVERSITY EXAMINATION FOR:**

BACHELOR OF TECHNOLOGY IN INDUSTRIAL MICROBIOLOGY AND  
BIOTECHNOLOGY

**AAB 4402: ANALYTICAL MICROBIOLOGY**

**END OF SEMESTER EXAMINATION**

**SERIES: DEC 2024 SERIES**

**TIME: 2 HOURS**

**DATE: DEC 2024**

**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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**Question One (30 Marks)**

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|---|---------|
| a. Outline six roles of a bioassay                                      | 3 marks |
| b. Describe the test preparation and standard preparation in a bioassay | 3 marks |
| c. With an example describe a direct assay                              | 3 marks |
| d. Explain the qualitative analysis of bioassay in pesticides           | 3 marks |
| e. Explain the role of evaluation in a bioassay                         | 3 marks |
| f. Validation of Potency Assay  | 3 marks |
| g. Explain the importance of reference materials and controls in assays | 3 marks |
| h. Explain the sampling of lots samples in sterility testing            | 3 marks |
| i. Describe role of analytical methods in test assay                    | 3 marks |
| j. Describe the membrane filter used in sterility testing               | 3 marks |

**Question Two (20 Marks)**

a. Explain the nature of bioassay 10 marks

b. Describe the bioassay of Non starch polysaccharides 10 marks

### **Question Three (20 Marks)**

a. Potency assays plays an essential role in biologics development, Explain. 10 marks

b. Describe the bioassay of Total Reducing Sugar 10 marks

### **Question Four (20 Marks)**

a. Explain the methods of Pesticide bioassay 10 marks

b. Bioassays allow for the detection and characterization of test sample in identifying biologically active substance, Explain 10 marks

### **Question Five (20 Marks)**