



TECHNICAL UNIVERSITY OF MOMBASA

---

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

**UNIVERSITY EXAMINATION FOR:**

BACHELOR OF SCIENCE IN FOOD TECHNOLOGY AND QUALITY AND  
ASSURANCE

AAB 4106 : GENERAL MICROBIOLOGY

SUPPLEMENTARY/SPECIAL EXAMINATION

**SERIES:** JULY 2021

**TIME:** 2 HOURS

**DATE:** Pick Date Dec 2020

**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.**

**Question ONE**

- a. Enumerate five requirements of culture media. (5mks)
- b. State six functions of bacterial cell wall (3mks)
- c. Describe four groups of bacteria based on arrangement of flagella (4mks)
- d. List the functions of bacterial plasma membrane (4mks)
- e. Differentiate between autotrophic and heterotrophic bacteria (4mks)
- f. Using a graph, show the various stages of bacteria growth in batch culture (5mks)
- g. What is the purpose of fixation in microbiology (2mks)
- h. Explain reasons why aseptic technique is key in microbiology laboratories (3mks)

### **Question TWO**

- a. Describe the process for focusing on a slide under the oil immersion lens (15mks)
- b. Describe how to properly clean a microscope (5mks)

### **Question THREE**

- a. List four types of filters. (4mks)
- b. Describe the process of autoclaving (16mks)

### **Question FOUR**

- (a). Describe the following differential staining techniques:
  - i) Acid fast/Ziehl Neelsen staining (5mks)
  - ii) Endospore staining (5mks)
- (b). Describe the principle behind positive and negative staining techniques. (10mks)

### **Question FIVE**

Discuss use of the following methods in food preservation:

- a. Chilling and Freezing (5mks)
- b. Canning (5mks)
- c. Dehydrating (5mks)
- d. Fermenting (5mks)

