

## UNIVERSITY EXAMINATIONS

**FIRST SEMESTER 2025/2026 ACADEMIC YEAR**

**THIRD YEAR EXAMINATION FOR THE DEGREE OF  
BACHELOR OF BIOMEDICAL SCIENCE AND  
TECHNOLOGY**

**BMED 312: BACTERIOLOGY AND MYCOLOGY**

***STREAM: R***

***TIME: 2 HRS***

***DAY: MONDAY [11.30 – 1.30 P.M]***

***DATE: 02/02/2026***

**THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES**

**PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.**

**Answer all the questions in section A and any of the two questions in B**

**SECTION A (40 MARKS)**

**QUESTION ONE**

Outline the general characteristics of pathogenic bacteria and fungi. **(5 Marks)**

**QUESTION TWO**

List the role of hydrolytic enzymes in bacterial pathogenicity. **(5 Marks)**

**QUESTION THREE**

Mention **five** major classes of mycotoxins and describe their impact on human health. **(5 Marks)**

**QUESTION FOUR**

Highlight any five causative agents and diseases caused by Firmicutes (Gram-positive bacteria). **(5 Marks)**

**QUESTION FIVE**

List the main types of cutaneous mycoses and their causative agents. **(5 Marks)**

**QUESTION SIX**

Outline the mode of action of antibiotics on pathogenic bacteria **(5 Marks)**

**QUESTION SEVEN**

Explain the methods used for identification of aerobic and anaerobic bacteria. **(5 Marks)**

**QUESTION EIGHT**

List the role of bacterial biofilms in enhancing virulence and pathogenicity. **(5 Marks)**

**SECTION B (30 MARKS). (ANSWER TWO QUESTIONS ONLY)**

**QUESTION NINE**

Discuss the purpose, process, and clinical significance of antimicrobial susceptibility testing (AST) in guiding antibiotic therapy. **(15 Marks)**

**QUESTION TEN**

Discuss the various diagnostic methods used in the identification of pathogenic bacteria **(15 Marks)**

**QUESTION ELEVEN**

Describe the causative agents and characteristics of systemic and opportunistic mycoses **(15 Marks)**