

UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

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

BMED 414: ANIMAL CELL CULTURE

STREAM: R

TIME: 2 HRS

DAY: THURSDAY [8.30 – 10.30 A.M]

DATE: 29/01/2026

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

INSTRUCTIONS: Answer all the question in section A and any other two questions in section B

SECTION A (40 MARKS)

QUESTION ONE

List any **five** equipments found in a preparatory room of a tissue culture facility. (5 Marks)

QUESTION TWO

Explain briefly the use of plant growth regulators in plant tissue culture. (5 Marks)

QUESTION THREE

Outline the source of macro nutrients used in the murashige and skoog medium (1962) (5 Marks)

QUESTION FOUR

Explain the following in relation to tissue culture; (10 Marks)

- (i) Cell suspension
- (ii) Explant
- (iii) Monolayer
- (iv) Cell line
- (v) Transgenic animals

QUESTION FIVE

Distinguish between finite and continuous cell line. (5 Marks)

QUESTION SIX

Explain 5 applications of cell culture. (5 Marks)

QUESTION SEVEN

Explain the advantages and disadvantages of primary cell culture. (5 Marks)

SECTION B; (30 MARKS)

QUESTION EIGHT (15 MARKS)

Discuss the structural requirements of tissue culture facility establishment. (15 Marks)

QUESTION NINE (15 MARKS)

Explain the various components of the tissue culture medium. (15 Marks)

QUESTION TEN (15 MARKS)

Discuss the qualities of a good explants source for use in tissue culture. (15 Marks)