

UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

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

BMED 214: LABORATORY ANIMAL SCIENCE

STREAM: R

TIME: 2 HRS

DAY: WEDNESDAY [11.30 – 1.30 P.M]

DATE: 28/01/2026

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 two questions in B

SECTION A (40 MARKS)

QUESTION ONE

Explain any **four** (4) ethical principles and practices that should be observed in handling of animals in a laboratory. **(4 Marks)**

QUESTION TWO

Elaborate on the Daize test of cosmetics using the albino rabbit. **(4 Marks)**

QUESTION THREE

Outline biomedical usefulness of the following laboratory animals.

- a) Golden Hamster [*Mesocricetus auratus*] **(1 Mark)**
- b) Guinea pig [*Cavia porcellus*] **(1 Mark)**
- c) Rat [*Rattus norvegicus*] **(1 Mark)**
- d) Rabbit [*Oryctolagus cuniculus*] **(1 Mark)**

QUESTION FOUR

Explain handling and restraining of a mouse **(4 Marks)**

QUESTION FIVE

State the factors that should be considered in planning for adequate and appropriate physical and social environment for laboratory animals. **(4 Marks)**

QUESTION SIX

Explain the criteria for selecting experimental animals for research. **(4 Marks)**

QUESTION SEVEN

Give a brief account of physical hazards that are likely to be encountered when handling laboratory animals. **(4 Marks)**

QUESTION EIGHT

Outline the procedure of collecting 0.5ml of blood from a rabbit's ear. **(4 Marks)**

QUESTION NINE

Outline the functions of institutional animal care and use committee.

(4 Marks)

QUESTION TEN

Indicate the advantages of intravenous injection over oral administration of a drug to an animal.

(4 Marks)

SECTION B: 30 MARKS

QUESTION ELEVEN (15 MARKS)

Describe blood collections from experimental animals in relation to

a) Guidelines for blood collection.

(5 Marks)

b) Blood collection methods.

(10 Marks)

QUESTION TWELVE (15 MARKS)

Discuss the factors that should be considered when planning for a good animal house.

(15 Marks)

QUESTION THIRTEEN (15 MARKS)

Give an account on

a) The aim of transgenesis in animal laboratory science.

(8 Marks)

b) The procedure followed during intravenous injection of a drug in a laboratory animal. **(7 Marks)**