

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

SECOND YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF EDUCATION (BMED)

BMED 214: LABORATORY ANIMAL SCIENCE

STREAM: R

TIME: 2 HRS

DAY: THURSDAY [11.30 – 13.30HRS]

DATE: 08/12/2022

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

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INSTRUCTIONS: - Answer all the questions in Section A and any one question in Section B

SECTION A (50 MKS)

QUESTION ONE

- (a) Differentiate between the following terms: -
- (i) “Clean corridor” and “non-clean corridor” (2 marks)
 - (ii) Conventional animals and Germ animals (2 marks)
 - (iii) Natural diet and synthetic diet (2 marks)
 - (iv) In bred strains and transgenic strains (2 marks)
- (b) Mr. Mugabe, a laboratory technician at Laikipia University wishes to construct a house for biomedical research laboratory animals. Guide him on certain considerations to be put in place to make it meet the standards. (4 marks)
- (c) Mention any two commonly used laboratory animals and in each, state two uses of these animals in biomedical research. (4 marks)

QUESTION TWO

State two common diseases of laboratory animals and state the causative agents. (2 marks)

QUESTION THREE

Explain the significance of the following food substances in laboratory animals.

- (a) Calcium and Phosphorus (2 marks)
- (b) Proteins (1 mark)

QUESTION FOUR

- (a) State the effects of inbreeding. (3 marks)
- (b) Highlight three types of in-bred strains of laboratory animals during breeding process. (3 marks)

QUESTION FIVE

Mrs. Angelo, a farmer from Subukia would like to rear laboratory animals in her farm for sale. She purchased 50 laboratory animals weighing an average of 400grams each. As a biomedical student assist her in calculating the floor space for the 50 animals. (3 marks)



QUESTION SIX

- (a) Briefly discuss the experimental procedures on inoculation of materials in laboratory animals. (5 marks)
- (b). State four commonly used fixatives for histological studies. (2 marks)

QUESTION SEVEN

Explain three (3) advantages of using laboratory animals for biological experiments. (3 marks)

SECTION B (20 MARKS)

QUESTION EIGHT

Discuss the general principles considered in care and management of laboratory animals. (15 marks)

QUESTION NINE

Discuss the various ethical guidelines for the use of animals in biological research. (15 marks)

QUESTION TEN

Discuss the various steps in tissue processing for paraffin sections. (15 marks)

