



W1-2-60-1-6

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
UNIVERSITY EXAMINATIONS 2022/2023
EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN MEDICAL
VIROLOGY

TMM 3117: LABORATORY ANIMAL CARE AND USE

DATE: FEBRUARY 2022

TIME: 3 HOURS

QUESTION ONE

- a) Discuss the importance of animal welfare science in a laboratory research environment (5 marks)
- b) Discuss the three components of animal welfare (5 marks)
- c) Discuss factors to consider in planning for adequate and appropriate physical and social environment, housing, space and management (15 marks)

QUESTION TWO

- a) Discuss the ethical considerations in the care and use of animals for research (10 marks)
- b) Describe how pain in animals can be recognized (5 marks)
- c) Discuss the importance of pain in animals and how it can be mitigated (5 marks)
- d) Briefly discuss the important considerations when transporting animals for research (5 marks)

QUESTION THREE

- a) Discuss the merits and demerits of using animals for research (10 marks)
- b) Discuss alternative models to use of animals in research giving examples, application, advantages and limitations (10 marks)
- c) Discuss examples of discoveries in human health research that came from research disease; animal model and the principle concept of discovery (5 marks)

QUESTION FOUR

- a) Discuss steps followed in establishing and sustaining an animal breeding program (10 marks)
- b) Discuss factors considered when choosing a male for breeding (5 marks)
- c) Discuss factors that determine genetic gain in an animal breeding program (10 marks)

QUESTION FIVE

- a) Discuss the factors considered in provision of quality feed for laboratory animals (10 marks)
- b) Discuss the impact on animal welfare of each of the following aspects in the transport process of research animals:
- i) route or journey planning
 - ii) container design
 - iii) vehicle design
 - iv) competence and attitude of driver
 - v) travel duration (5 marks)
- c) Discuss importance of the following in the management, care and use of laboratory animals:
- i) Water
 - ii) Sanitation
 - iii) Vermin control
- (10 marks)

QUESTION SIX

- a) Discuss types of records required for efficient laboratory animal management (10 marks)
- b) Discuss the important characteristics of records in laboratory information management system (10 marks)
- c) Outline physical hazards to personnel in contact with laboratory animals (5 marks)