



MACHAKOS UNIVERSITY

University Examinations for 2016/2017

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF AGRIBUSINESS MANAGEMENT

FIRST YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF
SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

KAP103 ANATOMY AND PHYSIOLOGY OF FARM ANIMALS

Date: 5/12/2016

Time: 2:00 – 4:00 PM

INSTRUCTIONS:

Answer Question One and Any Other Two Questions

SECTION A (COMPULSORY)

QUESTION ONE (30 MARKS)

- (a) Explain the meaning of the following terms as used in Anatomy and Physiology:
- (i) Metabolism (2 marks)
 - (ii) Homeostasis (2 marks)
 - (iii) Digestion (2 marks)
- (b) Distinguish between the two terms: 'Cellular respiration' and 'External respiration' (2 marks)
- (c) With illustration, describe the anatomic structure of a mammalian skin (5 marks)
- (d) (i) What is 'oestrus' (1 mark)
- (ii) Describe the signs of oestrus in a cow. (4 marks)

- (iii) Explain why accurate detection of oestrus in farm animals is important? (4 marks)
- (e) Discuss the importance of urea cycle in ruminants. (5 marks)
- (f) Explain how the saliva of a ruminant is different from that of monogastric animals? (3 marks)

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

QUESTION TWO (20 MARKS)

- (a) Describe the structure of a mammalian skin. (6 marks)
- (b) Explain the properties of the skin that determine the quality of leather. (4 marks)
- (c) Describe the behavioral and physiological responses of a mammal to hot weather conditions. (10 marks)

QUESTION THREE (20 MARKS)

- (a) Distinguish the main gross anatomical features of a ruminant and monogastric gastro-intestinal system. (10 marks)
- (b) Explain how the ruminant animal benefits from the presence of microbes in the rumen. (6 marks)
- (c) Give two (2) ways in which the saliva of ruminants differ from that of non-ruminants are different. (4 marks)

QUESTION FOUR (20 MARKS)

- (a) Describe the gross anatomical structure of a mammalian respiratory system. (12 marks)
- (b) Briefly explain how the respiratory function responds to changes in oxygen requirement in a mammal and how these responses are controlled. (8 marks)

QUESTION FIVE (20 MARKS)

- (a) Describe the main features of a mammalian kidney. (10 marks)
- (b) Discuss the processes that occur in the mammalian kidney to maintain body fluid balance and to achieve the final composition of urine. (10 marks)