



2nd SEM. 2007/2008

Page 1 of 3

UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

PROGRAMME: BS.c. ANIMAL SCIENCE YEAR 2

TITLE OF PAPER: RANGE MANAGEMENT

COURSE CODE: APH 207

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER QUESTION ONE (1) AND ANY OTHER THREE (3)
QUESTIONS

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CHIEF INVIGILATOR

QUESTION 1

A young man who had been living in the city of Mbabane for most of his life, has just inherited from his late father a ranch measuring 500 ha in the Lowveld of Swaziland. He comes to you seeking advice on how he can properly graze his ranch.

- (a) Highlight (one to two sentences on each) to him the four cornerstones of grazing management and also point out the most the most important of these. (10 marks).
- (b) Eventually this man hires you to calculate the carrying capacity for his ranch. You go out and take 20 samples on his ranch using a 100 cm by 50 cm metal frame; you get an average of 250 g DM.
- (i) Calculate production in kg DM per ha of this ranch. (5 marks)
- (ii) Calculate how many 400 kg cows he can graze in this ranch year round. (10 marks)

QUESTION 2

(a) Rangeland monitoring is an important aspect of range management.

Describe the following methods we used in rangeland monitoring this semester.

- (i) Belt transect method for tree/shrub density. (5 marks)
- (ii) Daubenmire method for determination of species composition. (10 marks)
- (iii) Point intercept method for determination of ground cover. (10 marks)

OR

- (b) Using soil, vegetation and animal; briefly explain both the positive and negative interactions in a range ecosystem. (25 marks)

QUESTION 3

- (a) Fire is an important tool in rangeland management.

Write short notes under the following headlines:

- (i) Uses of fire. (7 marks)
(ii) Frequency of burning in the Lowveld of Swaziland. (3 marks)
(iii) Time of burning. (3 marks).

- (b) Water is one of the most inputs in a ranching operation; discuss the use of permanent rivers (streams) and dams in livestock production. (12 marks)

QUESTION 4

- (a) Poisonous plants may lead to poor animal productivity through loss of products and deaths. Give five guidelines that a farmer can follow to prevent plant poisoning. (5 marks)
- (b) What are five possible long term effects of overgrazing on the range ecosystem? (10 marks)
- (c) Drought is becoming more frequent in the southern African region and this is certainly bad news to farmers. Suggest five things a livestock farmer can do to mitigate drought effects. (10 marks)

QUESTION 5

- Briefly discuss supplementation of animals on range during the dry season. (25 marks)