



2nd SEM. 2011/2012

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UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

PROGRAMME: BS.c. ANIMAL SCIENCE YEAR 2
BS.c. ANIMAL SCIENCE (DAIRY OPTION) YEAR 2

TITLE OF PAPER: RANGE MANAGEMENT

COURSE CODE: AS 205

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER FOUR (4) QUESTIONS

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CHIEF INVIGILATOR

QUESTION 1

- (a) Briefly discuss the four cornerstones of range management indicating which of these is the most important. (15 marks)
- (b) Give five drought management principles a range manager can follow to mitigate against drought effects. (10 marks)

QUESTION 2

- (a) State the five range management concepts. (8 marks)
- (b) Assume you are a range manager in one of the private ranches in the Lowveld of Swaziland; the ranch measures 205 ha. You are asked to calculate the carrying capacity of this ranch. You go out and take 50 samples using a 100 cm by 50 cm metal frame; you get an average of 257 g DM.
- (i) Calculate production in kg DM per ha of this ranch. (4 marks)
- (ii) Calculate how many 400 kg beef cattle can be grazed in this ranch during summer for 180 days. (7 marks)
- (iii) If the animals would have to travel a distance of 2 km to get water, what would be the carrying capacity of the above ranch? (3 mark)
- (iv) On the other hand if the distance to water was normal but the percent slope of the ranch was 15 percent, what would be the carrying capacity of the above ranch? (3 mark)

QUESTION 3

- (a) List four primary vegetation surveys you would carry out to determine optimum stocking rate. (5 marks)
- (b) The impact of invasive weeds on the environment is becoming a serious concern, and governments are spending a lot of money to control these. With particular reference to *Chromolaena odorata* (Siam weed or Sandanezwe), describe the (i) manual and (ii) chemical (herbicides) methods which can be used to control this weed. (20 marks)

QUESTION 4

- (a) Discuss the role of fire as an important tool in the management of rangelands under the headlines (i) Uses of fire, (ii) Precautions to be taken when burning rangelands and (iii) Time of the year to burn. (20 marks)
- (b) Highlight five daily routine duties of farm managers. (5 marks)

QUESTION 5

- (a) State the four natural laws of rangeland ecology. (5 marks)
- (b) The rotation grazing method is not very popular among communal livestock farmers.
- (i) Define and illustrate the concept of rotation grazing. (5 marks)
- (ii) Outline both the advantages and disadvantages of this grazing system. (15 marks)