



2nd SEM. 2013/2014

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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 QUESTION ONE (1) AND ANY OTHER THREE (3)
QUESTIONS

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CHIEF INVIGILATOR

QUESTION 1

- (a) Clearly state the four principles of grazing management that must be adhered to for sustainable livestock production on rangelands. (8 Marks)
- (b) Assume you are a range manager in one of the private ranches in the Lowveld of Swaziland; the ranch measures 2300 ha. You are asked to calculate the carrying capacity of this ranch. You go out and take 150 samples using a 100 cm by 50 cm metal frame; you get an average of 275 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 year-long in this ranch. (7 Marks)
- (iii) If the animals would have to travel a distance of 2.2 km to get water, what would be the carrying capacity of the above ranch? (3 Mark)
- (iv) In addition to the travelling distance in (iii) above, if the percent slope of the ranch is 7 percent, what would be the carrying capacity of this ranch? (3 Mark)

QUESTION 2

- (a) In complete and numbered sentences, give five characteristics that are associated with high grazing resistance in grasses. (5 Marks)
- (b) In a tabular form, contrast the impact of light to moderate grazing versus heavy grazing on range plants. (20 Marks)

QUESTION 3

- (a) Name and define the three range types that are found in Swaziland. (10 Marks)
- (b) Give five drought management principles a range manager can adopt to mitigate against drought effects. (15 Marks)

QUESTION 4

Using a fully labelled diagram, describe the relationship of grazing intensity to range condition and the relative proportion of decreasers, increasers and invaders. (25 Marks)

QUESTION 5

- (a) State the four natural laws of rangeland ecology. (6 Marks)
- (b) The rotational grazing method is not very popular among communal livestock farmers.
 - (i) Define and illustrate the concept of rotational grazing. (7 Marks)
 - (ii) Outline both the advantages and disadvantages of this grazing system. (12 Marks)