



UNIVERSITY OF SWAZILAND

2nd SEM. 2017/2018

FINAL EXAMINATION PAPER

PROGRAMME: B.Sc. ANIMAL SCIENCE YEAR 2
B.Sc. ANIMAL SCIENCE (DAIRY OPTION) YEAR 2

COURSE CODE: ASC 204

TITLE OF PAPER: RANGE MANAGEMENT

TIME ALLOWED: TWO (2) HOURS

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

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE
CHIEF INVIGILATOR**

QUESTION 1

- (a) "If we keep down the shoot, we kill the root." Discuss this statement. (10 Marks)
- (b) You are required to calculate the carrying capacity of a ranch measuring 16000 ha. You go out and take 755 samples using a 100 cm by 50 cm metal frame and you get an average of 317 g DM per quadrat.
- (i) Calculate the production in kg DM per ha of this ranch. (3 Marks)
- (ii) Calculate how many 400 kg beef cattle can be grazed year-long in this ranch. (6 Marks)
- (iii) If the animals would have to travel a distance of 2.3 Km to get water, what would be the carrying capacity of the ranch? (3 Marks)
- (iv) On the other hand if the percent slope of the ranch was 4% what would be the final carrying capacity of the ranch? (3 Marks)

QUESTION 2

- (a) Discuss the four grazing management principles that must be followed by livestock farmers to achieve the highest returns possible. (22 Marks)
- (b) Which of these principles is the most important of them all and why? (3 Marks)

QUESTION 3

- (b) In a tabular form, contrast the impact of light to moderate grazing with heavy grazing on range plants. (25 Marks)

QUESTION 4

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

QUESTION 5

- (a) Discuss the first concept (foundation) of range management: "Range is a renewable resource". (25 Marks)