THE NATIONAL UNIVERSITY OF LESOTHO

FACULTY OF AGRICULTURE

DEPARTMENT OF ANIMAL SCIENCE

SECOND SEMESTER EXAMINATION 2022/2023 SESSION

BSc. AGRICULTURE (RANGE AND ECOLOGY MANAGEMENT)

REM4505: RANGE AND LIVESTOCK MANAGEMENT

JUNE 2023   MARKS: 100   TIME: 3 HOURS

INSTRUCTION: Answer All Questions. You are allowed to use a calculator.

Question 1

Mention and explain types of rangelands (25)

Question 2

Outline and describe four designs of grazing systems (20)

Question 3

Grazing animals usually will not graze an area uniformly, which would lead to patchy areas on the rangeland. Give two reasons that cause uneven grazing and explain them thoroughly. (10)

Question 4

All plants have growing points where new cells are developed and elongate. Grasses are better able to withstand grazing and mowing because removal of the top growth rarely removes the growing point of the plant. Explain clearly the process of vegetative growth during plant growth and response to grazing. (20)

Question 5

Assume that you are a rancher who is fully managing his/her rangeland and oversee of any trend change of rangeland. Narrate the impacts of livestock on soils and vegetation of the rangeland. (12)

Question 6

A range manager Tefo has 4 acres' pasture consisting of two grass species; namely *Themeda triandra* and *Eragrostis curvula*, both of which are well established evenly. The entire pasture has similar soil and other characteristics. He clipped three forage samples from a 0.5 m^2 hoop in an ungrazed area. Forage samples in each hoop were clipped down towards the crown, which represents the amount of forage available for grazing. Average percentage for dry matter forages is 30 and also conversion formula of 65 for grams of forage sampled to kg per acre. Line A gives the fresh sample weights in grams, and Line B gives the bag weight in grams.

Sample: 1   2   3

  A. 260   235   250

  B. 30   30   30

  a) Determine forage production in kg per acre on a dry-weight basis (10)

  b) Find the total of production on the whole pasture. (3)