

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**FOURTH YEAR EXAMINATION FOR THE AWARD OF
BACHELOR OF SCIENCE NATURAL RESOURCE MANAGEMENT**

NARE 421: RANGE PLANT ECOPHYSIOLOGY

STREAMS: NARE Y4S1

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 10/12/2014

11.30 AM – 1.30 PM

INSTRUCTIONS:

SECTION A (ANSWER ALL QUESTIONS) 30 MARKS

1. Briefly explain the following terms
 - (a) Eco-physiology [1 mark]
 - (b) Rangeland [1 mark]
 - (c) Photoperiod [1 mark]
 - (d) Gibberellins [1 mark]
 - (e) Differed grazing [1 mark]
2. Identify the different forms of range plants used as a basis of classification. [5 marks]
3. List five adaptations that enable range plants to cope with water stress in hot dry environments. [5 marks]
4. Briefly highlight the role of nutrients in plant growth. [5 marks]
5. Explain why plants must store carbohydrates [5 marks]
6. Differentiate between increaser and decreaser plants in response to herbivory. [5 marks]

SECTION B (ANSWER ANY TWO QUESTIONS) 40 MARKS

7. Discuss the grazing tolerance and avoidance mechanisms of range plants [20 marks]

8. Discuss the effect of the following environmental factors on range plant growth and development.
- (a) Temperature [10 marks]
- (b) Light [10 marks]
9. Discuss the photosynthetic pathway of C4 plants, highlighting its advantages and disadvantages in terrestrial ecosystems. [20 marks]
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