



UNIVERSITY OF EMBU

2017/2018 ACADEMIC YEAR

SECOND SEMESTER EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE IN AGRICULTURE AND BACHELOR OF SCIENCE IN RANGE
MANAGEMENT

ACS 207: FORAGE SCIENCE AND PASTURES

DATE: APRIL 9, 2018

TIME: 11:00 – 1:00 PM

INSTRUCTIONS:

Answer Question ONE and ANY other TWO (2) Questions.

QUESTION ONE (30 MARKS)

- a) Differentiate between the following
- i) Forb and Browse (3 marks)
 - ii) Hay and silage (3 marks)
 - iii) Rangelands and pasture lands (3 marks)
- b) Distinguish between Communal pastoral livestock production system and extensive livestock production system (3 marks)
- c) Describe the most appropriate planting time for pastures in tropical environments (5 marks)
- d) Give at least five main positive attributes of *Leucaena leucocephala* that make it a more widely grown and used fodder tree than *Calliandra calothyrsus* (5 marks)
- e) Identify the possible reasons that have contributed to making *Brachiaria* species grasses as the most widely spread forage worldwide today (4 marks)
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- f) Give two examples of warm season grasses and two examples of cool season grasses.
Remember to give both the common and scientific names of the grasses (4 marks)

QUESTION TWO (20 MARKS)

- a) Discuss the economic importance of grasslands to man (8 marks)
- b) Give at least five native rangelands in different parts of the world and discuss the practices necessary in management of them (plus other grazing lands) that may be considered for mitigating climate change through carbon sequestration and other greenhouse gases reduction strategies (12 marks)

QUESTION THREE (20 MARKS)

Rhodes grass (*Chloris gayana*) has been described as the most popular and successful forage grass in East Africa. Examine the success of this livestock source of feed under the following sub themes:

- i) Soil and moisture requirements (5 marks)
- ii) Mode of establishment (5 marks)
- iii) Dry matter production, palatability and nutritive value to livestock (5 marks)
- iv) Seed production, availability and its limitations (5 marks)

QUESTION FOUR (20 MARKS)

- a) Describe the main qualities of good hay (8 marks)
- b) Discuss the key principles employed in silage making process (12 marks)

QUESTION FIVE (20 MARKS)

Discuss the establishment of grass/legume pastures under the following sub headings

- i) Seedbed preparation (8 marks)
- ii) Seeding methods (8 marks)
- iii) Seeding rate and planting depth (4 marks)

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