



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES

DEPARTMENT OF AGRICULTURAL SCIENCES

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

AGR 400: PASTURE AND FODDER PRODUCTION AND MANAGEMENT

DATE: 25/8/2022

TIME: 2.00-4.00 PM

INSTRUCTIONS:

Answer *ALL* questions from Section A and any other *TWO* from Section B

SECTION A: COMPULSORY: (30 MARKS)

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Describe three methods farmers can adopt in oversowing Desmodium in Kikuyu grass (3 marks)
- b) Explain four reasons why farmers are advised to establish pasture and fodder rather than depending on natural pastures (4 marks)
- c) Explain three conditions under which a farmer will adopt fodder bank production (3 marks)
- d)
 - i. With a specific example, explain two reasons why farmers are advised to treat seeds before planting (2 marks)
 - ii. Describe three methods a farmer can use in the treating seed in question (i) above (3 marks)
- e) Explain four limitations of planting ryegrass as a livestock feed (2 marks)
- f) Describe three methods you would recommend a farmer to adopt in establishing Napier grass (3 marks)
- g) Explain three reasons that discourage farmers from planting boma Rhodes (3 marks)
- h) Explain three advantages of lablab that make farmers adopt as a fodder and not as a food crop (3 marks)
- i) Explain four reasons why farmers would prefer conserving forage as hay rather than silage (4 marks)

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

QUESTION TWO (20 MARKS)

- a) Explain five advantages of cut-and-carry systems in Kenya white clover. (5 marks)
- b) Discuss five ways in which farmers can improve natural pastures for improved livestock productivity. (15 marks)
- c) Explain five conditions under which farmers can be encouraged to establish calliandra as a fodder crop. (5 marks)

QUESTION THREE (20 MARKS)

- a) Describe the establishment and management of the Nandi Setaria under the following sub headings: (12 marks)
 - i. Planting
 - ii. Head smut damage
 - iii. Fertility Management
 - iv. Strengths
- b) Discuss the establishment and management of the common vetch under the following sub-headings: (8 marks)
 - i. Ecological conditions
 - ii. Ascochyta blight damage
 - iii. Harvesting and utilization
 - iv. Advantages

QUESTION FOUR (20 MARKS)

- a) Discuss four management practices in managing pests in fodder cereals, giving one example in each method (8 marks)
- b) Describe the establishment and management of Buffalo grass under the following sub headings (12 marks)
 - i. Propagation
 - ii. Grazing
 - iii. Compatibility with other species
 - iv. Harvesting

QUESTION FIVE (20 MARKS)

- a) With a specific example, describe three non-conventional ways a farmer can adopt in obtaining fodder as a measure of avoiding competition with food crops. (6 marks)
- b) Describe the procedure for preparing silage using Lucerne as an example (14 marks)