



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

AGR 309: PERENNIAL CROPS

DATE: 17/11/2020

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)

- a) Explain four roles of perennial crops in mitigating climate change effects in Kenya (2 marks)
- b)
 - i) Explain four management practices in pyrethrum farming that would encourage farmers to adopt in order to enhance production (4 marks)
 - ii) Describe each of the following in pyrethrum production
 - I. Harvesting (4 marks)
 - II. False bud disease symptoms (2 marks)
- c) Describe three differences between Assam and China tea (3 marks)
- d) Explain four reasons for decreasing production and utilization of sisal in Kenya (4 marks)
- e) Giving one crop example, explain two reasons each why farmers are encouraged to carry out the following practices in perennial crop production
 - i. Shading (2 marks)
 - ii. Cutting back (2 marks)
 - iii. Rehabilitation (2 marks)
- f) Describe three types of pruning in tea production (3 marks)
- g) With one specific example of a crop, describe two damages caused by top borers (2 marks)

SECTION B: Answer any TWO Questions (40 Marks)

QUESTION TWO (20 MARKS)

Explain the propagation of sugarcane under the following headings

- a) Ecological conditions (5 marks)
- b) Spacing requirements (4 marks)
- c) Harvesting (5 marks)
- d) Pest management practices (6 marks)

QUESTION THREE (20 MARKS)

Describe macadamia production under the following headings

- a) Climatic requirements (5 marks)
- b) Pruning (4 marks)
- c) Canopy management (6 marks)
- d) Propagation (5 marks)

QUESTION FOUR (20 MARKS)

- a) Explain production of coconut under the headings
 - i. Weeding (3 marks)
 - ii. Seedbed preparation (5 marks)
 - iii. Harvesting and storage (5 marks)
- b) Explain seven challenges facing tea farmers that has contributed to low production in Kenya (7 marks)

QUESTION FIVE (20 MARKS)

Describe the production of coffee under the following headings

- a) Climatic requirements (5 marks)
- b) Pruning (4 marks)
- c) Coffee berry disease symptoms (6 marks)
- d) Fertilization (5 marks)