



# MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

DIPLOMA IN AGRICULTURAL EDUCATION AND EXTENSION

AGR 0309: PERENNIAL CROPS

**DATE: 7/12/2021**

**TIME: 8.30-10.30 AM**

## INSTRUCTIONS:

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

### SECTION A: COMPULSORY: (30 MARKS)

#### QUESTION ONE (30 MARKS)

- a) Explain two reasons why shade trees should be included in some perennial crop plantations (2 marks)
- b) Explain five roles of perennial crops in environmental management and sustainability (5 marks)
- c) Describe propagation of the following perennial crops
  - i. Macadamia (2 marks)
  - ii. Sugarcane (2 marks)
  - iii. Coffee (2 marks)
- d)
  - i) Explain the importance of tipping in tea production (2 marks)
  - ii) Distinguish between fine and coarse plucking in tea production (2 marks)
- e) Explain two uses of the following crops
  - i. Coconut (2 marks)
  - ii. Pyrethrum (2 marks)
  - iii. Sisal (2 marks)
- f) Explain two differences between *Arabica* and *Robusta* coffee (2 marks)

- g) Explain three methods of local sisal twine extraction (3 marks)
- h) Describe four symptoms caused by coffee berry disease (2 marks)

**SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)**

**QUESTION TWO (20 MARKS)**

- a) Explain macadamia production in Kenya under the following
- i. Training (3 marks)
  - ii. Canopy management (9 marks)
- b) Explain four management practices carried out for maximum production of pyrethrum (8 marks)

**QUESTION THREE (20 MARKS)**

Discuss Coffee production under the following headings

- a) Pruning (5 marks)
- b) Uses (5 marks)
- c) Fertilizer application (5 marks)
- d) Coffee wilt disease (5 marks)

**QUESTION FOUR (20 MARKS)**

- a) With relevant examples, explain five management practices of pests and diseases in a coconut farm (10 marks)
- b) Explain ten challenges facing perennial crop production in Kenya (10 marks)

**QUESTION FIVE (20 MARKS)**

Explain the propagation of tea under the following headings

- a) Planting (5 marks)
- b) Pruning (5 marks)
- c) Weeding (5 marks)
- d) Harvesting (5 marks)