



MACHAKOS UNIVERSITY

University Examinations 2018/2019

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: 25/4/2019

TIME: 8:30 – 10:30 AM

INSTRUCTIONS:

Answer Question One and Any Other Two Questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) With one specific crop example, explain two roles played by the following ecological requirements in perennial crops (6 marks)
- i) Temperature
 - ii) Light
 - iii) Height above sea level
- b) i) Explain four roles of perennial crops towards the growth and development of industries in Kenya (4 marks)
- ii) Describe four characteristics of perennial crops. (2 marks)
- iii) Describe between *robusta* and *arabica* coffee (2 marks)
- c) With the current global warming effect, explain the role of sisal in combating the witnessed climate changes (2 marks)
- d) Explain two reasons why you would advise a farmer to practice each of the following management practices in perennial crops
- i) Shading (2 marks)
 - ii) Top working (2 marks)

- iii) Rogueing (2 marks)
- iv) Cutting back (2 marks)
- e) Describe the damage caused by the following pests/diseases to crops.
 - i) Red ring nematode (2 marks)
 - ii) Tea mosquito (2 marks)
 - iii) Pineapple disease (2 marks)

QUESTION TWO (20 MARKS)

Explain the propagation of cashew nut under the following headings

- i) Ecological conditions (5 marks)
- ii) Spacing requirements (5 marks)
- iii) Harvesting (5 marks)
- iv) Post-harvest handling (5 marks)

QUESTION THREE (20 MARKS)

Discuss coffee production under the following headings

- i) Climatic requirements (5 marks)
- ii) Pruning (5 marks)
- iii) Breeding and selection (5 marks)
- iv) Crop establishment (5 marks)

QUESTION FOUR (20 MARKS)

a) Explain production of coconut under the headings

- i) Weed Control (3 marks)
- ii) Seedbed preparation (5 marks)
- iii) Harvesting and storage (5 marks)

b) Explain seven challenges facing sugarcane farmers that has contributed to low production. (7 marks)

QUESTION FIVE (20 MARKS)

- a) Describe the production of macadamia under the following headings
- i) Climatic requirements (5 marks)
 - ii) Canopy management (4 marks)
 - ii) Utilization (3 marks)
- b) Explain four management practices in pyrethrum farming you would encourage farmers to adopt in order to enhance production (8 marks)