



# MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENTION

HOR 441: VEGETABLE PRODUCTION

DATE: 26/7/2019

TIME:8.30-10.30 AM

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## INSTRUCTIONS:

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

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

**QUESTION ONE (30 MARKS)**

- a) Describe the THREE ways of categorising cabbage varieties based on maturity period and give an example in each case (3 marks)
- b) Describe FOUR agronomic advantages of African indigenous vegetables (4 marks)
- c) Explain TWO classifications of vegetables based on temperature adaptation (4 marks)
- d) Explain FOUR reasons for pruning tomatoes (4 marks)
- e) Outline FOUR ways in which African nightshades can be utilised (4 marks)
- f) Describe the TWO grades used in classifying Frenchbean pods in Kenya (4 marks)
- g) Describe the symptoms and control measures of late blight in potatoes (4 marks)
- h) Describe THREE ways in which beetroots are utilised (3 marks)

**SECTION B: Answer any TWO Questions (40 Marks)**

**QUESTION TWO (20 MARKS)**

Discuss production of onion under the following headings:

- a) Climatic requirements (5 marks)
- b) Crop establishment (5 marks)

- c) Fertilizers and manure application (5 marks)
- d) Harvesting and grading (5 marks)

**QUESTION THREE (20 MARKS)**

Discuss production of Kale (*Brassica oleracea* Var. *acephala*) under the following sub-topics

- a) Climatic and soil requirements (5 marks)
- b) Crop establishment (5 marks)
- c) Fertilizer and manure requirements (5 marks)
- d) Harvesting and utilization (5 marks)

**QUESTION FOUR (20 MARKS)**

In the recent years, there has been a lot of advocacy in production of African indigenous vegetables due to their higher nutritional value among other benefits. Discuss how you can promote production of leaf amaranth under the following topics

- a) Propagation of seedlings in the nursery (5 marks)
- b) Land preparation and crop establishment (5 marks)
- c) Common pests and their control (5 marks)
- d) Harvesting (5 marks)

**QUESTION FIVE (20 MARKS)**

- a) Discuss the major constraints in production of vegetables (10 marks)
- b) Explain strategies that can be used to address those challenges in question 5 (a) (10 marks)