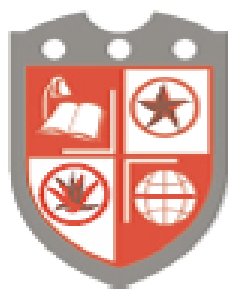


LAIKIPIA



AGED 415

UNIVERSITY

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2025/2026 ACADEMIC YEAR

FOURTH YEAR EXAMINATIONS FOR BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

AGED 415: TROPICAL AND SUBTROPICAL FRUITS

STREAM: BSC(AGED

TIME:2 HRS

DAY: MONDAY (14.30-16.30)

DATE: 02/02/2026

THIS QUESTION PAPER CONSISTS OF THREE (3 PAGES)

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

INSTRUCTIONS:

Question one is compulsory select any other two questions

QUESTION ONE

- 1a) Define *tropical fruits* and *subtropical fruits*, giving an example of each. (4 marks)
- b) Describe two factors influencing the distribution of tropical and subtropical fruit. (4 marks)
- c) Explain two climatic requirements of the following fruits
 - i) Mango (2 marks)
 - ii) Pineapple (2 marks)
- d) Discuss three major propagation methods used for tropical and subtropical fruits, giving one fruit example for each method. (9 marks)
- e) i) Analyze two main post-harvest handling problems affecting tropical fruits. (2 marks)
 - ii) Suggest one control measure for each problem in (e i). (2 marks)
- f) Design a fruit orchard layout plan suitable for a 1-hectare tropical fruit farm (choose a fruit crop), indicating spacing, planting systems, and windbreak arrangements. (5 marks)

QUESTION TWO

- 2a) Describe the botanical characteristics (root, stem, leaves, and fruit structure) of citrus species. (5 marks)
- b) Discuss five nutritional importance of tropical and subtropical fruits in human diets. (5 marks)
- c) Explain five ways temperature variations influence fruit quality and yield in subtropical regions. (5 marks)
- d) With aid of diagrams describe two geometric planting layouts used in tropical fruit orchard (5 marks)

QUESTION THREE

- 3a) Explain three soil management practices that enhance productivity in fruit orchards. (6 marks)
- b) Using examples, analyze four ways pests and diseases affect fruit yield and quality. (4 marks)
- c) Evaluate five effectiveness of integrated pest management (IPM) in tropical fruit production. (5 marks)
- d) Discuss 5 key factors to consider when selecting a site for fruit orchard establishment. (5 marks)

QUESTION FOUR

- 4a) i) State two advantages of organic fruit production systems. (2 marks)
- ii) Explain three limitations of conventional fruit production systems. (3 marks)
- b) Discuss five environmental challenges facing tropical and subtropical fruit production. (5 marks)
- c) Suggest five sustainable production strategies for improving tropical fruit farming. (5 marks)
- d) Differentiate between training and pruning explaining their objectives in fruit management. (5 marks)

QUESTION FIVE

- 5a) Critically assess five roles of value addition in improving income in tropical fruits. (5 marks)
- b) ii) State one export potential of two major tropical fruits from Kenya. (2 marks)
- ii) Explain three challenges faced in selling tropical fruits from Kenya in international markets. (3 marks)
- c) Propose a research-based innovation (e.g., improved cultivar, storage method, or processing technique) that could enhance fruit productivity or quality. (5 marks)
- d) i. Discuss three plant hormones stating their effect in plant growth. (3 marks)
- ii. State two methods of breaking seed dormancy in mangoes. (2 marks)