KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE
SECOND SEMESTER, 2023/2024
(JANUARY-APRIL, 2024)

AGRO 482: CROPPING SYSTEMS

STREAM: Y4 S2 **TIME: 2 HOURS**

DAY: FRIDAY, 12:00 – 2:00 P.M. **DATE: 12/04/2024**

INSTRUCTIONS

1. ***Do not write anything on this question paper.***
2. ***Answer ALL questions in Section A and any TWO questions in section B***

SECTION A (30 Marks)

Answer ALL questions

1. Explain the following terms as used in cropping systems, citing examples:
   (a) Sequential cropping
   (b) Ratoon cropping
   (c) Duoculture
   (d) Polyculture
   (e) Monoculture (10 marks)

2. (a) Explain two benefits of intercropping a cereal crop with a legume. (2 marks)

   (b) Outline any four methods of controlling weeds in a cropping system. (4 marks)
   (c) List and briefly explain any four cultural pest management practices. (4 marks)
3. (a) Explain the term, "Integrated Pest Management" (IPM) technique in a cropping system? (5 marks)
   (b) What are the salient economic risks in crop mixtures? (5 marks)

SECTION B (40 marks)

Answer any TWO Questions in this section

1. (a) Discuss (biological) resource use efficiency (RUE) by intercrops (16 marks)

   (b) Discuss the term "Land Equivalent Ratio"(LER) (4 marks)

2. (a) Discuss biological and physical advantages of multiple cropping systems as compared to sole cropping regimes. (10 marks)

   (b) Explain major biological, physical, social and economic disadvantages of intercropping plant species (10 marks)

3. (a) The Destructive Crop Hypothesis (DCH) concept has been used to control pests in an intercropping system worldwide. Discuss. (10 marks)

   (b) The key objective of breeding for multiple cropping systems is to increase the temporal differences between the crop species. Describe the traits of interest for successful multiple cropping approach. (10 marks)