

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF MASTER OF SCIENCE IN
AGRONOMY**

AGRI 812: DRYLAND FARMING

STREAMS: MSC AGRONOMY

TIME: 3 HOURS

DAY/DATE: FRIDAY 06/12/2019

11.30 A.M. – 2.30 P.M.

INSTRUCTIONS:

- Answer ALL questions in section I and any TWO in section II.

SECTION I (20 MARKS)

- Q1. (a) What is setline cultivation? Is there any benefit to adopt such a practice in dry land farming areas? (3 marks)
- (b) National resources in dry land areas should be managed on sustainable basis to improve productivity. Outline how such resources should be managed. (5 marks)
- Q2. (a) Explain to farmers in dry land farming area on the rainfall constraints they are likely to face during their crop production and management. (5 marks)
- (b) Explain the benefits farmers in dry lands farming conditions can achieve through adoption of minimum or reduced tillage in their production systems. (5 marks)
- (c) The ability of a crop to grow satisfactorily under water stress conditions requires it to have ability to escape or be resistant to drought. Describe how plants can resist drought through avoidance. (2 marks)

SECTION II (40 MARKS)

- Q3. (a) Discuss the conditions that may influence establishment of optimum population towards increasing crop yields in dry land cropping systems. (12 marks)
- (b) Explain why it is advisable for farmers in dry land farming conditions to adopt alternative land use systems. (4 marks)
- (c) Briefly explain the factors that may affect the choice of crops to grow in dry land areas. (4 marks)
- Q4. (a) Discuss the climatic constraints that affect crop production activities under dry land farming conditions. (10 marks)
- (b) Soil groups in dry land areas affect crop production differently. Advice farmers on soil constraints that may affect crop production in dry land farming conditions. (6 marks)
- (c) Tillage is the mechanical manipulation of soil to create conditions ideal for seed germination, seedling establishment and growth of crops. In your opinion, what should be the aim of tillage in dry land farming situations? (4 marks)
- Q5. (a) Discuss the agronomic measures of soil conservation that can be adopted by farmers to improve crop performance. (12 marks)
- (b) Briefly explain why you can advise farmers to adopt pre-rainy season dry seeding and the factors that may affect the success of such practice. (8 marks)
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