



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## University Examinations 2013/2014

FIRST YEAR, SECOND SEMESTER EXAMINATIONS FOR DEGREE OF BACHELOR OF  
SCIENCE IN FOOD SCIENCE AND NUTRITION  
AND

FIRST YEAR, SECOND SEMESTER EXAMINATIONS FOR DEGREE OF BACHELOR OF  
SCIENCE IN FOOD SCIENCE AND TECHNOLOGY

### AHS 2130: CROP PRODUCTION

**DATE: APRIL 2014**

**TIME: 2 HOURS**

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**INSTRUCTIONS:** Answer question *one* and any other *two* questions

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#### QUESTION ONE – (30 MARKS)

- (a) State any five causes of soil acidity. (5 Marks)
- (b) Soil texture is an important component of a good soil
- (i) Define the term soil texture. (2 Marks)
- (ii) Explain any three importance of soil texture in relation to crop production. (3 Marks)
- (c) Rainfall is one important climatic factor which influences crop production
- (i) Explain any three aspects of rainfall which needs to be put into consideration when choosing a type of crop to grow in a given area. (3 Marks)
- (ii) Explain any three adverse effects of excessive rainfall to crop production. (3 Marks)
- (d) (i) What is domestication? (2 Marks)
- (ii) State any three characteristics of a domesticated plant. (3 Marks)
- (iii) Differentiate between primary centre and secondary centre of diversity. (4 Marks)
- (e) Tillage is important in crop production
- (i) Define the term tillage. (2 Marks)
- (ii) State any three chemical objectives of tillage. (3 Marks)

**QUESTION TWO – (20 MARKS)**

- (a) State any four advantages of tillage. (4 Marks)
- (b) (i) What is soil tilth. (2 Marks)
- (ii) Explain any three factors which affect tillage time. (3 Marks)
- (c) Name and explain any three tillage systems. (3 Marks)
- (d) State any three advantages of no-tillage relay crop. (3 Marks)
- (e) Differentiate between shifting cultivation and bush fallowing. (2 Marks)

**QUESTION THREE – (20 MARKS)**

- (a) Spacing is recommended in crop production
  - (i) Define the term spacing (1 Mark)
  - (ii) State any three advantages of using the recommended spacing. (3 Marks)
- (b) Explain any three factors which determine the spacing a farmer should use in his farm. (3 Marks)
- (c) (i) What is seeding depth? (1 Mark)
- (ii) What are the three factors which determine the seeding depth? (3 Marks)
- (d) State any five fertilizer application methods. (5 Marks)
- (e) What is the importance of applying lime in the farm. (2 Marks)
- (f) State any three factors which influences the quality of cattle manure. (3 Marks)

**QUESTION FOUR – (20 MARKS)**

- (a) Rainfall is very much needed for crop production. State any four roles that rainfall plays in crop production. (4 Marks)
- (b) Light is very much need by crops. Write short notes on light under the following sub-headings:
  - (i) Light intensity (2 Marks)
  - (ii) Light quality (2 Marks)
  - (iii) Light compensation point (2 Marks)
  - (iv) Light duration (2 Marks)
  - (v) Photo periodism (2 Marks)
- (c) State any
  - (i) Three effects of soil salts. On crop production. (3 Marks)
  - (ii) Three factors influencing the level of soil organic matter content. (3 Marks)

**QUESTION FIVE – (20 MARKS)**

- (a) (i) State any two importance of soil PH on the crop performance. (2 Marks)
- (ii) What are the sources of soluble salts in soil. (2 Marks)
- (b) (i)What is test weight as used in post harvest handling of grains? (2 Marks)
- (ii)Explain any three factors which influences the grains test weight. (3 Marks)
- (c) (i) What is harrowing? (1 Mark)
- (ii) State any four importance of harrowing. (4 Marks)
- (d) State any three physical and biological objectives of tillage. (3 Marks)