



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## University Examinations 2012/2013

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN CROP PROTECTION

### AHS 2130: CROP PRODUCTION

DATE: APRIL 2013

TIME: 2 HOURS

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

#### QUESTION ONE – 30 MARKS

- a. Crop plants may be classified according to the level of moisture/water requirement. What do you understand by the following terms? Give one example for each. (6 Marks)
- Hydrophyte
  - Mesophyte
  - Xerophytes
- b. Light is an absolute requirement for plant growth and development. Discuss. (3 Marks)
- c. State five important characteristics of soil necessary for crop production. (5 Marks)
- d. State and explain any three factors affecting nutrients availability in the soil. (3 Marks)
- e. What do you understand by the following terms: (6 Marks)
- Continuous cropping
  - Inter cropping
  - Root crop and tuber crop
- f. What are the effects of premature harvesting of grains and seeds? (2 Marks)
- g. State the advantages of maize stooking during harvesting? (2 Marks)
- h. Name two crop varieties grown for processing and give two examples of their products each. (3 Marks)

#### QUESTION TWO – 20 MARKS

- a. Explain how you can modify the environment to make it suitable for crop production. (10 Marks)
- b. What are the objectives of tillage? (5 Marks)
- c. What factors would you recommend to be considered before tillage operation is done? (5 Marks)

### QUESTION THREE – 20 MARKS

- a. Define crop rotation. (2 Marks)
- b. Outline three principles used in planning crop sequence in crop rotation programme. (3 Marks)
- c. Given that a farmer has divided his farm into three plots A, B, and C in which he intends to have a three year rotation programme with cotton, maize and groundnuts crops. Complete the table below on how the crops will appear in year 2 and year 3 if the farmer has already allocated his crops in plots as shown in year1.

|        | <b>Year 1</b> | <b>Year 2</b> | <b>Year 3</b> |
|--------|---------------|---------------|---------------|
| Plot A | Cotton        |               |               |
| Plot B | Maize         |               |               |
| Plot C | Groundnuts    |               |               |

- d. What do you understand by the following terms: (6 Marks)
  - i. Asexual propagation
  - ii. Cutting
  - iii. Layering
  - iv. Graffing
- e. When is it advisable to use vegetative propagation? (3 Marks)

### QUESTION FOUR – 20 MARKS

- a. Explain the following terms with respect to pest: (20 Marks)
  - i. Economic pest
  - ii. Economic damage
  - iii. Economic injury level (E.I.L)
  - iv. Economic threshold (ET)
  - v. Illustrate graphically in relation to (E.I.L) and E.T

### QUESTION FIVE – 20 MARKS

- Explain the economic importance, utilization and value addition of: (20 Marks)
- i. Maize
  - ii. Cowpeas
  - iii. Sunflower
  - iv. Irish potato