



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2010/2011
INSTITUTIONAL BASED PROGRAMME (IBP) – AUGUST SESSION
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE (AGRICULTURE) AND BACHELOR OF EDUCATION (SCIENCE)
KRM 201: AGRICULTURE FIELD ENGINEERING

DATE: Tuesday 28th December 2010

TIME: 11.00a.m -1.00p.m

INSTRUCTIONS: Answer question **ONE** and any other **THREE** questions.

QUESTION ONE (Compulsory)

- a) Giving examples of tools and implements that may be used, briefly describe the following terms:
- Primary tillage
 - Secondary tillage
 - Tertiary tillage
- (6 marks)
- b) List four possible impacts of frequent tillage (4 marks)
- c) Using a sketch, differentiate an isometric and an orthographic drawing? (4 marks)
- d) Highlight six factors that must be considered in the design of greenhouse for crop production (6 marks)
- e) List five elements that should be considered in farm building construction (5 marks)

QUESTION TWO (15 MARKS)

- a) Describe the main factors in the evaluation of the cropping system (8 marks)
- b) Describe how you would increase the power per unit area so as to make your tillage operations economical. Highlight the impacts of each method. (6 marks)
- c) Describe the main determinants of tillage activities at various levels (8 marks)

QUESTION THREE (15 MARKS)

- a) Define the following terms:
- i) Land quality
 - ii) Land characteristic
 - iii) Land suitability
 - iv) Major kind of land use
 - v) Multiple land utilization type
 - vi) Compound land utilization type
- (6 marks)
- b) Describe six principles of land suitability assessment (6 marks)
- c) Describe three types of errors that may occur during chain surveying clearly highlighting corrective measures. (3 marks)

QUESTION FOUR (15 MARKS)

- a) Explain the purpose for mechanization in agricultural production (6 marks)
- b) Describe the process of surveying (6 marks)
- c) Describe role of ventilation in greenhouse crop cultivation (3 marks)

QUESTION FIVE (15 MARKS)

- a) Explain how a grower can influence the control of the following environmental factors in greenhouse crop cultivation.
- a) Temperature
 - b) Humidity
 - c) Light
- (3 marks)
- b) Give five reasons why storage is necessary in agricultural production systems (5 marks)
- c) Using examples, describe two ways in which foundations may be classified. (4 marks)
- d) Describe three loads that should be considered in design of structures (3 marks)