



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

INSTITUTIONAL BASED PROGRAMME (IBP) – DECEMBER SESSION

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (AGRIBUSINESS AND TRADE AND AGRICULTURAL RESOURCE MANAGEMENT)

KRM 201: AGRICULTURE FIELD ENGINEERING

DATE: THURSDAY, 3RD MAY 2012

TIME: 2.00 P.M – 4.00 P.M

INSTRUCTIONS

- This paper consists of **TWO SECTIONS**
- Answer **ALL** QUESTIONS IN **SECTION ONE**
- ANSWER **ANY THREE** QUESTIONS OF YOUR CHOICE IN **SECTION TWO**

SECTION ONE

QUESTION ONE (COMPULSORY)

- a) What is Primary tillage and why is it necessary? Name any five (5) of the farm implements which may be used in Primary tillage (5 marks)
- b) Give five (5) possible impacts of frequent tillage (5 marks)
- c) Describe the main steps involved in the process of surveying (5 marks)
- d) Briefly describe five (5) factors that influence animal environmental requirements (5 marks)
- e) List five (5) general recommendations for design and construction of slaughter houses (5 marks)
- f) What is a greenhouse? List five main parameters that must be considered in the design of a greenhouse (5 marks)
- g) List five reasons of storage (5 marks)
- h) Briefly describe five agricultural structures (5 marks)

SECTION TWO (ANSWER ANY TWO)

QUESTION TWO

- a) A farmer has just bought a new farm and would like to prepare the land for crop production. Describe the role of any four (4) key factors that may influence the timing and type of tillage. (8 mark)
- b) Soil produces resistance against plough movement. State the main resistances and how the longitudinal forces on the plough may be reduced? (5 marks)
- c) Differentiate between a land characteristic and a land quality. (2 marks)

QUESTION THREE

- a) Describe the terms "land suitability assessment". Clearly name the main factors involved in the assessment. (3 marks)
- b) Describe any four (4) basic principles of agricultural mechanization (4 marks)
- c) Maendeleo Ranch is a cooperative society comprising of over 100 members. During last year's annual general meeting, members resolved to subdivide the land and engage in individual subsistence agriculture.
- i) Give four (4) examples of application of surveying in the process of subdivision. (4 marks)
 - ii) Due to shortage of equipment and skilled labour, a consultant advised them to use chain (tape) surveying. Describe four (4) main errors that may arise and suggest possible solutions (4 marks)

QUESTION FOUR

- a) Briefly describe any three (3) principles of land suitability assessment. (3 marks)
- b) Why is the utilization of labor productivity enhancing technologies necessary in agricultural production? (6 marks)
- c) Aerial surveying is occasionally used in agriculture. Name 3 possible errors that occur during aerial surveying and how they may be overcome. (6 marks)

QUESTION FIVE

- i) Describe the nine (9) stages involved in the adoption process of agricultural mechanization (adoption of technologies for enhancing labor productivity) (according to Riik 1989) (9 marks)
- ii) Give four (4) possible uses of aerial surveying to a farmer. (2 marks)
- iii) Briefly describe any four design features for fruit support structures (4 marks)