



KIBABII UNIVERSITY COLLEGE (KIBUCO)

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2014 /2015 ACADEMIC YEAR**

SECOND YEAR FIRST SEMESTER EXAMINATIONS

MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF COMMERCE

COURSE CODE: BCD 206

COURSE TITLE: MANAGEMENT DECISION MODELS

DATE: 22ND JANUARY 2015

TIME: 3.00-5.00 P.M.

INSTRUCTIONS TO CANDIDATES:

Answer Question ONE and any other Two Questions

TIME: 2 Hours

QUESTION 1 (30 MARKS) COMPULSORY

- a) What do you understand by the term Management Decision Models? (5 marks)
- b) (i) Describe the various differences between the types of mathematical models that you know (5 marks)
- ii) Discuss the various classifications of models (5 marks)
- c) A company manufactures two products A and B. These products are processed in the same machine. It takes 10 minutes to process 1 unit of product A and 2 minutes for each unit of product B and the machine operates for a maximum of 35 hours in a week. Product A requires 1 kg and B 0.5Kg of raw material per unit, the supply of which is 600 kg per week. Market constraints on product B is known to be 800 units every week product A costs Kshs 5/= per unit and sold at Kshs 10/=. Product B costs Kshs 6/= per unit and can be sold in the market at a unit price of Kshs8/=. Determine the number of units of A and B per week to maximize the profit. (15 marks)

QUESTION 2

Electrical Equipment Ltd is engaged in the production of power transformers and traction transformers. Both of these categories of transformers pass through three basic processes Viz core-preparation, core –to-coil assembly and processing (Vapour phase drying). The power transformer yields contribution of Kshs 10,000. The time required in terms of hours for each of the process is shown below.

	Power Transformers	Traction
Transformers		
Core-preparation	75	15
Core-to-coil Assembly	160	30
Vapour-phase drying	45	10

The capacity of the core-building shop, Assembly shop and Vapour Phase drying equipments are as under

Process	Available Capacity (HIS)
Core-preparation	1000
Core-to-coil Assembly	1500

Required

Develop a linear programming Model for the above product to solve for maximization of contribution. (20 marks)

QUESTION 3 (20 MARKS)

- i. Briefly describe the differences between PERT and CDM in relation to the Historical point of view and emphasis in application (6 marks)
- ii. Discuss the essential steps involved in the application of PERT (6 marks)
- iii. Discuss the four major characteristics of a management decision Model giving relevant examples (12 marks)

QUESTION 4 (20 MARKS)

Write short notes on the following

- i. Limitations of Linear Programming (5 marks)
- ii. Types of games (5 marks)
- iii. The saddle Point (5 marks)
- iv. Importance of Game theory in Management decision making process (5 marks)

QUESTION 5

- a) What is Queuing theory? (4 marks)
- b) When do Queues arise? Explain using an example. (2 marks)
- c) What is simulation? (2 marks)
- d) Discuss the advantages and the disadvantages of simplex method in Management Decision Making process (6 marks)
- e) Discuss the areas of application where Monte Carlo simulation has been used (6 marks)

END