TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Business and Social Studies

DEPARTMENT OF BUSINESS STUDIES

UNIVERSITY EXAMINATIONS FOR DEGREE IN

BACHELOR OF COMMERCE

BFI 4304: FINANCIAL FORECASTING AND MODELING

END OF SEMESTER EXAMINATIONS

SERIES: AUGUST 2014

TIME: 2 HOURS

INSTRUCTIONS:

- Answer Question **ONE (Compulsory)** and any other **TWO** questions.
- Do not write on the question paper

This paper consists of Three printed pages

QUESTION 1 (Compulsory)

a) Using cost minimization function of a manufacturing firm, describe in detail the steps involved in modeling process and how the firm can be able to achieve its objective function. **(15 marks)**

b) Given that Mzalendo Company sells goods to **FOUR** territories: Tudor, Majengo, Kilifi and Changamwe, and also have **FOUR** salesmen whose allowances per month is as follows:

Salesman	TERRITORIES			
	Tudor	**Majengo**	**Kilifi**	**Changamwe**
1	10,000	25,000	5,000	4,000
2	12,000	23,000	9,000	2,000
3	14,000	20,000	8,000	1,000
4	13,000	20,000	7,000	3,000

You are required to assign salesmen to sales territories so as to minimize cost of operations.

(15 marks)

QUESTION 2

Describe the systematic-decision making process in mathematical modeling and how modeling is essential to the process. **(20 marks)**

QUESTION 3

Production costs per week for Executive Furniture Company are identical at each factory but the only relevant costs are those of shipping from each source to each destination. The costs are shown below:

	To (Destinations)		
From (sources)	**Kisumu**	**Nakuru**	**Nairobi**
Mombasa	$5	$4	&3
Malindi	$8	$4	$3
Lamu	$9	$7	$5

An estimation of the monthly production capacity at each factory and an estimation of the number of desks that are needed each month at each of the three warehouses is shown below:

Factories (sources)	**Warehouses (destination)**
1000 Units – Mombasa	Kisumu – 300 units
3,000 – Malindi	Nakuru – 200 units
3,000 Units - Lamu	Nairobi – 200 Units

Required:

Set up a transportation model and use the North-West corner rule to develop the initial solution in order to come up with an optimal solution for this problem.

(20 marks)

QUESTION 4

a) Distinguish between Normative modeling and Descriptive modeling, giving relevant example of each. **(8 marks)**

b) Briefly explain the main assumptions that analysts make when dealing with linear programming models. **(12 marks)**

QUESTION 5

Write short notes on the following:

a) Assignment models. **(5 marks)**

b) Iconic models **(5 marks)**

c) Scenarios **(5 marks)**

d) Objective functions. **(5 marks)**