TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Business & Social Studies

DEPARTMENT OF BUSINESS STUDIES

UNIVERSITY EXAMINATIONS FOR

MASTERS IN BUSINESS ADMINISTRATION

BFI 5201: FINANCIAL FORECASTING & MODELING

END OF SEMESTER EXAMINATIONS

SERIES: APRIL 2015

TIME: 3 HOURS

INSTRUCTIONS:

- Attempt question **ONE (Compulsory)** and any other **THREE** questions
- Do not write on the question paper.

This paper consists of Two printed pages

QUESTION 1 (Compulsory)

a) Discuss **FIVE** applications of Mathematical Modeling. **(10 marks)**

b) Giving relevant examples, distinguish between forecasting and modeling. **(4 marks)**

c) Tongo Base requires 2000 units of Product 'T' in the coming year when cost will be shs. 5 each. These products are available locally and lead time is one week. Each order costs shs. 5 to prepare and process, while the holding cost is shs. 2 per unit, per annum.

Required:

i) Explain what is meant by "lead time". **(1 mark)**

ii) Obtain the economic order quantity. **(2 marks)**

iii) How many orders will be placed in a year? **(2 marks)**

iv) Obtain the interval between two consecutive orders. **(2 marks)**

v) Obtain the total inventory costs. **(2 marks)**

vi) Obtain the total overall costs. **(2 marks)**

QUESTION 2

Describe the degrees or levels of model abstraction and briefly explain the benefits of using financial models in business world today. **(25 marks)**

QUESTION 3

a) Briefly outline and explain the areas where assignment models can be used in business world today. **(10 marks)**

b) Given that Bajaj Co. sells motor cycles to four regions Mombasa, Mtwapa, Kilifi and Malindi, and also has four sales people: Mohamed, Sheila, Salim and John, who can generate profits per month as follows (in 000's)

	Territories			
Sales Person	**Mombasa**	**Mtwapa**	**Kilifi**	**Malindi**
Mohamed	100	250	50	40
Sheila	120	230	90	20
Salim	140	200	80	10
John	130	200	70	30

Required:

Assign sales person to different sales regions/territories so as to maximize profits from sales. **(15 marks)**

QUESTION 4

"Models are valuable if you make better decisions when you use them than when you don't". Discuss this statement in light of model construction, both in real world and symbolic world. **(25 marks)**

QUESTION 5

Write short notes on the following:

a) Break-even Analysis **(5 marks)**

b) Objective function **(5 marks)**

c) Transportation Model **(5 marks)**

d) Scenarios **(5 marks)**

e) Simulation **(5 marks)**