

TECHNICAL UNIVERSITY OF MOMBASA

UNIVERSITY EXAMINATION FOR THE DOCTOR OF PHILOSOPHY IN ENTREPRENEURSHIP

BMS 6102: ECONOMIC ANALYSIS

Special/Supplementary paper

INSTRUCTIONS

Answer question one and any other three questions

Time: Three hours

QUESTION ONE

- i) The production function of a printing project is given by  $Q = 80 + K^{1/2} + L^{1/2}$  where L represents labour, K capital and Q output. The constraint is given as  $C = 2L + 2K$ . If the project plans to minimise its costs for a specified level of output  $Q_0 = 88$ ;
- a) State the project's constrained cost minimization problem 2mks
  - b) Construct the corresponding Langrangian function 3mks
  - c) What are the critical values of L and K? 5mks
  - d) What is the minimum cost? 2mks
  - e) Explain the significance of marginal concept in economics 3mks
- i) Explain the following theories indicating relevance and limitations in explaining investment behavior
- a) Internal Funds Theory 8mks
  - b) Accelerator theory 7mks

Question two

Calculate the equilibrium price and quantity for the three commodity interdependent market model given below;

$$Q_{d1} = 45 - 2P_1 + 2P_2 - 2P_3$$

$$Q_{d2} = 16 + 2P_1 - P_2 + 2P_3$$

$$Q_{d3} = 30 - P_1 + 2P_2 - P_3$$

10mks

$$Q_{s1} = -5 + 2P_1$$

$$Q_{s2} = -4 + 2P_2$$

$$Q_{s3} = -5 + P_3$$

Question three

The demand function for producing a certain product is given as  $P = \frac{50}{\sqrt{X}}$ . The cost function of producing product X is  $C = 0.5X + 500$ .

- Find the price per unit that will yield maximum profit 3mks
- Find the output level that will maximize the profit 2mks
- Find the maximum profit 1mk
- Show that the second order conditions have been met at the maximum profit level 4mks

**Question four**

The commodity and money sectors of an economy are given by

$$C = 10 + 0.7Y$$

$$I = 100 + 7r$$

$$Y = C + I$$

$$M_D = 10 + 0.3Y - 0.3r$$

$$M_S = 100$$

$$M_D = M_S$$

- Determine the equilibrium level of Y and r 6mks
- Estimate the values of investment and consumption at this level 4mks

**Question five**

You are an entrepreneur that produces fast moving consumer goods. Of late, there has been a slowdown in consumption of these goods. Discuss any five macroeconomic factors that could be responsible for the declining consumption 10mks

**Question six**

Calculate the cost function and the conditional input demands for the linear

production function  $y = \sum_{i=1}^n \alpha_i x_i$  10mks

## **BMS 6102: Economic Analysis**

**Lecture Hours: 45**

**Prerequisite:** None

### **Course Purpose**

To equip learners with analytical tools in micro and macro economic theories; and their applications in real life situations including their usefulness in examining business and economic issues.

### **Learning Outcomes**

At the end of the course, the learners should be able to:

- a) Apply supply and demand analysis to relevant economic issues;
- b) Apply marginal analysis to the “firm” under different market conditions;
- c) Analyze the causes and consequences of different market structures
- d) Apply economic models to examine current economic issues and evaluate policy options for addressing these issues

### **Course Description**

Introduction: scope of economics, economic models and optimization; theories of consumer behavior; theories of producer behavior, cost and production functions; theories of market structure; game theories, welfare economics and theory of general equilibrium. Theories of economic growth: Classical, Keynesian and rational expectations theories. The labour market, money and financial markets. Theories of business and trade cycles. Development economics and growth. Emerging markets and contemporary issues.

### **Teaching methodologies**

Teaching methods include Lecture method, Case study studies and Group discussions

### **Instructional materials/equipment**

Computers, Teaching notes, White boards, Smart boards and Markers.

### **Course Assessment**

Continuous assessment	40%
Final Written Examination	60%
Total	100%

### **Core Text**

1. Jehle, G. & Reny, P. (2000). *Advanced Microeconomic Theory*. 2<sup>nd</sup> Edition
2. Nicholson, W. & Snyder, C. (2006). *Microeconomic Theory: Basic Principles and Extensions*. 9<sup>th</sup> Edition
3. Romer, D. (2006). *Advanced Microeconomic Theory*. 3<sup>rd</sup> Edition. New York: McGraw-Hill

### **Supplementary Text**

1. John, B. Taylor (1998). *Economics*. 2<sup>nd</sup> Edition. Chapter 5
2. McAfee, R. (2006). *Introduction to Economic Analysis*. Accessed from <http://www.mcafee.cc/Introecon/IEA2007.pdf>
3. Varian, H. (2003). *Intermediate Microeconomics*. Chapter 2-8

### **Core Journals**

1. *International Economic Review*
2. *Review of Economics and Statistics*
3. *The World Bank Economic Review*

### **Supplementary Journals**

1. *The Journal of Economic Analysis*
2. *Journal of Development Economics*
3. *World Development*