

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 $C = 0.5X + 500$.

- a) Find the price per unit that will yield maximum profit 3mks
- b) Find the output level that will maximize the profit 2mks
- c) Find the maximum profit 1mk
- d) 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

$$C = 10 + 0.7Y$$

$$I = 100 + 7r$$

$$Y = C + I$$

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

$$M_S = 100$$

$$M_D = M_S$$

- a) Determine the equilibrium level of Y and r 6mks
- b) 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*. 2nd Edition
2. Nicholson, W. & Snyder, C. (2006). *Microeconomic Theory: Basic Principles and Extensions*. 9th Edition
3. Romer, D. (2006). *Advanced Microeconomic Theory*. 3rd Edition. New York: McGraw-Hill

Supplementary Text

1. John, B. Taylor (1998). *Economics*. 2nd 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*