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# MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

## MAIN EXAMINATION

### UNIVERSITY EXAMINATIONS
### 2023/2024 ACADEMIC YEAR

### FIRST YEAR FIRST SEMESTER EXAMINATIONS

### FOR THE DEGREE OF MASTERS OF SCIENCE IN ECONOMICS

**COURSE CODE:** ECO 801

**COURSE TITLE:** ADVANCED MICROECONOMICS

**DATE:** TUESDAY, 19-12-2023      **TIME: 9:00 - 12:00**

**INSTRUCTIONS TO CANDIDATES**

**ATTEMPT: QUESTION ONE AND ANY OTHER THREE**
TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 3 Printed Pages. Please Turn Over.

## QUESTION ONE

a). What do you understand by consumer preference? (2 Marks)

b). Distinguish between weak and strict preference relation. (3 Marks)

c). Explain the properties of preference relation. (3 Marks)

d). Prove that the marginal cost curve of a perfect competitive firm cuts the average cost curve from below at its minimum point. (5 Marks)

e). Suppose that a firm in a perfectly competitive market has the cost function given as;

$C = 70Q - 1/3 \ Q^2$. Determine the firm's supply function. (5 Marks)

f). State, derive and explain the Lerner Index of market power. (8 Marks)

g). Draw an Edgeworth box example with an infinite number of prices that are Walrasian equilibria. (10 Marks)

h). Distinguish between Bertrand and Cournot Model (4 Marks)

## QUESTION TWO

a) Suppose every firm in a perfect competitive market has the following cost function

$C(y) = y^3 - 10y^2 + 42y$ where y = output of the firm

i). How much output will each firm produce and at what price? (3 Marks)

ii). Suppose the market demand function is given as $Y = 2,750 - 75P$, what would be the total market demand? (3 Marks)

iii). Given the information obtained in (i) and (ii) above, what is the optimal number of firms in this market? (2 Marks)

iv). Suppose a quantity tax of Ksh 3 is introduced on every amount consumed, what is the new market demand and new optimal number of firms? [Assume the burden of the tax is fully reflected in the price]. (2 Marks)

v). How many firms exit the market due to the price rise? (2 Marks)

b) Discuss any 4 properties of a well-behaved profit function (8 Marks)

## QUESTION THREE

a) Consider the following direct utility function

$U = X_1^a X_2^{1-a}$

Required;

i). Compute the compensated demand functions. (5 Marks)

ii). Calculate the Marshallian demand functions and the indirect utility function using identity approach. (9 Marks)

iii). Using (i) and (ii), demonstrate the Slutsky's equation. (6 Marks)

## QUESTION FOUR

**a).** Prove that the marginal **cost** curve of a perfect competitive firm cuts the average cost curve from below at its minimum point. (5 Marks)

**b).** Consider the following C.E.S production function

$$Q = A \, [0.6L^{-2} + 0.4 \, K^{-2}]^{-1/2}$$

Where Q is output, K and L are input capital and labour respectively

i). Calculate $MP_L$ and $MP_k$ (4 Marks)

ii). Compute the elasticity of substitution for the above function (6 Marks)

c). With the help of a well labelled diagram, explain the inefficiency of monopoly (5 Marks)

## QUESTION FIVE

a). State the properties of indirect utility function ( 5 Marks)

b). Using the tools of indifference curve analysis and appropriate diagrams, how will a consumer respond to a fall in the price of a normal good? (15 Marks)

## QUESTION SIX

(a) Derive the money multiplier and explain clearly the determines of money supply determined. (6 marks)

(b) Theories of Real Business Cycle pay more attention on the propagating mechanisms that are likely to amplify the shocks than the shocks themselves. Explain. (7 marks)

(c) What do you understand by Ponzi game? Explain the possibility of a government running Ponzi games to manage budget deficit indefinitely. (3 marks)

(i) What are the cost of budget deficits. (4 marks)