MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
SECOND YEAR FIRST SEMESTER

SCHOOL OF BUSINESS & ECONOMICS
BACHELOR OF SCIENCE INECONOMICS
BACHELOR OF SCIENCE IN FINANCIAL ECONOMICS
BACHELOR OF SCIENCE IN ECONOMICS AND STATISTICS

COURSE CODE: ECO 2103
COURSE TITLE: INTERMEDIATE MICROECONOMICS

DATE: 3RD DECEMBER 2018   TIME: 8.30 – 10.30 A.M

INSTRUCTIONS TO CANDIDATES

Answer Question **ONE** and any other **THREE** questions

This paper consists of 4 printed pages. Please turn over.

QUESTION ONE

(a) Differentiate between the following terms

(i)   Interior solutions and boundary solutions   10marks

(ii)   Marginal Utility and marginal Product

(iii)   Marginal rate of substitution (MRS) and marginal rate of technical substitution (MRTS)

(iv)   Substitution effect and income effect of utility change

(v)   Isoquant and indifference curve

(b)   A firm in a perfectly competitive market produces two goods Y_1 and Y_2 respectively priced at Kshs. 5 and 6 respectively. The firm's total cost function is given as $TC = 3Y_1^2 + 3Y_1Y_2 + 2Y_2^2 + 9$

(i)   Find the total revenue function of the firm   1 mark

(ii)   Find the profit function of the firm   1 mark

(iii)   Find the critical values of Y_1 and Y_2 for profit maximization   6 marks

(iv)   By applying the second order conditions, verify that the critical values present the maximum profit   2 marks

(c) A monopolist's is facing the following a demand function   5 marks
specified as $Q = 25 - 0.25P$ and has a cost function of the form $C = 35 + 40Q$. Find the number of units Q that maximizes the profits

QUESTION TWO

(a) A utility equation is specified as $U = \beta_1 X_1 + \beta_2 X_2$

(i)   Characterize the preference   2 marks

(ii)   Derive the equation of the indifference curve   2 marks

(iii)   Demonstrate that marginal rate of substitution of the two goods is equal to the ratio of marginal utility of the two goods   3 marks

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(b)   A 2-plant monopolist has a demand function specified   8 marks
as $P = 100 - 0.5Q$. The first and second plants have cost
functions specified as $C_1 = 10Q_1$ and $C_2 = 0.25Q_2^2$
respectively. Find the optimal price (P) and quantities
$(Q_1 and\ Q_2)$ for the monopolist.

QUESTION THREE

(a) A Cobb-Douglas Utility Function is specified as $U(X_1 X_2) = 21X_1^{0.7}X_2^{0.3}$.

Where X_1 and X_2 are units of Good 1 and Good 2 that the
consumer consumes to maximize utility.
Suppose that the consumer is seeking to maximize his utility
from consumption of the two goods from an income of Kshs.
840, and that Good 1 and Good 2 respectively cost the
consumer Kshs. 12 and Kshs. 5.6 to purchase.

(i)   Formulate the consumer utility maximization problem   1 mark

(ii)   Find the optimal units of Good 1 and Good 2 that maximize   10mrks
the utility of the consumer
(b)   What does it mean to say that a Cobb-Douglas utility
function is:
(i)   Monotonic?   2 mrks

(ii)   Convex?   2 mrks

QUESTION FOUR

(a) Explain any three conditions which must exist for a   6 marks
monopolist to practice price discrimination
(b)   A monopolist's demand curve is given as $Q = 200 - P$,
where Q is the quantity produced and sold and P is the price
per unit is Kshs. If the monopolist's marginal cost is Kshs. 10:

(i)   Calculate the monopolist's equilibrium quantity and price   5 marks

(ii)   Suppose the monopolist behaved competitively, how   1 mark
would the answer in(i) differ?

(iii)   A monopolist is known to cause inefficiency. Find the value   3 marks
of the deadweight loss due to the monopolist

QUESTION FIVE
(a) Define Pareto efficiency   3 marks
(b)   Differentiate between the weak axiom of revealed preferences   4 marks
and the strong axiom of revealed preferences.
(c) With the aid of a well labeled diagram, explain the income and   8Marks
substitution effects in which the latter outweighs the former

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