KABARAK **UNIVERSITY**

UNIVERSITY EXAMINATIONS

2010/2011 ACADEMIC YEAR

FOR THE DEGREE OF BACHELOR OF SCIENCE IN ECONOMICS AND MATHEMATICS AND BACHELOR OF COMMERCE

COURSE CODE: ECON 210

COURSE TITLE: INTERMEDIATE MICROECONOMICS

STREAM: Y2S1

DAY: FRIDAY

TIME: 2.00 – 4.00 P.M

DATE: 10/12/2010

INSTRUCTIONS:

1.Attempt **QUESTION ONE** and any other **TWO QUESTIONS**

2.Appropriate diagrams may be used where they serve to illustrate an answer.

3.All workings must be shown clearly.

PLEASE TURNOVER

QUESTION ONE

a) Peter's preferences are expressed in the following utility function:

$$U = 4 X_1^{\frac{1}{4}} X_2^{\frac{3}{4}}$$

Peter spends Kshs. M per month on purchases of the two goods X_1, and X_2 whose prices are given as P_1 and P_2 respectively.

    i.   Calculate the marginal rate of substitution (MRS) of X_1 for X2 (3 marks)

    ii.   Supposing that peter does not save, give his budget line and interpret the slope of this line. (2 marks)

    iii.   Obtain the budget equations from 1 (a) (ii) (2 marks)

    iv.   Assume that P_1 decreases, what would happen to the budget line and its slope? (2 marks)

    v.   Differentiate between substitution and income effects of a fall in price of X_1 (5 marks)

b) (i)Using the information provided in 1(a) above derive, the marshallian demand functions (6 marks)

    (i)Explain the properties of marshallian demand functions. (3 marks)

c) Using the information in 1(a), derive the compensated (Hicksian) demand functions. (7 marks)

QUESTION TWO

a) Explain the main features of a perfectly competitive firm. (71/2 marks)

b) Explain the behavioral rules for profit maximization. (6 marks)

c) Suppose that the output of a profit maximizing firm in the long-run is given as:
$f(X_1 \, X_2) = X_1^a \, X_2^b$
and the cost of X_1 is r and cost of X_2 is w.
obtain the input demand functions X_1 and X_2 for this firm. (61/2 marks)

QUESTION THREE

a) Outline the main features of monopoly (4 marks)

b) Using appropriate diagram(s) explain the short-run profit maximization for a monopoly firm. (5 marks)

c) Consider a price discriminating monopolist who faces two markets. The demand curves for the two markets are given as:

$$Q_1 = 100 - P_1$$

$Q_2 = 100 - 2P_2$

The monopolist also faces a constant marginal cost = Kshs. 50

If the monopolist is profit – maximizing, determine the price that the monopolist will

charge in each market. (6 marks)

d) Suppose the monopolist in 3 (c) above decides to charge a uniform price in both markets.
   i. What is the output ,Q that the monopolist should sell in both markets?
   (3 marks)
   ii. What price should it charge in order to maximize profit? (2 marks)

QUESTION FOUR

a) (i) Distinguish between isocost and isoquant (3 marks)
   (ii)What are the economic interpretations of the slopes of isocost and isoquant curves?
   (3 marks)
   (iii) Why is an isoquant for normal goods convex to the origin? (2 marks)
b) Using appropriate diagram, explain the least cost factor combination of a
   firm operating in the long-run. (5 marks)
c) A cobb-Douglas production function for a firm is given as:
   $$Q = \alpha K^{\beta} L^{1-\beta}$$
   Where K is capital and Lis labor. The prices of capital and labor are given as r and w
   respectively.
   i) Determine the firm's marginal rate of technical substitution (MRTS)
      between K and L (4 marks)
   ii) Show that the production function exhibits constant returns to scale
      (3 marks)