CHUKA   **UNIVERSITY**

COLLEGE

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UNIVERSITY EXAMINATIONS

EMBU CAMPUS

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR OF COMMERCE**

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BCOM 201: INTERMEDIATE MICROECONOMICS

STREAMS: BCOM Y2S1   **TIME: 2 HOURS**

DAY/DATE: WEDNESDAY 8/8/2012   **2.30 P.M. - 4.30 P.M.**

INSTRUCTIONS:

Answer question one and any other two questions.
Do not write on the question paper.

1. (a)   Graphically decompose and hence explain the impact of price decrease into
           substitution effect and the income effect using the Hicksian and Slutsky methods.
           Assume the affected good is a normal good.   [15 marks]

    (b)   Assume that the consumer has a demand function for milk of the form.

           $$x_1 = 10 + \frac{M}{10P_1}$$

           You are further given the following information:

           Originally his income is Ksh 120 per week and the price of milk is Ksh 3 per
           week and the price of milk is Ksh 3 per litre.

           (i)   Find the consumer's demand for milk.   [1 mark]

           (ii)   Suppose the price of milk falls to Ksh 2 per litre. Find the new demand
                   and hence total change in demand.   [2 marks]

           (iii)   Find the substitution and income effect.   [12 marks]

2. You are given the following utility function

$$U(X_1 X_2) = x_1^a x_2^b$$

(a) Form Lagrangian function and hence find the demand function for x_1 and x_2.

[10 marks]

(b) Find the marginal utilities (MU_{x_1}, MU_{x_2}) and marginal rate of substitution.
(MRS).

(c) Explain the axioms about consumer preferences. [6 marks]

3. (a)   Explain the term price discrimination. [1 mark]
   (b)   Outline any three types of price discrimination. [3 marks]
   (c)   What conditions must be present for price discrimination to be possible under monopoly? [2 marks]
   (d) Write short notes on the degrees of price discrimination. [3 marks]

   (e) Suppose the monopolist faces two markets with demand curves given by:

   $D_1(P_1) = 100 – P_1$
   $D_2(P_2) = 100 – 2P_2$

   (i)   Assume that the monopolist's marginal cost is constant at Kshs 20 a unit. If it can price discriminate, what price should it change in each market in order to maximize profits? [7 marks]

   (ii)   What if it can't price discriminate? What price should it change? [4 marks]

Q4.   (a)   Suppose the demand function facing a monopolist is as follows:

   $$P = 20 – Q$$

   While the cost function is

   $$C = 30 – Q^2$$

   (i)   Determine the optimal output and price. [2 marks]

   (ii)   Suppose the government imposed a 45% tax on the gross profit.
          What is the new equilibrium output and price? [3 marks]

(b)   Assume that the government now levies a sales tax of 5% on each item sold by the monopolist. Find the profit maximizing output and price.   [5 marks]

(b)   Assume that an industry has two firms A and B. Further assume that the market demand is P = 200 – 0.8Q

Assume also that the colluding firms have costs given as

$$C_a = 10Q_a^2 \quad \text{and } C_a = 80Q_b$$

(i)   Determine equilibrium price and output.   [5 marks]

(ii)   Determine the quantity each firm should produce.   [5 marks]