MURANG'A UNIVERSITY COLLEGE

(A Constituent College of Jomo Kenyatta University of Agriculture and Technology)

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF COMMERCE

MAIN CAMPUS

UNIVERSITY EXAMINATIONS
ORDINARY
2015/2016 ACADEMIC YEAR

YEAR TWO SEMESTER TWO EXAMINATIONS

BACHELOR OF COMMERCE

COURSE CODE: HBC 2205 **COURSE TITLE: INTERMEDIATE MICROECONOMICS**

DATE: 26TH APRIL 2016 **TIME: 2 HOURS**

INSTRUCTIONS TO THE CANDIDATES

THIS PAPER CONSIST OF FOUR QUESTIONS

Question one (1) is Compulsory

Answer Any Other Two (2) Questions

MRUC observes ZERO tolerance to examination irregularities

QUESTION ONE (30 MARKS)

a) Define

i) An indifference curve **(2 marks)**

ii) Substitution effect of price change **(2 marks)**

iii) Income effect of price change **(2 marks)**

iv) Marginal rate of substitution **(2 marks)**

v) Marginal rate of technical substitution. **(2 marks)**

b) With the aid of a diagram, explain why consumer's indifference curves do not intersect. **(4 marks)**

c) Consider the following demand function given by;

$$P = \frac{M}{20Q - 400}$$

Where;

P =Price of good X=6, M=Income=240

If price (P) decreases from 8 to 6, compute substitution and income effect of price change **(10 marks)**

d) With the aid of a diagram Show that monopoly is inefficient relative to perfect competition. **(6 marks)**

QUESTION TWO (20 MARKS)

a) Utility function of an individual is given by

$$U = X^{\frac{1}{4}}Y^{\frac{3}{4}}$$

Find the optimal quantities of the two goods given that price of good X is shs. 6 per unit, price of good Y is shs. 3 per unit and income of the individual is equal to shs. 120. **(10 marks)**

b) Explain the following concepts:

i) Constant returns to scale. **(2 marks)**

ii) Increasing returns to scale. **(2 marks)**

iii) Decreasing returns to scale. **(2 marks)**

c) Prove that the slope of an isoquant is the ratio of the marginal product of the two inputs **(4 marks)**

QUESTION THREE (20 MARKS)

a) A discriminating monopolist is selling a product in two separate markets in which demand functions are:

$P_1 = 12 - Q_1$

$P_2 = 20 - Q_2$

The monopolist total cost function is:

TC = 3+2Q

Required:

i) Determine the prices to be charged in the two markets and amount of output to be sold in each market so that profits are maximized. **(5 marks)**

ii) Calculate the total profits to be made from the strategy of price discrimination. **(4 marks)**

iii) Determine the prices to be charged in the two markets and amount of output to if the firm does not price discriminate. **(5 marks)**

b) Consider the following demand and cost functions for a perfectly competitive firm;

$p = 40$ {Demand function}

$C = 50 + 10Q^2 - 20Q$ {Cost Function}

Find, Profit maximizing level of output and level of profits. **(6 marks)**

QUESTION FOUR (20 MARKS)

a) Consider two consumer's A and B whose utility functions are given as $U_a(X_a^1, X_a^2)$ and $U_b(X_b^1, X_b^2)$ where X_a^1 and X_a^2 are the amounts of goods 1 and 2 consumed by consumer A and X_b^1 and X_b^2 are the amounts of good 1 and 2 that consumed by consumer B. Let W^1 *and* W^2 represent the availability of the two goods 1 and 2. Show that at pareto efficiency, the marginal rate of substitution between the two goods must be equal. **(14 marks)**

b) Identify and explain the conditions under which price discrimination is possible. **(6 marks)**