# 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**
**SUPPLEMENTARY**
**2015/2016 ACADEMIC YEAR**

**YEAR TWO SEMESTER TWO EXAMINATIONS**

**BACHELOR OF COMMERCE**

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

**DATE:** **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*

This paper consists of 5 printed pages. Please turn over. ⟹

**QUESTION ONE (30 MARKS)**

a) Distinguish between

i) Budget line and budget set **(4 Marks)**

ii) Price discriminating monopolist and multiplant monopolist **(4 marks)**

b) Given a production function

$Q = KL^2$

The price of K is sh. 10 and the price of L is sh 15. What combination of K and L minimizes cost of producing output? **(10 Marks)**

c) Using indifference curve analysis, show the substitution and income effects for a normal good in case of a price decrease. **(8 marks)**

**d)** Explain any four factors which give rise to monopoly power. **(4 marks)**

**QUESTION TWO (20 MARKS)**

a) Given the Cobb-Douglas production function;

$Q = AK^a L^b$

Where: A, a and b = Constants

Q = Output

K = Capital

L = Labour.

Identify and explain the returns to scale exhibited by the above production function in each of the following cases,

(i) a + b = 1 **(3 marks)**

(ii) a + b >1. **(3 marks)**

(iii) a + b <1. **(3 marks)**

**b)** Given the following production function:

$Q = 100k^{0.5} L^{0.5}$

Where C = shs.1200, w = 30 and r= 40

Required:

i) Determine the quantity of labour and capital that the firm should use in order to maximize output. **(9 marks)**

**ii)** Determine the maximum output **(2 marks)**

**QUESTION THREE (20 MARKS)**

a) If a monopolist has two plants, Plant 1 is located in province A and Plant 2 in province B.

The cost function for Plant 1 is $C_1 = 20q_1^2 + 0.4q_1$

The cost function for Plant 2 is $C_2 = 10q_2^2 + 0.5q_2$

The monopolist's demand curve is P = 100 – 0.2Q

Where, $q_1$and $q_2$ are levels of output produced in Plant 1 and 2 respectively.

Find the following:

(i) The profit-maximizing output levels for the two plants. **(9marks)**

(ii) The resulting total profits of the monopolists **(3 marks)**

b) Explain the properties of a perfectly competitive market **(8 marks)**

**QUESTION FOUR (20 MARKS)**

a) Given the utility function $U=X_1^{0.4}X_2^{0.6}$ , derive the cosumers demand functions **(10 marks)**

b) With the aid of an edgeworth box, show how general equilibrium is achieved **(6 marks)**

c) Given the production function, $Q=KL-0.8K^2-0.2L^2$, show the returns to scale exhibited by the function **(4 marks)**