KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR
SECOND YEAR, FIRST SEMESTER EXAMINATION
FOR THE DEGREE OF BACHELOR OF SCIENCE
(BUSINESS ADMINISTRATION)

Date: 14th April, 2022
Time: 8.30am –10.30am

KFI 201 - INTERMEDIATE MICRO ECONOMIC THEORY

INSTRUCTIONS TO CANDIDATES

ANSWER **QUESTION ONE (COMPULSORY)** AND **ANY OTHER TWO** QUESTIONS

QUESTION ONE (30 MARKS)

a) Differentiate the following terms as used in microeconomics using equation or diagrams where necessary;

    i)   Budget set and budget line   (2 marks)

    ii)   Increasing returns to scale and decreasing returns to scale   (2 marks)

    iii)   Marginal product and marginal utility   (2 marks)

    iv)   Necessary and sufficient conditions   (2 marks)

    v)   Perfect substitute and imperfect substitute goods   (2 marks)

b) Illustrate consumers' utility maximization point.

    (5 marks)

c) A firm has a production function of Cobb-Douglas form as $Q = 50K^{\frac{2}{5}}L^{\frac{8}{5}}$. If the prices of labour and capital use in the production are Kshs. 4 and Kshs. 8 respectively and the company has Kshs. 400 to spend on inputs. Set up the constrained output optimizing problem and solve for the optimal input needed.   (8 marks)

d) Given that consumer A has utility function $U_A(X,Y) = 4(X^2Y^3)$ while consumer B is $U_B(X,Y) = 2(X^4Y^6)$. Show that the two consumers have the same preferences.

    (7 marks)

QUESTION TWO (20 MARKS)

a) Illustrate and explain a firms' short-run profit maximization problem of a firm.

    (7 marks)

b) Define the term marginal rate of substitution and discuss its behavoiur

    (8 marks)

c) Show that the consumer maximizes utility at the point where $\dfrac{MU_1}{MU_2} = \dfrac{P_1}{P_2}$

QUESTION THREE (20 MARKS)

a) A firm produces and sells a product in Nairobi and Kisumu. The market demand function in Nairobi is $Q_1 = 6,000 - 10P_1$ and $Q_2 = 10,000 - 50P_2$ in Kisumu. Q_1 and Q_2 are quantities sold in the two markets at P_1 and P_2 respectively. Given that the firm's total cost (TC) function is TC= 0.6Q+500,000 and Q=Q_1+Q_2.

    i)   Determine the quantities and prices that maximizes firm's profit.

           (10 marks)

    ii)   Work out the maximum profit of the firm

           (2 marks)

b) Define price discrimination and discuss conditions necessary for price discrimination to occur

           (8 marks)

QUESTION FOUR (20 MARKS)

a) Highlight assumptions about preferences.   .

           (3 marks)

b) Assume a consumer has a utility function of the form, $U(X,Y) = X^3 Y^5$. Given that the price of X=Kshs. 5 and that of Y= kshs. 8, while the consumer level of income is M=Kshs.200. Determine the amount of X and Y the consumer buys.

           (7 marks)

c) Differentiate between perfect competitive and monopoly market structures.

           (10 marks)

QUESTION FIVE (20 MARKS)

a) Derive the relationship between marginal revenue and the price elasticity of demand for profit maximizing monopolist.   (9 marks)

b) Illustrate and discuss why as the consumer move to indifference curves away from the origin, the consumer gets more utility.   (4 marks)

c) Define returns to scale and discuss types of returns to scale of the firm.

           (7 marks)