KABARAK UNIVERSITY

UNIVERSITY EXAMINATIONS

2009/2010 ACADEMIC YEAR

FOR THE DEGREE OF BACHELOR OF COMMERCE

COURSE CODE: ECON 210

COURSE TITLE: INTERMEDIATE MICROECONOMICS

STREAM: Y2S1

DAY: FRIDAY

TIME: 3.00 – 5.00 P.M.

DATE: 06/08/2010

INSTRUCTIONS:

Answers question **ONE** and any other **TWO** questions.

PLEASE TURNOVER

1. (a) Explain why consumer indifference curves:

i. Do not intersect **(2mks)**

ii. Have negative slope **(2mks)**

iii. Are convex to the origin. **(2mks)**

(b) You are given the following production function.

$Q = L^{0.75} K^{0.25}$

Required.

i. Find the marginal product of labour **(1mk)**

ii. If the fixed quantity of capital in the short –run equals 10,000 units, what is the short –run production function? **(3mks)**

iii. Show that marginal product of labour (MPL) is less than average product o labour in the short –run production function in (ii) above. **(3mks)**

(c) Consider a profit maximizing firm operating under conditions of perfect competition Suppose the market price is sh.50 and the firm faces a total cost function given by:

$TC = 10 + 5Q^2$

Required:

Determine the level of quantity that maximizes profits. **(5mks)**

(d) "Substitution effect is the increase in quantity demanded resulting from a decrease in relative price after compensating the consumer for the change in real income" using an appropriate diagram explain this statement. **(6mks)**

(e) The demand for a commodity is given by:

$Q = 20{,}000 - 60p$

Required:

i. Compute the point price elasticity of demand at price of sh. 200 **(1mk)**

ii. If the objective is to increase total revenue from the sales of the commodity, should the price be increased or reduced? Explain. **(3mks)**

(f) Identify the reasons why the marginal rate of substitution diminishes. **(2mks)**

2. a) There are two commodities x_1 and x_2 on which a consumer spends his entire income in a day. He has utility function $u = \sqrt{x_1 x_2}$. Find out the optimal quantities of x_1 and x_2 if prices of x_1 and x_2 are sh. 5 and sh.2 respectively and his daily income equals sh.500 (Use the langrangean method) **(10mks)**

b) A firm producing hockey sticks has a production function given by $Q = 2\sqrt{KL}$. In the short run, the firm's amount of capital equipment is fixed at K =100. The rental rate for K is Sh.1 and the wage rate is Sh.4

i. Calculate the firm's short run total and average costs. **(4mks)**

ii. What are the firms short run total cost, short run average cost and short run marginal cost for producing 25 sticks. **(6mks)**

3. i) Explain the general properties of isoquants. **(3mks)**

ii) Show that in cobb-Douglas production the elasticity of factors substitutions is always equal to unity. **(6mks)**

b) Given the following production function:

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

Where C = Shs.1, 200, W = 30 and r = 40

Required:

i. Determine the quantity of labour and capital that the firm should use in order to maximize output. **(5mks)**

ii. Determine the maximum output. **(3mks)**

(c) What do you understand by the term marginal rate of technical substitution between labour and capital. **(3mks)**

4. a) Capital labour- ratio has been increasing in the Kenyan manufacturing industry over time. What possible explanation can you offer for this increase in capital intensity? **(8mks)**

b) Explain the following concepts:

i. Constant returns to scale **(4mks)**

ii. Increasing returns to scale **(4mks)**

iii. Decreasing returns to scale. **(4mks)**

5. a) Explain and illustrate the conditions under which a firm under perfect competition may continue in production while making losses. **(6mks)**

b) Consider a monopolist who faces the following demand function:

$P = 140 - 2Q$

Suppose that the monopolists total cost function is given by:

$TC = 10 + 5Q^2$

Required:

(i) Determine the price that the firm should charge to maximize profits in case of :

a) A profit maximizing firm **(2mks)**

b) A sales revenue maximizing firm. **(2mks)**

(ii) Determine the profits in each case in (i) above **(2mks)**

(iii) Determine the level of price that the firm should charge if its objective is to maximize sales revenue subject to making a profit of at least sh.20. **(3mks)**

(c) Identify the conditions under which price discrimination is possible. **(5mks)**