University of Swaziland

Faculty of Social Science

Department of Economics

Supplementary Examination Paper, July 2014

Title of paper   :   Intermediate microeconomic Theory

Course Code   :   Econ 302

Time allowed   :   Three (3) hours

Instructions   :   1. Answer Three (3) questions.

Question One (1) is compulsory, choose any two from the remaining four questions provided.

2. Question one (1) carries fifty (50) marks and the remaining questions carry equal marks of twenty five (25) each.

Do not open this paper until the invigilator has granted permission.

Question 1

a) Write short explanatory notes on the following:

    a. Rationality of consumers

    b. Properties of an indirect utility function

    c. Weak vs. Strong Axiom

    d. Marginal Rate of Technical Substitution

    e. Accounting vs. economic costs   (5 Marks each)

b) Suppose the industrial demand for water is:

$$Q_i = 1200 - 10p_i$$

And household demand for water is:

$$Q_n = 800 - 10\, p_n$$

Given that total costs are:

$$TC = 50q + 10{,}000$$

Derive the prices, quantities, Marginal Revenues and profits in these two markets.

(25 marks)

Question 2

a) What do you understand by the term 'Elasticity of Substitution'?

(7 marks)

b) Outline the four properties of the cobb-douglas function.   (8 Marks)

c) Given the following functions:

$$C = wL + rK \text{ and } Q = f(L, K)$$

Prove mathematically that the least cost input combination is attained where the isocost line and isoquant are tangent to each other.   (10 marks)

Question 3

a) What do you understand by the term 'Walrasian Equilibrium'?.

(7 marks)

b) Using edgeworth box analysis explain how general equilibrium is attained in a pure exchange economy consisting of two consumers (A and B) and two commodities (1 and 2).

Show and explicitly explain that a point such as M in the centre of the region of improvement is a pareto efficient allocation. (18 marks)

Question 4

a) Outline the two (2) cournot assumptions. (7 Marks)

b) Suppose that a market demand function is given by:

$$q = 150 - 15\,p$$

Also given a long-run marginal cost that is constant at E3

Find the profit-maximising output and price for a monopolist.

(18 Marks)