MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2015/2016

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF ARTS IN ECONOMICS WITH INFORMATION TECHNOLOGY

CITY CAMPUS - DAY

AEC 301: ADVANCE MICROECONOMICS

Date: 7th December, 2015 Time: 9.00 - 11.00am

INSTRUCTIONS:

- Answer Question ONE and any other TWO Questions
- Question ONE carries 30 marks and the rest 20 marks each.

1). Suppose the utility function of a rational consumer is specified as $U = f(x,y)=k$, the consumer's fixed income $= m^o$ and that $mu_x = p_x$, $mu_y = p_y$

Where: k = a constant, p_x = unit price of x and p_y = unit price of y

If "y" represents all other goods (AOG) whose unit price = 1 dollar,

(a).(i). Basing your arguments on utility optimization conditions outlined by the ordinalists, determine the demand function for good x. (6marks)

1). Suppose the utility function of a rational consumer is specified as $U = f(x,y) = k$, the consumer's fixed income $= m^o$ and that $mu_x = p_x$, $mu_y = p_y$

Where: k = a constant, p_x = unit price of x and p_y = unit price of y

If "y" represents all other goods (AOG) whose unit price = 1 dollar,

(a).(i). Basing your arguments on utility optimization conditions outlined by the ordinalists, determine the demand function for good x. (6marks)

(ii). Does the demand for good x conform to the law of demand? Give reasons for your answer. (4marks)

(iii). State the total differential equation for the consumer's utility function. (4marks)

(b). Assuming that a firm's fixed cost of production is given as α_0 and the variable cost is $\alpha_1 Q$, assuming further that the firm's total revenue is $(R) = PQ$, where: $R = \varphi(P,Q)$

(i). Determine the output level at breakeven point. (5marks)

(ii). If the firm manager is considering introducing a new product and he has estimated that it will cost Ksh 100,000 per year in fixed costs to maintain the plant. Workers wages plus suppliers of raw materials will cost Ksh 100 per output per year. If the firm charges Ksh 300 per output per year, what quantity of the product should the firm produce in order to breakeven? (5 marks)

(c). Prices of labour and capital are given as 3USD and 4 USD respectively. If the production function is specified as $Q = f(K,L) = \sqrt{L}\sqrt{k}$, and fixed cost in the production = 80USD. Determine the maximum level of output that can be produced with 150 USD. (6marks)

2. (a). A competitive industry faces a demand expressed as: $x = 800 - 8p$ and each firm in the competitive industry faces identical cost conditions specified as: $c_i = 200 + 10x_i + 2x_i^2$, where x_i is the output of the firm and c_i its cost. There is free entry and unlimited number of potential entrants. What is the equilibrium out put and price. (8marks)

(b). Explain why a firm under perfect competition is described as a price taker, and deduce its equilibrium conditions in the short-run. (6marks)

(c). If there is free entry and free exit, show that a firm in a perfectly competitive set-up would be in equilibrium in the long run when $P = AC$, not $P = MC$ (6marks)

(2marks)

(iv). What recommendation would you give to decision makers following the results in (4bii)? (2marks)

5. (a). Basing your arguments on Eugene Slutsky's approach to decomposition of the price effect, show that a consumer's welfare will improve even if his/her nominal income reduces so long as there is a fall in the price of the good being consumed. (15marks)

(b). What plausible assumptions should be considered in addressing question (5 a) above. (5marks)