



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
COMMERCE, ECONOMICS AND FINANCE

EET 200: MICROECONOMIC THEORY II

DATE: Thursday, 11th May 2017

TIME: 2.00p.m-4.00p.m

INSTRUCTIONS

Answer question ONE and ANY other Two Questions

Q1 Compulsory

- (a) Find the cost function for a firm whose production function is given as

$$F(L, K) = L^{0.5} K^{0.5}$$

(8marks)

- (b) A single firm operating as a monopolist has a cost function that takes the following form:

$$C(y) = 2y$$

If the firm faces an aggregate market demand curve given as

$$D(p) = 200 - 2p$$

Find the firm's optimal price and output.

(7marks)

- (c) Distinguish between each of the following pairs of microeconomic theory concepts

- (i) Income Expansion Path and Engel Curve (5marks)
- (ii) Homothetic preferences and constant returns to scale (5marks)
- (iii) Pareto set and Pareto efficient allocation (5marks)

Q2. A consumer's utility function is given as

$$\mu(x_1, x_2) = \sqrt{x_1 x_2}$$

- (i) Find the consumer's demand function for x_1 and x_2 (8marks)
- (ii) Suppose that the initial Price of x_2 is $p_2=10$, and the consumer's income is $M=400$: if the price of x_1 falls to $p_1^1=15$ while the price of x_2 remains constant;
 - (a) Find the total effect of the price fall on the demand for x_1 (4marks)
 - (b) Calculate the Slutsky substitution effect of the above price change (4marks)
 - (c) What is the income effect of the price change? (4marks)

Q3. The firms production function takes the following form:

$$y^2 = \sqrt{x_1 x_2}$$

- (i) Find the conditional and the unconditional factor demands (15marks)
- (ii) What returns to scale does the production function exhibit? show all your work (5marks)

Q4. In a perfectly competitive industry each firm has a long run marginal cost function given as

$$mc(y) = 40 + y^2 - 12y.$$

The corresponding long run average cost function is

$$LRAC(y) = \frac{1}{3} y^2 - 60y + 40$$

- (i) Find the long run equilibrium price in this industry. (12marks)
 - (ii) How much output would an individual firm produce at the equilibrium price? (4marks)
 - (iii) If the market demand function is given as $D(p) = 2200 - 100p$, what will be the equilibrium output supplied? (4marks)
- Q5. An economy has only two consumers whose utility functions are given below:

$$\mu_A(x_1, x_2) = x_1^{0.5} x_2^{0.5}$$

$$\mu_B(x_1, x_2) = 2x_1^{0.5} x_2^{0.5}$$

- (i) Graphically characterize equilibrium in this economy (8marks)
- (ii) Show that equilibrium in this economy will be obtained when the marginal rate of substitution for the two consumers is the same. (12marks)