



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF
ECONOMICS (ECONOMETRICS)

EET 802: ADVANCED MICROECONOMICS THEORY II

DATE: Wednesday, 27th March, 2019

TIME: 9.00a.m. - 12.00p.m

INSTRUCTIONS:

Answer **ALL** the **FOUR** questions.

1. All the firms operating in a perfectly competitive industry have the following cost function:
 $c(w, y) = y^2(w+r) + 2wy + r$ where y is each firm's output while w and r are the prices of labour and capital respectively.
 - a. Find the supply function for a representative firm in this industry.
 - b. Demonstrate that each firm operating in this industry will supply an output that will be greater than 1 unit.
2. Write short notes on each of the following:
 - a. Bernoulli's solution to the St. Petersburg paradox.
 - b. The Dupuit triangle as a true measure of surplus.
 - c. Market power as one of the causes of market failure.
 - d. The effects of price elasticity of demand on the profit maximizing monopolist's make-up.
3. A consumer's utility function is given as
 $U(x_1, y) = (xy)^{0.5}$ where x and y are two commodities consumed.
Assume $p_y = \text{sh}8$ and the initial utility level $U^0 = 100$
 - a. Find the Equivalent variation (EV), the compensating variation (CV) and the change in consumer surplus (ΔCS) when the price of X falls from sh.16 to sh.10.
 - b. Show that for the price change given in part (a) above, $EV > \Delta CS > CV$.

- 4a. Agnes and Beatrice are small scale traders in Nairobi. Both of them are risk averse and therefore have concave utility of wealth functions given below.

$$U_A(w) = W^{0.5}$$

$$U_B(W) = \ln W$$

Both traders are considering investing in a risky project which has 200,000 shares that are being sold at sh.5 each. If Beatrice decides to buy 40,000 shares, what if anything, can be said about Agnes's investment in the project?

- b. A monopolist who is able to price discriminate faces the following two demand functions

$$2q_1 = 64 - 0.8P_1$$

$$4q_2 = 72 - 0.4P_2$$

If the monopolists cost function is given as

$$C(q) = 50 + 40q,$$

Find the optimal price and quantity in each market. what is the relationship between the price charged and the price elasticity of demand in each market?