

CHUKA



UNIVERSITY

UNIVERSITY SUPPLEMENTARY/SPECIAL EXAMINATIONS.

THIRD YEAR EXAMINATION FOR THE AWARD OF BACHELOR OF SCIENCE IN
ECONOMICS AND SOCIOLOGY

ECON 313: ADVANCED MICROECONOMICS

STREAMS:

TIME: 2 HOURS

DAY/DATE: MONDAY 23/07/2018

8.30 A.M - 10.30 A.M

INSTRUCTIONS:

- Answer **Question ONE** and other **TWO Questions**
- Do not write anything on the Question paper.

QUESTION ONE (COMPULSORY)

- (a) Distinguish between the following terms;
- (i) Production function and output supply function.
 - (ii) Bertrand and cournot model. [4 Marks]
- (b) Explain the properties of a profit function. [10 Marks]
- (c) The convexity condition of indifference curve ensures a unique solution (interior solution) for the consumer. However, there exists some special cases where interior solution is not possible. Describe these cases. [6 Marks]
- (d) Prove that the marginal cost curve of a perfect competitive firm cuts the average cost curve from below at its minimum point. [5 Marks]
- (e) Using a linear Production Function of your choice, calculate the elasticity of substitution of a linear production function. [5 Marks]

QUESTION TWO

- (f) Consider a market with three oligopoly firms. Suppose that the market demand curve is given by $P=100-Q$, where $Q=q_1+q_2+q_3$. Supposed there is a constant marginal cost of 5. Suppose these firms choose quantities as follows; first firm 1 chooses q^1 . Then firms 2 and 3

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observe q^1 and then simultaneously choose q^2 and q^3 respectively. Calculate the equilibrium quantities, price and profits. [10 Marks]

(g) With the aid of diagram, explain how pareto efficient allocation is achieved in a trade between two individuals and two goods. [10 Marks]

QUESTION THREE

Consider the following direct utility function

$$U = x_1^{1/2} x_2^{1/2}$$

Where P_1 and P_2 are the prices of the two goods X_1 and X_2 respectively and M is the consumer income. Calculate the uncompensated demand functions and compensated demand function. test whether they are legitimate. [20 Marks]

QUESTION FOUR

(a) You are given the following information for a certain firm $Q = L^\alpha K^{1-\alpha}$.

Required:

(i) Calculate the units of labour (L) and capital (K) that minimizes cost.

(ii) Calculate the minimum cost.

[10 Marks]

(b) State, derive and explain the lerner index of market power.

[10 Marks]

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