CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

RESIT/SPECIAL EXAMINATION

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF

ECON 313: ADVANCED MICROECONOMICS THEORY

STREAMS: **TIME: 2 HOURS**

DAY/DATE: TUESDAY 02/02/2021   **11.30 A.M – 1.30 P.M.**

INSTRUCTIONS
- **Answer question One and any other Two questions**

QUESTION ONE

1) Prove the following claims mathematically.
   i.   Marginal Cost (MC) curve cuts the Average Cost (AC) curve from below and at its minimal point   [4 points]
   ii.   The oligopolistic joint output is higher than the monopolistic output but lower than competitive output.   [6 marks]
2) Consider the following expenditure function

   Where P_1 and P_2 are the prices of the two goods X_1 and X_2 respectively and U is the consumer utility.
   i) Compute the Hicksian demand functions   [5marks]
   ii) Calculate the Marshallian demand functions   [5marks]
   iii) Derive the indirect utility function   [5marks]
   b. Explain any Five (5) properties of profit function   [5mark]

QUESTION TWO

1. If a firm's cost function is. Where w_1 and w_2 are the prices of the two inputs X_1 and X_2 respectively

   i.   What is the associated production function?   [8 marks]

   ii.   A true production function is said to be concave and homogeneous of degree one in input prices. Is the production function derived in (a) above legitimate? Show your working   [6 marks]

   b. Explain six (6) properties of cost function   [6 marks]

QUESTION THREE

a) Write short notes according to how you understand the following terms   [10 Marks]
   i.   Roy's identity
   ii.   Slusky's compensation
   iii.   Hotelling's Lemma
   iv.   Cournot model
   v.   Bertrand model

b) 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]

QUESTION FOUR

a) Consider a market with three oligopoly firms. Suppose that the market demand curve is given by, where . Supposed that the marginal cost for each firm is C. Suppose these firms choose quantities as follows; first firm 1 chooses q^1. Then firms 2 and 3 observe q1 and then simultaneously choose q^2 and q^3 respectively. Calculate the equilibrium quantities, price and profits.   [10 marks]

b) With aid of a well labeled diagrams show how the exchange between two individuals can result in pareto efficient allocation   [10 marks]