**PAN AFRICAN CHRISTIAN UNIVERSITY (PAC)**

**EXAMINATION 2020/2021**

**DEGREE IN BACHELOR OF COMMERCE**

**BCM 206 INTERMEDIATE MICROECONOMICS - ROYSAMBU EVENING**

**DATE: AUGUST 2021** **TIME: 2 HOURS**

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**SECTION A: COMPULSORY**

**QUESTION ONE (30mks)**

a) Define the following terms
   i. Economics (1mks)
   ii. Elasticity (1mks)
   iii. Isoquants (1mks)

b) Derive equilibrium demand price, PD where there is taxation with linear demand and supply (2mks)

c) Suppose that you are given a monopolist firm' s demand function operating as Q = 200 - 20P and firm' s costs are given by TC = $0.05Q^2 + 1000$. Required:
   a. Calculate Q and P at the profit maximizing level (4mks)
   b. Show that this is the true maximum profit by using the 2nd order condition (1mks)

**QUESTION TWO (10mks)**

a) Distinguish between
   i. a normal good (1mks)
   ii. inferior good (1mks)
   iii. giffen good (1mks)

b) Given the utility function U(X,Y) = $X^{0.5}$ $Y^{0.5}$, where the price of good X = 1 and the price of good Y = 0.25 and income = 2. 1.
   i. Form the Lagrangian expression for the individual's utility maximizing problem (2mks)
   ii. Solve for the optimal value of X and Y which would yield maximum utility for the individual (5mks)

**QUESTION THREE (10mks)**

a) Discuss FIVE types of markets in economics (5mks)

b) Explain the assumptions of a perfectly competitive market (5mks)

**QUESTION FOUR (10mks)**

a) TC = $1/5X^2 + 6X+100$, where X represents 100 bales of clothes
   i. Find the average cost functions (1mks)
   ii. Find marginal cost functions (2mks)
   iii. Determine the value of X for which the AC is at minimum (2mks)

b) Highlight FIVE types of cost in economics (5mks)

**QUESTION FIVE (10mks)**

a) Discuss law of diminishing returns using an example (3mks)

b) A wheat farmer with a given area of land (say 1 acre) and a given quantity of capital equipment, assuming that neither land nor the capital can be varied in the short-run (they are both fixed factors). Assume further that the state of technology is constant and that labour (variable factor) is homogeneous, that is to say, each worker is exactly like the other worker.

Required

Consider the following table below and complete it (7mks)

| **Number of Workers (L)** | **Total Product** | **Average Product L** | **Marginal Product L** |
|---|---|---|---|
| 1 | 4 | | |
| 2 | 14 | | |
| 3 | 25.5 | | |
| 4 | 40 | | |
| 5 | 60 | | |
| 6 | 72 | | |
| 7 | 77 | | |
| 8 | 80 | | |
| 9 | 81 | | |
| 10 | 75 | | |

**QUESTION SIX**

a) Explain TWO major welfare criterias (2mks)

b) The field of welfare economics is associated with TWO fundamental theorems. Discuss (4mks)

c) Explain the cardinal and ordinal utility approaches to welfare economics (4mks)