



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

**UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR**

SECOND YEAR, FIRST SEMESTER EXAMINATIONS

**FOR
SME, SAVET AND BAC**

COURSE CODE: ECO 201

COURSE TITLE: INTERMEDIATE MICROECONOMICS

DATE: THURSDAY, 14-12-2023

TIME: 12:00 -14:00

INSTRUCTIONS TO CANDIDATES

ATTEMPT QUESTION ONE AND ANY OTHER TWO

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over

QUESTION ONE: COMPULSORY

- (a). Examine the properties of a Cobb-Douglas production function (4 marks)
- (b). Explain the stages of the law of variable proportions under the theory of production (5 marks)
- (c). Describe the features of a perfect competitive market structure (3 marks)
- (d). The demand function equation faced by HP for its personal computers is given by
 $P = 50,000 - 4Q$
- (i). At what price and quantity marginal revenue will be zero? (3 marks)
- (ii). At what price and quantity total revenue will be maximized? (3 marks)
- (e). Describe the properties of the Marshallian demand functions in the consumer theory (4 marks)
- (f). Explain using illustration the producer surplus of price determination perfect competitive market structure (4 marks)
- (g). A Kenyan monopoly firm sells its product in the Kenyan and the US market.

the Kenyan demand function for the product is:

$$P_1 = 100 - Q_i$$

and the US demand function for the product is:

$$P_0 = 80 - 2Q_u$$

Where both prices are measured in shs. The firm's marginal cost of product is sh.20 in both countries.

if the Kenyan monopoly firm can prevent any resale, what price will it charge in both markets?

(4 marks)

QUESTION TWO

- (a) Describe the situations that will make price discrimination possible (3 marks)
- (b) A monopolist has the following total cost function

$$TC = 10 + 5Q$$

- (i). If the price elasticity of demand for his products is -2, find out price he will fix for his product (2 marks)
- (i). If the price elasticity of demand for his product changes to -4, how will he change his price? (2 marks)

(b). In a constant cost industry having zero costs, the inverse demand functions is given by $P=12-Q$.

estimate the equilibrium value of the price and output for monopoly, Cournot duopoly and perfect competition. (6 marks)

(c). Explain using illustration how the price discrimination reduces social welfare by causing maldistribution of goods between the individuals. (7 marks)

QUESTION THREE

(a). Describe the limitations of the kinked demand curve theory (3 marks)

(b). Using illustration explain the following in price leadership under oligopoly pricing and output.

(i). Price -output determination under low-cost price leadership (5 marks)

(ii). Price leadership by the dominant firm (5 marks)

(c). Let the market for telecommunications equipment be represented by a duopoly, where the two firms produce q_1 and q_2 respectively. The inverse market demand function is represented by

$$P=100-2Q \text{ (where } Q=q_1 +q_2\text{)}$$

the marginal cost that each firm faces is 4:

(i). What are the reaction functions of the Cournot duopolist? (3 marks)

(ii). Calculate each firms output and the market price at Cournot equilibrium. (4 marks)

QUESTION FOUR

(a). Using illustration explain the following inline with the general equilibrium analysis and exchange:

(i). General equilibrium of production (8 marks)

(ii). General equilibrium of production and exchange in case of consumption (8 marks)

(b). Examine the expansion path of a linear homogeneous production function with reference to capital and labour. (4 marks)

QUESTION FIVE

(a). Using illustration explain the long run profit maximization equilibrium of a monopoly market structure (6 marks)

(b). Suppose the following demand and total cost functions of a monopolist are given (demand function)

$$Q=360-20P$$

$$TC=6Q+0.05Q^2 \text{ (cost function)}$$

Required

(i). Determine equilibrium output of the monopolist. (3 marks)

(ii). What price will be charged in this equilibrium solution? (3 marks)

(c). A firm producing hockey sticks has a production function given by $Q = 2\sqrt{KL}$

in the short run, the firm's amount of capital equipment is fixed at $K=100$. The rental rate for K is Re.1. and wage rate is sh.4

(i). Calculate firm's short run total and average costs (4 marks)

(ii). What are STC, SAC and SMC for producing 25 sticks. (4 marks)