



MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

APRIL SESSION EXAMINATION FOR

BACHELOR OF EDUCATION

EET 200: MICROECONOMIC THEORY II

DATE: 22/7/2021

TIME: 11.00-1.00 PM

INSTRUCTIONS:

- (i) Answer question one (COMPULSORY) and any other two questions
- (ii) Do not write on the question paper
- (iii) Show your workings clearly

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Distinguish between the following pairs of terms as used in microeconomics (8 marks)
 - i. Isoquants and Indifference curves
 - ii. Hicksian and Slutsky's substitution effects
 - iii. Pareto Optimality and Pareto efficiency
 - iv. Derived and Conditional input demand functions
- b) Using a well labeled diagram compare the inefficiency of a monopolist in relation to efficiency in perfect competition (6 marks)
- c) Given the following utility function: $U = X_1 X_2$
Decompose the total effect of a price change when the price of good one reduces by 20 percent from 30 shillings. The income of the consumer is 5000shillings per month while the price of good two is 40 shillings. (10 marks)
- d) With the help of a well labeled diagram explain the concept of "pareto optimality" in consumption (6 marks)

QUESTION TWO (20 MARKS)

- a) Differentiate between marginal rate of substitution and marginal rate of technical substitution (4 marks)
- b) A firm has the following production function $Y = X_1^{0.33}X_2^{0.67}$ obtain the corresponding conditional factor demand functions. (10 marks)
- c) Using relevant examples, explain three types of indifference curves (6 marks)

QUESTION THREE (20 MARKS)

- a) Show the various states of consumer equilibrium with perfect substitutes goods giving an account of different prices, that is $P_1 < P_2$, $P_1 > P_2$, $P_1 = P_2$, where P_1 and P_2 are prices of good X_1 and X_2 respectively. Explain and illustrate your answer as clearly as possible. (10 marks)
- b) Derive the relationship between marginal revenue and price elasticity of demand and explain its significance to the monopolist's pricing decisions (10 marks)

QUESTION FOUR (20 MARKS)

- a) Define the term marginal rate of substitution and explain its behavior for different preferences (8 marks)
- b) Prove that a consumer maximizes utility when $\frac{MU_1}{MU_2} = \frac{P_1}{P_2}$ (6 marks)
- c) Using an illustration explain a firm's short-run profit maximization problem of a firm (6 marks)

QUESTION FIVE (20 MARKS)

- a) State three axioms of consumer preferences (3 marks)
- b) Given the following utility functions $U = 0.6X_1 + 0.4X_2$. Derive the demand functions for this consumer. (5 marks)
- c) A monopolist's demand function is given as $Q = 2000 - 10P$, where Q is the quantity is produced and sold and P is the price per unit in Ksh. If the firm's marginal cost is K.sh100:
- Calculate the monopolist's equilibrium quantity and price. (4 marks)
 - Suppose the monopolist behaves competitively, how would the answers in (i) above change? (4 marks)
- d) Using relevant diagrams, distinguish between an interior solution and a boundary solution (4 marks)