**MACHAKOS UNIVERSITY**
**UNIVERSITY EXAMINATIONS FOR 2022/2023**

**SCHOOL OF BUSINESS AND ECONOMICS**

**DEPARTMENT OF ECONOMICS**

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR**

**BACHELOR OF COMMERCE,**

**BACHELOR OF EDUCATION,**

**BACHELOR OF ECONOMICS,**

**BACHELOR OF ECONOMICS & STATISTICS**

**BACHELOR OF ECONOMICS AND FINANCE.**

**EET 200: MICROECONOMICS THEORY II**

DATE:                                                                                    TIME:

**INSTRUCTIONS**

Answer Question **ONE** and any other **TWO** questions

**QUESTION ONE (COMPULSORY)**                          **(30 MARKS)**

a)  State and explain whether the following statements are True or False.          **(5 Marks)**

   i.    A monopolistic firm maximizes profit when MC is equal to MRS.

   ii.   It makes technical sense for a producer to produce a stage two of production.

   iii.  Substitution effects and income effects for a giffen good are negative.

   iv.   If a monopolistic firm was making subnormal profits in the short run, it would make normal profits in the long run.

v.   Marshallian demand curve is derived on assumption that utility and price of the other good is constant.

b) Explain the four building blocks of consumer behavior theory.   **(8 Marks)**

c) Consider Renee's utility function and budget constraint $U(X_1 X_2) = X_1^3 X_2^3$ and $P_1 X_1 + P_2 X_2 = M$ respectively. Derive ordinary demand functions.   **(8 Marks)**

d) Distinguish between general axiom of revealed preferences and weak axiom of revealed preferences.   **(5 Marks)**

e) A producer has the following production function $Q = K^{0.6} L^{0.6}$. If he has a budget of The money available for purchase of factor inputs, C is Kshs 300 and price of K, $r = Kshs$ 10 and price of L, $w = Kshs$ 20. Determine the optimal quantities of commodity K and L.   **(4 Marks)**

## QUESTION TWO                                                  (20 MARKS)

a) A monopolist has the following demand functions for two segmented markets and cost function.

   $Q_1 = 64 - 0.8P_1$           $Q_2 = 36 - 0.2P_2$           $C = 100 + 80Q$

   Required;

   i.   Calculate the maximum output and price of each market and the optimal profit of the monopolist.   **(9 Marks)**

   ii.  Verify whether the output maximizes profit.   **(3 Marks)**

b) Consumer preferences are characterized axiomatically. Explain any four axioms of consumer preferences.   **(6 Marks)**

c) Suppose cost function is given as $c = a + a_1 Q + a_2 Q^3$. Prove that MC is equal to per unit change in TVC.   **(2 Marks)**

## QUESTION THREE                                                (20 MARKS)

a) The profit maximization problem of the firm is given as: $\max Pf(X_1 X_2) - W_1 X_1 - W_2 X_2$

   Suppose that Q= $(fX_1 X_2)$ is given as $X_1^\alpha X_2^\beta$. Derive the output supply function of the firm.   **(8 Marks)**

b) Explain any four features of indifference and their implications. **(8 Marks)**

c) Using relevant diagram explain efficiency in consumption. **(4 Marks)**

## QUESTION FOUR (20 MARKS)

a) What is economics of scale? Using any Cobb Douglas function discuss the rules of returns to scale. **(6 Marks)**

b) Using a well labeled diagram and relevant example, discuss income effect & substitution effect of a price decrease of an inferior good. **(8 Marks)**

c) Using relevant diagrams explain the shutdown rule and equilibrium in a perfectly competitive market. **(6 Marks)**

## QUESTION FIVE (20 MARKS)

a) One method of constrained profit maximization is minimization of cost given the output level. Suppose XYZ firm's production and cost functions are given as, $Q(X_1 X_2) = X_1^a X_2^b$ and $C = W_1 X_1 + W_2 X_2$ respectively. Derive the conditional factor demands for $X_1$ and $X_2$.

**(8 Marks)**

b) Define price discrimination. Using relevant diagrams explain the monopolist's degrees of price discrimination. **(8 Marks)**

c) Using relevant diagram discuss the stages of production? In which stage does the producer attain technical efficiency. **(4 Marks)**

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