



KENYATAA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

DIGITAL SCHOOL OF VIRTUAL AND OPEN LEARNING

**SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
ECONOMICS**

EET 200 : MICROECONOMIC THEORY

DATE: Monday 18th June 2018

TIME: 2.00p.m-4.00p.m

INSTRUCTIONS:

- 1) Question **ONE** is **Compulsory**
- 2) Answer any other **TWO** questions

QUESTION ONE

- a) Given a utility function $U=(X+2)(Y+1)$ and a budget constraint $P_xX+P_yY=M$ with $P_x>0$, $P_y>0$ and $M>0$
 - i. Find the optimal quantities of X, Y in terms of P_x, P_y and M (3 marks)
 - ii. Find λ in terms of P_x, P_y and M (3 marks)
 - iii. Find the total utility U at the optimal. Make sure you express utility in terms of P_x, P_y and M
 - iv. Check the second order condition to see if U is maximum or minimum.(1 mark)
- b) Distinguish between the following terms (using graphs where necessary)
 - i. Boundary optimum and interior optimum (4 marks)
 - ii. Equilibrium of perfect substitute and perfect compliments (4 marks)
 - iii. Hicks and slutscky substitution effect (4 marks)
- c) Suppose a production function of a firm is represented as $Y=X_1^a X_2^b$ and $C=W_1X_1 + W_2X_2$. Derive the conditional factor demands (8 marks)

QUESTION TWO

- a) If a customer has utility function $U = X_1^{0.8} X_2^{0.2}$. Find the consumers optimal choice for good one and two. (10 marks)
- b) Suppose that the consumer's income is KES2000 and p_1 changes from KES40 to KES20. Compute the substitution effect (SE) and income effect (IE) due to this price change. (10 marks)

QUESTION THREE

- a) Shows graphically and mathematically that in short run profit maximization, firm price of marginal product is equal to the input price (10 marks)
- b) With help of a well labeled diagram explain the concept of pareto optimality in production (6 marks)
- c) Explain three conditions necessary for implementation of price discrimination (4 marks)

QUESTION FOUR

- a) A firm produces and sells a product in both the domestic and foreign market. The market demand functions are given as $Q_1 = 1200 - 10P_1$ (domestic market) and $Q_2 = 800 - 10P_2$ (foreign market) where Q_1 and Q_2 are quantities sold in the respective markets at price P_1 and P_2 respectively. The firms total cost function is given by $TC = 0.05Q^2 + 10000$. Determine the quantities and prices that maximizes the firm's profits. (8 marks)
- b) What is the maximize profit for the firm? (4 marks)
- c) A firm has the following function $Y = X_1^{0.33} X_2^{0.67}$, obtain the conditional factor demands functions. (8 marks)

QUESTION FIVE

- a) With the use of appropriate economic tools derive the condition for pareto efficient allocation assuming two goods. (10 marks)
- b) Derive the relationship between marginal revenue and price elasticity of demand and explain its significance to the monopolists pricing decision. (6 marks)
- c) Given a monotonic production function of this form $Q(x,y) = \alpha L_x + \beta L_y$, calculate the marginal rate of technical substitution.