



MASEÑO UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR DI
OF BACHELOR OF ARTS IN ECONOMICS WITH
INFORMATION TECHNOLOGY**

MAIN CAMPUS

201: INTERMEDIATE MICROECONOMICS

Date: 5th December, 2016

Time: 8.30 - 11

INSTRUCTIONS:

- **Answer Question ONE and any other TWO.**

QUESTION ONE (Compulsory)

a) Given the Cobb-Douglas utility function $U(X, Y) = \sqrt{X \cdot Y}$, and the budget constraint $I = P_x X + P_y Y$. If $I=2$, $P_x=0.25$ and $P_y = 1.00$,

- i) Set up the utility maximization problem faced by the consumer. (2marks)
- ii) Find the value of the utility obtained by the consumer. (8 marks)
- iii) Compute the demand functions of X and Y (10 marks)

b).

- i) Clearly explain the assumptions about consumer preferences (axioms) that provide the minimum set of conditions for consistent and rational consumer behavior. (5marks)
- ii) Explain why a monotonic transformation of a utility function doesn't change the marginal rate of substitution. (5 marks)

QUESTION TWO

a) A discriminating monopolist has the following revenue and total cost functions:

$$R_1 = R_1(Q_1); R_2 = R_2(Q_2); C = C(Q) \text{ where } Q = Q_1 + Q_2$$

Determine the discriminating monopolist's optimal pricing policy (10marks)

b)

- i). Use an example to explain a numeraire. (2marks)
- ii). Using the axiom of transitivity, explain why an indifference curve cannot cross itself. (8 marks)

QUESTION THREE

a) Pareto efficient allocation makes each agent as well-off as possible, given the utility of the other agent. Given information below, and that \bar{u} is the utility level for agent B, how can we make agent A as well-off as possible. (10 marks)

Using
$$\max_{x_A^1, x_A^2, x_B^1, x_B^2} u_A(x_A^1, x_A^2)$$

Such that
$$u_B(x_B^1, x_B^2) = \bar{u}; \quad x_A^1 + x_B^1 = \omega^1; \quad x_A^2 + x_B^2 = \omega^2$$

b). If a firm is producing where $MP_1/w_1 > MP_2/w_2$, what can it do to reduce costs but maintain the same output? (10 marks)

QUESTION FOUR

a) What kind of a utility function of wealth might be consistent with an individual gambling and paying insurance at the same time? (10 marks)

b). You have a logarithmic utility function $U(W) = \ln W$, and your current level of wealth is KSh. 50,000.

Suppose you are exposed to a situation that results in a 50/50 chance of winning or losing KSh. 10,000. If you can buy insurance that completely removes the risk for a fee of KSh. 1,250, will you buy it or take the gamble? (10 marks)

QUESTION FIVE

a) A consumer, who is initially a lender, remains a lender even after a decline in interest rates. Is this consumer better off or worse off after the change in interest rates? (5marks)

b). If the above consumer becomes a borrower after the change is he better off or worse off? (5marks)

c). Given the following Cobb Douglas production function;

$$Q = AK^\alpha \quad \text{and} \quad Q = CL^\beta$$

Demonstrate that α , and β are the elasticity's of output with respect to capital and Labour respectively. (10marks)