

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS.

SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF COMMERCE

ECON 212: INTERMEDIATE MICROECONOMICS (ODEL)

STREAMS: ECON Y2S1

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 5/12/2018

8.30 A.M - 10.30 A.M

INSTRUCTIONS:

- Answer Question ONE and any other TWO Questions.
- Do not write anything on the question paper

QUESTION ONE

Given the following utility function and constraining function:

$$U = q_1 q_2 \text{ - utility function}$$

$$\text{s.t: } p_1 q_1 + p_2 q_2 = M$$

- Formulate the constrained optimization problem. [3 Marks]
- Compute ordinary marshallian demand function for q_1 and q_2 . [8 Marks]
- With reference to indirect consumption function, derive in (ii), what is consumer's expenditure function. [5 Marks]
- Obtain the consumers compensated demand function for q_1 and q_2 . [8 Marks]
- What are the properties of indirect utility function. [6 Marks]

QUESTION TWO

- Show that the slope of a budget line equals the ratio of prices of the two goods X and Y. [5 Marks]
- What is "numeraire"? Explain its significance. [5 Marks]

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- (iii) Given the budget constraint $P_x X + P_y Y = M$. Suppose the government imposes
- (a) Lump sum tax of Kshs.100
 - (b) A quantity tax of Kshs.5
 - (c) A subsidy of Kshs.4 per unit on Y

What is the new budget constraint? [10 Marks]

QUESTION THREE

Suppose the utility function of a person consuming two commodities X and Y with income Kshs.600 is given by the following utility function:

$$U = 2X^{0.6}Y^{0.4}$$

If the per unit price of X is Kshs.20 and per unit price of Y is Kshs.40

- (i) Calculate the utility maximizing level of consumption of X_1 and X_2 [10 Marks]
- (ii) Find the $MRS_{x,y}$ at the optimum. [4 Marks]

(iii) Briefly describe the following terms:

- (a) Budget constraint [3 Marks]
- (b) Budget set [3 Marks]

QUESTION FOUR

(i) Show with the help of a diagram that the substitution effect of a fall in price of a commodity will make a consumer either consume the same quantity or more but not less of it. [6 Marks]

(ii) State Slutsky equation algebraically and explain each term in it using this equation. [4 Marks]

(a) What must be the sign and magnitude of income effect of a downward sloping demand curve? [5 Marks]

(b) Show that Marshall's analysis cannot account for Giffen goods. [5 Marks]

QUESTION FIVE

(i) Draw the income consumption curves and Engel curves in case of: -

- (a) Cobb-Douglas preferences. [5 Marks]
- (b) Quasi-linear preferences. [5 Marks]

(ii) What kind of preferences are represented by the following utility functions, where X^1 and X^2 denote the amount of good 1 and good 2 respectively:

(a) $U(x_1, x_2) = X_1 + X_2$ [4 Marks]

(b) $U(x_1, x_2) = X_1 + X_2^2$

Derive the price offer curve and the demand curve for good 1 for these functions. [2 Marks]

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