# MAASAI MARA UNIVERSITY

## REGULAR UNIVERSITY EXAMINATIONS
## 2017/2018 ACADEMIC YEAR
## SECOND YEAR SECOND SEMESTER

## SCHOOL OF BUSINESS& ECONOMICS
## BACHELOR OF SCIENCEIN PROJECT PLANNING AND MANAGEMENT AND ENTREPRENEURSHIP

## COURSE CODE: ECO 2103
## COURSE TITLE: INTERMEDIATE MICROECONOMICS

DATE : 2ND MAY 2018                TIME: 1430 – 1630 HRS

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**INSTRUCTIONS TO CANDIDATES**

Answer Question ONE and any other THREE questions

**QUESTION ONE**

a) You are provided with the following production function $y = x^a$, where y is the output and x is the input: for what values of a is the production function a legitimate function?
**[8 Marks]**

b) What is demand? Explain one reason why the demand curve of a normal good is downward sloping **[6 Marks]**

c) Explain any three determinants of supply of a good? **[3 Marks]**

e) Explain the axioms of a rational consumer who seeks to maximize utility?
**[8 Marks]**

**QUESTION TWO**

Lady's preferences for biscuits and bones can be summarised using the following utility function $U(x,y) = x^{1/4}y^{3/4}$. You have an income of m, and the goods, biscuits (x) and bones (y), have respective prices of Ksh2 & Ksh10 per unit.

a) Use the Lagrangian method to calculate the optimal consumption bundle of bones.
**[10 marks]**

b) If income is Ksh100, and $x^* = \frac{m}{3p_x}$ and $y^* = \frac{2m}{3p_y}$ what level of utility is associated with this bundle? **[3 marks]**

c) Are bones a normal good? Why? **[2 marks]**

**QUESTION THREE**

a) Provide a Hicks Decomposition of the total change in demand for an inferior good, when its price increases.

Be sure to explain the construction of the compensated budget line, define the income and substitution effects and relate them to your graph. **[10 marks]**

**b)** Identify examples of inferior and normal goods, and explain why you consider them to be of that nature? **[ 5 Marks]**

**QUESTION FOUR**
The total cost equation in the production of wheat is given as follows:
$TC = 100 + 10Q - 5Q^2 + Q^3$
Where TC is total cost measured in shillings, while Q is quantity measured in tons.

a) Compute the Total Cost (TC), Average Fixed Cost (AFC) and Average Variable Cost (AVC) at the output level of 10 tons? **[8 Marks]**

b) What is the marginal cost of the 11th ton of maize produced? **[4 Marks]**

c) State the law of diminishing returns? **[3 Marks]**

**QUESTION FIVE**
Suppose the market for college microeconomics texts can be described by the following two equations:

$P = 250 - Q$    (1)
$P = 10 + 3Q$    (2)

Where P is the price in shillings per unit, and Q is the quantity in thousands of units.

a) Identify the demand and supply function from the two equations above. Give reasons for your answer. **[2 Marks]**

b) What is the free market price and quantity in this market? Illustrate with a graph. **[5 Marks]**

c) Calculate the consumer surplus and producer surplus. **[4 Marks]**

d) Suppose the government imposes a Kshs 5 tax on suppliers. Calculate the new equilibrium price and quantity. Compare this with a similar tax levied on buyers? **[4 Marks]**

**END//**