KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2010/2011

INSTITUTE OF OPEN LEARNING (IOL)

EXAMINATION FOR THE DEGREE OF BACHELOR OF ARTS, BACHELOR OF ECONOMICS AND BACHELOR OF COMMERCE

EET 300: MACROECONOMICS THEORY III

DATE: Friday, 4th February, 2011 TIME: 4.30 p.m. – 6.30 p.m.

INSTRUCTIONS:

Answer question **ONE** and any other **TWO** questions.

Question One

Kindly differentiate between the following set of economic terms using the appropriate economic methodologies where applicable as clearly as possible.

a) Marginal rate of technical substitution and elasticity of substitution

b) Marshallian demand functions and hicksian demand functions

c) Monotonicity and essentiality

d) Indirect utility function and the expenditure function

e) Conditional input demand functions and unconditional input demand functions

f) Hottellings lemma and shepherd lemma

(30 marks)

Question Two

A profit function is convex in input and output as long as the production function is strictly concave. Consider a firm's profit function below:

$\pi(p,w)=\frac{p^3}{w_1 w_2}$ where p is output price and w_1 and w_2 are the prices of two inputs x_1 *and* x_2 respectively. Would you say that the firm's production function is strictly concave? Show your working. If $p=sh.500,\ w_1 = w_2 = sh.100,$ determine the profit maximizing input demands and output. (20 marks)

Question Three

If the firm cost function is $C(W,Y)=5W_1^{2/3} W_2^{1/3} Y$ where W_i input prices and Y are is output.

a) Derive conditional input demand functions for both inputs. (6 marks)

b) What is the associated production function? (14 marks)

Question Four

Consider a firm's short run production function $Q=L^{0.25},$ let P be the price of output Q and W be the price of the input L.

Required

a) Is the above production function strictly concave? Show your workings (4 marks)

b) Derive the firm profit function (9 marks)

c) Is the profit function derived in part (b) above legitimate (7 marks)

Question Five

Given an individual utility function of the nature $U(X_1 X_2)=X_1^{3/4} X_2^{1/4}$

a) Derive the consumer's indirect utility functions. (6 marks)

b) Derive the consumer's expenditure function. (6 marks)

c) State and demonstrate the slutsky's equation. (7 marks)