MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR DEGREE OF BACHELOR OF ARTS IN ECONOMICS WITH INFORMATION TECHNOLOGY

MAIN & CITY CAMPUSES

AEC 301: ADVANCED MICROECONOMICS

Date: 2nd December, 2016 Time: 3.30 - 6.30pm

INSTRUCTIONS:

- Answer Question ONE and any other TWO

Q1. a) Discuss the properties of the following functions in utility theory.

i) **Indirect utility** [3Marks]

ii) **Expenditure function** [3 Marks]

b)Explain Roy's identity and explain the important identities in consumer theory. [4 Marks]

c) The Cobb-Douglas utility function is given by:

$$u(x_1x_2) = x_1^{1/4}x_2^{3/4}$$

i) Transform the utility function into a logarithmic model and set up a utility maximization problem given that the budget constraint is given as $p_1x_1 + p_2x_2 = m$[4 Marks]

ii) Solve for Marshallian demand functions.[6 Marks]

d) Describe the marginal rate of technical substitution using a Cobb Douglas technology. [6 Marks]

e) Explain the elasticity of substitution. [4 Marks]

Q2.a) Describe the properties of a profit function. [8 Marks]

b) Consider the cost function for the CES technology. Suppose that

$$f(x_1, x_2) = \left(x_1^p + x_2^p\right)^{1/p}$$

Derive the cost function given that cost minimization problem is given as follows:

$\min w_1x_1 + w_2x_2$ **such that** $x_1^p + x_2^p = y^p$ [12 Marks]

Q3. Differentiate between efficient public and private provision of discrete and continuous public good. [20 Marks]

Q4.a) Discuss efficiency conditions in the presence of externalities.

[10 Marks]

b) Explain the expected utility theory to a gaming company who wants to initiate a charity lottery. [10 Marks]

Q5. a)Discuss the concept of consumer surplus in the context of compensating and equivalent variations. [5 Marks]

b) i) Write out the Slutsky equation and determine its proof using the Hicksian demand function. [8 Marks]

ii) Using labour supply function characterise the Slutsky equation considering endowments in a budget constraint. [7 Marks]