MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

FIRST YEAR FIRST SEMESTER EXAMINATION FOR

MASTER OF SCIENCE IN AGRIBUSINESS MANAGEMENT

AGB 801: AGRICULTURAL MICRO-ECONOMICS

DATE: 28/6/2019 **TIME: 10:00 – 1:00 PM**

INSTRUCTIONS:

i) Answer question one (Compulsory) and any other two questions

ii) Do not write on the question paper

iii) Show your workings clearly

QUESTION ONE (20 MARKS)

a) Consider the following utility function and budget constraint

$U = X_1^2 X_2^2$

$M = P_1 X_1 + P_2 X_2$

Required;

i) Derive the Marshalian demand function for good 1 and 2 (6 marks)

ii) Derive the indirect utility function. (2 marks)

iii) Using Roy's identity obtain the demand functions in i. above. (4 marks)

b) Explain the characteristics of public goods (4 marks)

c) Differentiate between simultaneous and sequential game in imperfectly competitive markets (4 marks)

QUESTION TWO (20 MARKS)

a) Discuss the axioms of consumer preference. (8 marks)

b) House of Stark is a coal producing firm near fresh water lake Yale. The firm dumps its waste product into the water. The neighbouring residents depend on fishing activities as their livelihood. Based on this discuss the concept of externalities and public goods. (12 marks)

QUESTION THREE (20 MARKS)

a) Suppose a firm's production and cost function is given as

$Q = AK^{\alpha}L^{\beta}$ $C = rK + wL$

i) Derive the cost function of the firm. (10 marks)

ii) Using shepherd's Lemma derive the conditional factor demand functions. (4 marks)

b) Discuss the properties of the expenditure function. (6 marks)

QUESTION FOUR (20 MARKS)

a) Using relevant examples distinguish between strong and weak axioms of revealed preferences. (8 marks)

b) Consider the following demand function and cost functions of firm A and B in Naath market.

$Q = 200 - 2P$ $TC_A = 5Q_A$ $TC_B = 2.5Q_B^2$

Suppose firm A is the first mover, determine

i) The response functions for the two firms. (4 marks)

ii) The equilibrium output, price and profit of the two firms. (8 marks)

QUESTION FIVE (20 MARKS)

a) Asymmetric information arises where one party has access to more or better information than the other and chooses not to share it with others. Discuss the two problems that arise with information asymmetry in the markets. What are solutions to these problems? (10 marks)

b) Firms in a duopoly market intend to adopt an advertising strategy. It is assumed that the price is exogenous, market demand is fixed (Total quantity sold is the same regardless of the level of advertising). In addition, each firm chooses between two advertising levels: High (*H*) and Low (*L*). The game is presented as per the matrix below.

		Firm 2	
		H	L
Firm1	H	450,450	120,480
	L	480, 120	150,150

i) Show the strictly dominant and strictly dominated strategies for each firm. (4 marks)

ii) Define and derive Nash equilibrium of this game. (6 marks)