EASTERN UNIVERSITY, SRI LANKA
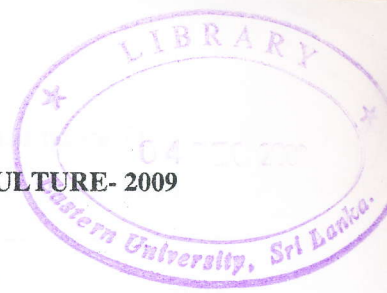## SECOND YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE- 2009
EXTERNAL DEGREE
AEC 2101: FARM MANAGEMENT ECONOMICS

Answer All questions

Time: 3 Hours

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1. a. Briefly explain the steps involved in farm planning.

   b. List the importance of keeping farm records.

   c. Compare the Agricultural economy with the Industrial economy.

2. a. Show graphically and explain the equilibrium in the case of the production with inputs.

   b. The following production function shows the relationship between two inputs (X_1 and X_2) with an output (Y).

$$Y = X_1 X_2 - 0.1 X_1^2 - 0.4 X_2^2$$

   Using the above calculate the following:

   (i) MPP_{X1}, MPP_{X2}, MRS_{X1X2} and MRS_{X2X1}

   (ii) If the input X_2 is fixed at 5 unit, the value for maximum of Y.

3. a. Briefly discuss the causes of depreciation.

   b. Assume that a new machine is purchased on January 1st for Rs.10,000/= and given a salvage value of Rs. 2000/= for 10 years of useful life.

   What would be the annual depreciation for the first 3 years under each depreciation method given below:-

   i.   Straight line method.

   ii. Sum- of-the year digit method.

   iii. Double declining balance method

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4. From an acre (01) grain enterprise farm the following information have been extracted:-

Item	Unit	Quantity	Price (Rs)/unit
Seed	kg	46	326.00
Machinery interest	acre	1	10,600.00
Chemicals	acre	1	7,500.00
Oil and fuel	acre	1	9,500.00
Machinery repairs	acre	1	6,400.00
Grain yield	kg	600	240.00
Fertilizer	kg	90	216.60
Land charge	acre	1	50,000.00
Labors	hr	2	800.00
Interest	Rs	369.50	10%
Machinery depreciation	acre	1	14,200.00
Machinery taxes & insurance	acre	1	2,500.00
Miscellaneous overhead	acre	1	4,000.00

a) You are required to find out the followings; Total Revenue, Gross Margin, Total Expenses and Profit

b) Prepare the crop enterprise budget.

c) Evaluate whether it is a profitable enterprise or not.

d) Interpret and analyze the Enterprise Budget.

5. a. What are the assumptions of Linear Programming?

b. A cattle feeder has provided the following data on capital availability and feed supply and wants to know if it is more profitable to feed calves, yearlings or some combination of two. Find out the most profitable combination of animals.

Item available	Calves	Yearlings	Total supply
Net return	Rs 20/=	Rs 18/=	-
Feed requirement	101kg	69kg	20, 000kg
Capital requirement	Rs 150/=	Rs250/=	Rs 50, 000/=
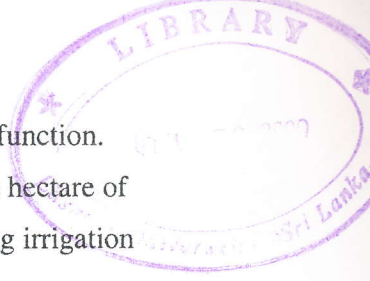
6. a. Graphically illustrate the Neo-classical three stages of production function.

   b. A farm manager has to decide the amount of water to apply to one hectare of maize. Fill the following table and determine the profit maximizing irrigation level for maize production.

   (Price of Water Rs 3.00 per ha- cm and Price of Maize Rs 2.50 per kg)

Irrigation water (ha- cm)	Maize yield per ha (kg)	Marginal Physical Product (MPP)	Marginal Value Product (MVP)	Marginal Input Cost (MIC)	Marginal Revenue (MR)	Marginal Cost (MC)
10	104.0					
12	116.8					
14	128.6					
16	138.2					
18	144.8					
20	149.0					
22	151.8					
24	153.6					
26	154.2					