EASTERN UNIVERSITY, SRI LANKA

SECOND YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE- 2011

AEC 2101: APPLIED FARM MANAGEMENT (PRACTICAL)

Answer All the questions **Time: 03 Hours**

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1. You are given the following information extracted from the records of the "Crop Farm" on 31.12.2009 on a grain enterprise.

Item	Unit	Quantity	Price (Rs)/unit
Seed	kg	45	326.00
Machinery interest	acre	5	10,600.00
Chemicals	acre	5	7,500.00
Oil and fuel	acre	5	9,500.00
Machinery repairs	acre	5	6,400.00
Grain yield	kg	1000	240.00
Fertilizer	kg	400	216.60
Land charge	acre	5	50,000.00
Labors	hr	10	800.00
Interest	Rs	369.50	10%
Machinery depreciation	acre	5	14,200.00
Machinery taxes & insurance	acre	5	2,500.00
Miscellaneous overhead	acre	5	4,000.00

a. You are required to find out the **Total Revenue, Total Expenses and Profit** and prepare the **Crop Enterprise Budget.**

b. Analyze and Interpret the **Enterprise Budget.**

2. a. How do you form expectations using "**Most-likely method**" and "**Averages**" ?

b. Find out the best estimate using the "**Most-likely method**".

Possible paddy yields (Bushel/ acre)	**Number of years actual yield was in this range**
0- 20	1
21- 40	2
41- 60	5
61- 80	6
81- 100	4
101- 120	2

c. Find out the expected value for price of cattle using simple and weighted ave methods.

Year	**Average annual price (Rs)**
4 Years ago	7,840.00
3 Years ago	9,270.00
2 Years ago	10,050.00
Last year	12,010.00

3. a. Classify the **FINANCIAL RECORDS** and explain them.

b. Prepare a typical **MONTHLY FEED RECORD**.

4. a. Graphically illustrate the neo-classical "**Three Stages of the Production function**".

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

(Water at Rs 3.00 per ha- cm and maize at 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					

5. a. Briefly describe the assumptions of Linear Programming?

b. A meat processing farm produces 2 products, called bacon and sausages. Production capacity of farm in terms of operation is 8 hours a day. Production process is as follows.

Bacon is first cut and packed. 1MT of bacon uses upto ½ hours of cutting and 1/3 hours of packaging capacity. Sausages is mixed and packed. 1MT of sausage uses 1hour of mixing. 2/3 hours of packaging capacity.

Assuming that:

Net returns for bacon is Rs. 400 per MT

Net returns for sausage is Rs. 300 per MT.

i. What is the **optimum level of production** for bacon and sausage per day?

ii. What is the **optimal profit level** subject to the constraints?

6. a. Explain the properties of an **Isoquant.**

b. There are two inputs X_1 **and** X_2 and one output **Y** as related by the production fun provided below.

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

i. If the input X_2 is fixed at 5, find the value of X_1 for maximum Y, and

ii. Find the level of X_1 when AP= 0

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