

EASTERN UNIVERSITY, SRI LANKA  
SECOND YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE- 2012  
AEC 2101: APPLIED FARM MANAGEMENT (PRACTICAL)  
REPEAT EXAMINATION



Answer All questions

Time: 3 Hours

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1. a. Define the term "Depreciation" and briefly discuss the causes of depreciation.  
  
b. Assume that a new machine is purchased on January 1<sup>st</sup> for Rs.200, 000 and given a salvage value of Rs. 25,000 at 20 years useful life.  
What would be the total depreciation after a 4 year period under each depreciation method given below.
    - i. Straight line method.
    - ii. Sum- of-the year digit method.
  
  2. a. Graphically illustrate the neo-classical three stages of the production function.  
  
b. There are two inputs  $X_1$  and  $X_2$  and one output  $Y$  as related by the production function shown 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  $Y$
    - ii. Find the level of  $X_1$  when  $AP = 0$ .

3. a. Briefly explain the Payback period and Simple rate of return methods of Investment analysis.

b. For the following data on two project alternatives, find out the most profitable investment using Payback period and Simple Rate of Return methods.

<b>Investment alternatives</b>		
<b>Item</b>	<b>Project A</b>	<b>Project B</b>
Capital outlay	Rs. 10, 000	Rs. 10, 000
Net cash revenues		
Year 1	2,500	4,000
Year 2	2,500	4,000
Year 3	2,500	4,000
Year 4	2,500	-
Year 5	2,500	-
Year 6	2,500	-
Annual depreciation	Rs.1,667	Rs.3,333

4. a. How do you form expectations using “Most likely method” and “Averages”?

b. Find out the best estimate using the most likely method.

<u>Possible paddy yields</u> (Bushel/ acre)	<u>Number of years actual</u> yield was in this range
0- 10	1
11- 20	2
21- 30	5
31- 40	7
41- 50	4
51- 60	1

- c. Find out the expected value for price of cow using simple and weighted average methods.

<u>Year</u>	<u>Average annual price(Rs)</u>
5 Years ago	8,000.00
4 Years ago	7,960.00
3 Years ago	9,160.00
2 Years ago	10,030.00
Last year	12,010.00

5. a. Prepare the partial budget for the following data. The proposed change is the addition of 50 beef cows to an existing herd. However, not enough forage is available and 100 acres currently in grain production must be converted to forage production.

Interest on cows/ Bulls	Rs. 250,000
Taxes	Rs. 10,000
Labor cost on rearing cows	Rs. 60, 000
Fertilizer cost	Rs. 275,000
Seed cost	Rs. 120,000
Chemical cost	Rs. 150,000
Pasture fertilizer cost	Rs. 150,000
Feed and hay cost	Rs. 200,000
Veterinary and health cost	Rs. 50,000
Labor cost on grain production	Rs. 150,000

Revenue from grain production (5000 bushels @ Rs. 400 per bushel)

Revenue from 5 cull cows	Rs. 250,000
Revenue from 18 heifer calves	Rs. 645,800

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

(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					