EASTERN UNIVERSITY, SRI LANKA
SECOND YEAR, FIRST SEMESTER EXAMINATION IN AGRICULTURE
(JUNE 2003)

AEC: 2101 FARM MANAGEMENT ECONOMICS

Time allowed: 03 hours **Answer All Questions**

1) a) List the objectives of **Farm Management**.

b) Differentiate the two main types of farm management decisions.

c) Explain the basic functions of management.

2) a) Why do you think keeping farm records is important?

b) Explain what is "**Taking an Inventory**".

c) What is '**Depreciation**' and how is it caused?

d) Give the differences between **Partial and Total Budgeting**.

e) What do you understand by '**Comparative Advantage**' in production.

3) a) What are the assumptions of Linear Programming?

b) Briefly comment on the statement that 'Graphical approach of linear programming is not always compatible with production problems'.

c) A farmer wishes to mix fertilizer that will provide a minimum of 15 units of potash, 20 units of nitrates, and 24 units of phosphates. **Brand A** provides 3 units of potash, 1 unit of nitrate, and 3 units of phosphate; it costs Rs. 120/unit. **Brand B** provides 1 unit of potash, 5 units of nitrate, and 2 units of phosphate; it costs Rs.60/unit.

i) Express the desired specifications as equations and inequalities.

ii) If you want to use the Simplex Method for the above problem, draw the Initial Simplex Tableau using the information provided.

4) a) Explain how do farmers encounter ' production and technical risks'.

b) What are different attitudes of farm managers towards risk?(Illustrate using graphs)

c) Briefly discuss the sources of risks and uncertainty in agriculture.

5) a) How does probability and expectations help in decision making process?

b) What do you understand by **Expected Monetary Value (EMV)?**

c) An Agribusiness firm has the opportunity of marketing a new package of food product. It has two possible courses of action;

i) to test market on a limited scale or
ii) to abandon the project completely.

The Test market costs **Rs. 160,000** to the firm. The consumer reaction is equally likely to be 'positive' or 'negative'. If the reaction to the test marketing were to be 'positive' the firm could either market the food product nationally or still give up the project completely. A national launch might result in the following sales:

Sales	Contribution (Rs million)	Probability
High	1.2	0.25
Average	0.3	0.50
Low	- 0.24	0.25

If the test marketing were to give 'negative' results the firm would give up the project. Giving up the project at any point result in a contribution of **Rs. 60,000** by the firm.

Answer the following, using the above information;

i) Draw a "**Decision Tree**" to represent this situation, including all relevant probabilities and financial values.

ii) If you are the Firm's Manager, recommend a course of action for the firm on the basis of **Expected Monetary Values (EMV).**

6) a) Explain the **Production Possibility Curve (PPC)** and the **Marginal Rate of Product Substitution (MRPS).**

b) How is the Revenue Maximization combination of Output determined on the Production Possibility Curve (PPC)?.

c) The relationship between two products Y_1 **and** Y_2 is given by the following function:

$$Y_1 = 200 - 0.013Y_2$$

If Price of Y_1 = Rs.10/ unit, and
Price of Y_2 = Rs.12/ unit, then

i) Find out the maximum quantities of Y_1 & Y_2 that can be produced;

ii) Derive an Equation for the MRPS function; and

iii) Find out the combination of Y_1 & Y_2 that will give the Maximum Total Revenue.

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