



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2010/2011
FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE (AGRICULTURAL MANAGEMENT AND TRADE)

KBT 300: APPLIED AGRIBUSINESS

DATE: MONDAY, 22ND NOVEMBER 2010

TIME: 2.00 P.M – 4.00 P.M

INSTRUCTIONS: ANSWER QUESTION ONE AND TWO OTHER QUESTIONS

- I. a) Define the following terms:
- i. Management (1 mark)
 - ii. Law of diminishing returns (1 mark)
 - iii. Marginal revenue (1 mark)
 - iv. Marginal cost (1 mark)
 - v. Marketing (1 mark)
- b) Differentiate between the following:
- i. Debt financing Vs equity financing (2 marks)
 - ii. Balance sheet Vs profit and loss statement (2 marks)
 - iii. Enterprise budget Vs partial budget (2 marks)
 - iv. Solvency Vs liquidity (2 marks)
 - v. Straight line Vs diminishing balance as methods of calculating depreciation (2 marks)
 - vi. Controllable Vs non-controllable marketing variables (2 marks)
 - vii. Break-even yield Vs break-even price (2 marks)
- c) Outline and provide a brief explanation on the following:
- i. The different marketing management concepts/philosophies (5 marks)
 - ii. Three measures of liquidity (3 marks)
 - iii. Three measures of profitability (3 marks)

d) Mr Tom is a farmer whose objective is to maximize total gross margins. He has three alternative activities (i.e. production of maize, ground nuts and maize) and four constraints i.e. Land (limited to 5 acres), June labour (limited to 30 man-day), December labour (limited to 35 man-days) and Total labour (limited to 300 man-days). Each acre of maize requires 6 man-days of June labour, no labour in December, and 70 man-days of total labour while the gross margin is USD 100/acre. Each acre of ground nuts requires 16 man-days of June labour, 20 man-days of December labour and 100 man-days of total labour while the gross margin is USD 400/acre. Each acre of cotton requires 24 man-days of June labour, 25 man-days of December labour and 150 man-days of total labour while the gross margin is USD 500/acre.

- i. Summarize the above data (activities, constraints and gross margins) in a Table for programme planning (4 marks)
- ii. Using the terms X_1 , X_2 , and X_3 to represent the number of acres for maize, groundnuts and cotton respectively and the term Z to represent the total gross margins, construct a standard linear programming problem (6 marks)

2. Study the following enterprise budget (for corn production) carefully and answer the following questions:

Item	Value/acre (Ksh)
Income:	
60 bags @ Ksh 1,000/ bag	?
Variable costs:	
Seed	1,050
Fertilizer and lime	2,340
Chemicals	2,900
Machinery fuel and repairs	2,055
Drying	2,095
Labour @ Ksh 10/hr	?
Total variable cost	13,650
Fixed costs:	
Machinery depreciation, interest	2,100
Land charge	?
Total fixed costs	8,900
Total costs	?
Estimated profit	?

- a) Clearly showing your calculations, fill in the blank spaces (10 marks)
 b) Calculate the break-even yield (2.5 marks)
 c) Calculate the break-even price (2.5 marks)

3. Use your knowledge of a balance sheet and ratio analysis to complete the following abbreviated balance sheet. The net capital ratio = 4, the current ratio = 2, and the working capital ratio = 3. Show your calculations. (15 marks)

Assets		Liabilities	
Total current assets	Ksh 40,000	Total current liabilities	?
Total intermediate assets	?	Total intermediate liabilities	Ksh 20,000
Total fixed assets	?	Total long-term liabilities	?
		Total liabilities	?
		Net-worth	?
Total assets	?	Total liabilities and net-worth	Ksh 400,000

4. The Table below shows the relationship between different amounts of a resource/input (e.g. fertilizer in Kgs) and the corresponding output level (input price = Ksh 12/unit; output price = Ksh 2/unit). Showing your calculations correctly, complete the blank spaces. Further, indicate the output level which maximizes profit. (15 marks)

Input level	Total physical product (TPP)	Average physical product (APP)	Marginal physical product (MPP)	Total revenue (TR)	Marginal revenue (MR)	Marginal cost (MC)
0	0	—	—	—	—	—
1	12	—	—	—	—	—
2	30	—	—	—	—	—
3	44	—	—	—	—	—
4	54	—	—	—	—	—
5	62	—	—	—	—	—
6	68	—	—	—	—	—
7	72	—	—	—	—	—
8	74	—	—	—	—	—
9	72	—	—	—	—	—
10	68	—	—	—	—	—