

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE IN BACHELOR OF SCIENCE IN AGRICULTURAL ECONOMICS**

**AGEC 343: FARM MANAGEMENT**

**STREAMS: ODEL**

**TIME: 2 HOURS**

**DAY/DATE: THURSDAY 13/04/2023**

**2.30 P.M. –4.30 P.M.**

**INSTRUCTIONS**

- i. Answer questions ONE in Section A and any other THREE questions in Section B**
- ii. Do not write on the question paper**
- iii. Write legibly and cite relevant examples where applicable**

**SECTION A (25 MARKS)**

**Question One**

- a) Distinguish among the following types of budgets:
  - i. Complete budget (2 marks)
  - ii. Partial budget (2 marks)
  - iii. Break even budgeting (2 marks)
- b) Discuss the scope of Farm management (7 marks)
- c) Mr. Chok's most profitable enterprise is cotton of which he grows on 8 ha. It has a gross margin of sh. 17 000/ Ha and cost sh. 2,800/Ha to weed, and maize has a gross margin of sh. 8,400/Ha. So the proposal is to increase this area of cotton by using herbicide to avoid the labour bottleneck at weeding. Use of herbicide would enable cotton to be increased to 14Ha. And would reduce the cost of casual labour to sh. 700/Ha. The herbicide would cost sh. 1000/Ha and power take off pump, tank and boom costing sh.63, 000 would have to be bought. This equipment is expected to last for seven years and to have running costs of sh.4, 000 a year.

- i. Should Mr. Chok invest in this equipment in order to increase his cotton area? (7 marks)
- ii. Discuss the characteristics of good farm plan. (5 marks)

**SECTION B (40 MARKS)**

**Question two**

Swazuri Dairy Company manufactures two brands of Milk, Fresh Milk and Yoghurt. Fresh Milk has a contribution of sh.4 per unit and Yoghurt has a contribution of sh.3 per unit. Fresh Milk requires 30 machine minutes and 30 labour minutes to manufacture a unit. Yoghurt requires 20 machines minutes and 30 labour units to manufacture a unit. Total available machine hours per day are 12 hrs whereas total available labour hours per day are 14 hrs.

- i. Formulate linear programming model (7 marks)
- ii. How much of each brand should Swazuri Dairy Company produce if it wishes to maximize its daily contribution assuming that all the brands produced is sold. (8 marks)

**Question three**

- a) A farmer has 30 acres of arable land, 20 acres of which is under maize and 10 acres under grass ley. He wishes to know whether replacing 10 acres of maize with Irish potatoes would be worthwhile. The fertilizer rate would have to be increased from one bag to per acre for maize to 2 bags per acre for potatoes and an extra 20 man days of casual labour at the rate of shs. 40/MD will be necessary as a result of the change. Average yields of maize and potatoes are 15 and 50 bags per acre respectively. The output prices are shs. 220 per bag of maize and shs. 180 per bag per bag of potatoes. Seeds cost 120 per acre for maize 320 per acre for potatoes. Fertilizers costs 850 per bag. Draw up a partial budget and indicate the effects of the change and advice the farmer. (10 marks)
- b) Discuss the factors to consider in planning a farm layout (5 marks)

**Question Three**

- a) Highlight the assumptions of linear programming (5 marks)
- b) Elaborate the information needed for program planning in farm business management (5 marks)
- c) Discuss the Marginal Rate of Substitution and how it applies in the three stages of production (5 marks)

**Question Five**

- a) Discuss the management factors to be considered when analyzing the performance of a farm business (10 marks)
  - b) Discuss the objectives of farm business accounts (5 marks)
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