CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION, BACHELOR OF AGRICULTURAL ECONOMICS, BACHELOR OF AGRIBUSINESS MANAGEMENT

AGEC 343: FARM MANAGEMENT

STREAMS: AGBM, AGED, AGEC **TIME: 2 HOURS**

DAY/DATE: TUESDAY 21/04/2020 **8.30 AM – 10.30 AM**

INSTRUCTIONS:

- **Answer ALL Questions in Section A and any other Three Questions in Section B**
- **Do not write on the question paper**
- **Write legibly and cite relevant examples where applicable**

SECTION A (25 MARKS)

Question One

(a) Farm management can be described as a problem-solving activity and as a decision making activity. Discuss. [7 marks]

(b) A dairy frmer is contemplating whether to engage in veal production (fattening his bull calves) and sell at kshs 33,280 (160 kg live weight @ kshs 208) or sell the new born calve at kshs 1600 and milk for kshs 16/kg. To attain the required weight, the calve will have consumed 1800 kg of milk. Other costs include labour and housing costs which are estimated at kshs 3,200. Use this information to advise the farmer on the merits or demerits of veal production. [7 marks]

(c) Planning is an important aspect of farm business. Explain the characteristics of a good farm plan. [5 marks]

(d) Discuss the following concepts as used in farm management:

(i) The principle of product substitution [2 marks]
(ii) The law of equi-marginal returns [2 marks]

(iii) The law of diminishing marginal returns [2 marks]

SECTION B (45 MARKS)

Question Two

(a) 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. 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 (15 Marks)

(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 labor 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. 320 per acre for potatoes. Fertilizers costs 850 per bag. Draw up a partial budget and indicate the effects of the change and advise the farmer. [10 marks]

(b) Discuss the factors to consider in planning a farm layout. [5 marks]

Question Four (15 Marks)

On a medium size farm in a high potential area of Bungoma County, the relevant activities and constaints are found to be as in the table below. Develop a program plan for the farm, giving the feasible enterprise combination that maximizes farm profits. [15 marks]

		Coffee	Poultry	Cassava	Beans	Wool
	GM per acre	1100	770	740	480	360
			Resource	Coefficients		
Constraint	Resources					
1st Rain Land	320	2	2	2	0	2
2nd Rain Land	320	2	2	0	2	2
Coffee	80	-	-	-	-	-

Quota						
March Labour	4800 MDs	0	60	40	0	40
April Labour	4800 MDs	60	40	20	0	30
Aug Labour	4800 MDs	40	40	20	20	20
Nov Labour	4800 MDs	0	60	0	10	20
Dec Labour	4800 MDs	75	20	0	10	20

Question Five (15 Marks)

(a) Explain the management factors to be considered when analyzing the performance of a farm business. [10 marks]

(b) Elaborate the information needed for program planning in farm business management. [5 marks]
