CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF MASTER OF SCIENCE IN AGRONOMY

AGRI 850: ANNUAL CROP MANAGEMENT

STREAMS: MSC AGRI (Y1S2) PART TIME   **TIME: 2 HOURS**

DAY/DATE: WEDNESDAY 4/12/2019   **8.30 A.M – 10.30 A.M**

INSTRUCTIONS :
Answer all questions in section A and any two questions in section II
Use of calculators is allowed
Do no write anything on the question paper

SECTION 1 (20 MARKS) ANSWER ALL THE QUESTIONS

QUESTION ONE

(a) Explain the importance of simulation models in annual crop management. [8 marks]

(b) Design a four phased crop simulation model.   [12 marks]

SECTION II (40 MARKS) ANSWER ANY TWO QUESTIONS

QUESTION TWO

Discuss how you can increase starch content and yield in annual crops.

QUESTION THREE

(a) Hybrid H614 is a gross feeder and removes a lot of nutrients from the soil. One ton of maize crop removes the following nutrients in kilograms from the soil:

	Ear	Stovers	Roots
Nitrogen (N)	45.5	15.33	2.70
	7.67	3.62	0.30
	37.9	27.4	1.87

Calculate the amount of N,P and K nutrients to be applied in a farm in order to harvest 21 tons of maize grain. One kilogram of maize crop makes 0.21 kg of grain maize. The source of fertilizer to apply is CAN (25:5:15) show all your calculations. [10 marks]

(a) Discuss the factors that affect growth of annual crops and their possible management strategies. [10 marks]

QUESTION FOUR (20 MARKS)

(a) Discuss how you can improve the yield and stability of an annual crops. [12 marks]

(b) Explain the balance hypothesis in relation to beans *(Phaseolus vulgaris)* productivity under different growth conditions. [8 marks]