CHUKA UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF THE MASTERS OF SCIENCE DEGREE IN AGRIBUSINESS MANAGEMENT

AGBM 814: AGRIBUSINESS SUPPLY CHAIN MANAGEMENT

STREAMS: AGBM **TIME:3HOURS**

DAY/DATE: THURSDAY 07/08/2025 **8.30A.M. –11.30 A.M**

INSTRUCTIONS

(i) Answer ANY THREE questions
(ii) Do not write on the question paper
(iii) Show your working clearly

Question One

Mark owns a fish shop where he sells an exotic variety of tuna fish which he imports from Japan.

Mark refrigerates the fish in a cold storage facility near his shop that charges him a fixed annual fee of Shs. 100,000 and variable charge of Shs. 500 per day for each fish container that is stored.

Every morning, Mark brings fish from the cold storage to his shop for sale. Mark estimates that he incurs Shs. 1,000,000 electricity cost each year on refrigerating the fish inside his own shop.

Mark incurs the following ordering costs:

- Delivery charges of Shs. 1,000,000 per delivery
- Import duties of Shs. 30,000 per carton
- Custom fees of Shs. 20,000 per order
- Import license fee of Shs. 15,000 per annum

Mark currently imports fish by placing one order of 20 cartons every month. Each carton costs Shs. 200,000.

Mark is wondering if he can save inventory costs by adopting EOQ model.

a) Calculate the current annual total inventory costs (10 marks)

b) Calculate the economic order quantity (5 marks)

c) Calculate the annual total inventory costs if EOQ is used (5 marks)

Question Two

a) Discuss 10 major challenges faced by the agribusiness sector within its Support systems. **(10 marks)**

b) Discuss the major players in the agribusiness sector and their major activities in making the supply chain successful. (10 marks)

Question Three

A company has three production facilities *S1, S2* and *S3* with production capacity of 7, 9 and 18 units (in 100s) per week of a product respectively. These units are to be shipped to four warehouses *D1*, *D2*, *D3* and *D4* with requirement of 5, 8, 7 and 14 units (in 100s) per week respectively. The transportation costs per unit between factories to warehouses are given in the table below:

	D1	*D2*	*D3*	*D4*	Supply (availability)
S1	19	30	50	10	7
S2	70	30	40	60	9
S3	40	8	70	20	18
Demand (requirement)	5	8	7	14	34

Required: Formulate this transportation problem as an LP model to minimize the total transportation cost. (20 marks)

Question Four

a) Strategic outsourcing is the organizing arrangements that emerge when firms rely on intermediate market to provide specialized capabilities that supplement existing capabilities deployed along a firm's value/supply chain. Discuss the reason/benefits of outsourcing. (10 marks)

b) Quality is a strategic issue in supply chain management as a supply chain manager what tools of quality management that he should adopt to ensure efficiency in the supply chain (10 marks)
