



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI, ABUJA
FACULTY OF MANAGEMENT SCIENCES
2025_2 EXAMINATIONS

COURSE CODE: ENT704 **CREDIT UNIT: 2**

COURSE TITLE: QUANTITATIVE METHODS

TIME ALLOWED: 2 Hours

INSTRUCTIONS:

- 1. Attempt question Number one (1) and any other two (2).**
- 2. Question number 1 is compulsory and carries 30marks, while the other questions carry 20marks each**
- 3. Present all your points in coherent and orderly manner**

1a. Discuss what sequencing involves and the use of priority rules. 5Marks

b. What are the errors that can occur in making decisions? 5Marks

c. Consider the contingency Matrix Below

Contingency Matrix

States of Nature	Alternatives		Probability
	Stock Rice (A ₁)	Stock Maize (A ₂)	
High demand (S ₁) (₦)	8,000	12,000	0.6
Low demand (S ₂) (₦)	4,000	-3,000	0.4

Required: Represent the above payoff matrix on a decision tree and find the optimum contingency strategy. **20Marks**

2a. What is a Case Study 5marks

b. A stock keeper has to supply 12000 units of a product per year to his customer. The demand is fixed and known and the shortage cost is assumed to be infinite. The inventory holding cost is ₦ 0.20k per unit per month, and the ordering cost per order is N350. Determine

- i. The optimum lot size q_0**
- ii. Optimum scheduling period t_0**
- iii. Minimum total variable yearly cost.**

15marks

3a. Formulate a linear programming model for the transportation problem. 15Marks

	E	F	G	Supply
A	5	8	2	450
B	4	3	7	300
C	9	6	5	550
D	3	4	6	400
Demand	800	400	500	

b. Describe the phases in decision analysis. **5Marks**

4a. Discuss any five (5) factors to be considered in inventory control. **2Marks each = 10Marks**

b. Decision theory approach typically comprises four stages. Discuss **2½Marks each= 10Marks**