



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI, ABUJA**  
**FACULTY OF MANAGEMENT SCIENCES**  
**2025\_1 EXAMINATION...**

**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 30 marks, while the other questions carry 20 marks each**

**3. Present all your points in coherent and orderly manner**

**1a. Solve the following assignment problem using minimization method. The matrix entries are processing time of each Job to each machine in hours. 15Marks**

	I	II	III	IV	V
1	9	22	58	11	19
2	43	78	72	50	63
3	41	28	91	37	45
4	74	42	27	49	39
5	36	11	57	22	25

**b. Discuss the two phases involved in analyzing a decision tree. 2½Marks each = 5Marks**

**c. Discuss four (4) scopes of OR in financial management. 2½Marks each = 10Marks**

**2. Assuming six jobs are waiting to be processed. The processing time and due dates for the jobs are given below: Determine the sequence processing according to (a) FCFS (b) SPT and (c) EDD in the light of the following criteria: sequence, total flow time, average flow time, average job lateness and average number of jobs in the system. 15Marks**

Jobs	Processing Time (days)	Due date (days)
A	2	7
B	8	16

C	4	4
D	10	17
E	5	15
F	12	18

**b. What do you understand by the term Simulation? 5Marks**

**3. In the table below, items supplied from origins A, B, C and D and those demanded in locations 1, 2, 3 and 4 are shown. The figures in the boxes are the unit cost of moving an item from an origin to a destination, use the VAM method to allocate the material in order to minimize cost of transportation. 20Marks**

Origin	1	2	3	4	Supply
A	10	13	7	9	1000
B	6	11	15	18	2000
C	2	6	9	5	2500
D	11	15	10	1	3500
Demand	1500	2500	3000	2000	

**4a. Describe five (5) limitations of simulation 2½Marks each = 10Marks**

**b. Briefly discuss five (5) areas of Industrial Application of Linear Programming. 2Marks each for any five areas discuss = 10Marks**