D 105295 **(Pages : 3)** **Name.....**

Reg. No.....

SECOND SEMESTER M.B.A. DEGREE EXAMINATION, JULY 2024

M.B.A. (CUCSS)

BUS 2C 14—MANAGEMENT SCIENCE

Time : Three Hours Maximum : 36 Weightage

Answer **all** *the Parts.*

Part A

Answer **all** *questions.*
Each question carries 1 *weightage.*

1. What is Management Science about ?
2. What are the advantages of linear programming ?
3. List graphic and simplex methods of analysis.
4. What is Simulation ?
5. What are sequencing problem ?
6. Give example of product mix decision using software.

(6 × 1 = 6 weightage)

Part B

Answer any **four** *questions.*
Each question carries 3 *weightage.*

7. What are the types of linear programming ?
8. Draw a flow chart of decision tree.
9. What is PERT ?
10. What are the techniques in cost analysis ?
11. What are the uses of queuing ?
12. What are the assumptions in the queuing theory ?

(4 × 3 = 12 weightage)

Turn over

Part C

Answer any **three** *questions.*
Each question carries 4 *weightage.*

13. What is the meaning of sampling frame ?

14. What are the benefits of simulation theory and computer software ?

15. Find the sequence that minimizes the total elapsed required to complete the following jobs. Each jobs in processed in the order ABC :

Jobs	:	J_1	J_2	J_3	J_4	J_5	J_6
Time on Machine A	:	12	8	7	11	10	5
Time on Machine A	:	7	10	9	6	10	4
Time on Machine A	:	3	4	2	5	2	4

16. A Finance manager is considering drilling a well. In the past, only 70 % of well drilled were successful at 20 metres depth in the area. Moreover, on finding no water at 20 metres, some persons in that area drilled it further up to 25 metres but only 20 % struck water at that level. The prevailing cost of drilling is Rs. 500 per metre. The Finance Manager estimated that in case he does not get water in his own well, he will have to pay Rs. 15,000 to buy water from outside for the same period of getting water from the well. The following decisions are considered :

    i) Do not drill any well ;

    ii) Drill up to 20 metres ; and

    iii) If no water found at 20 meters drill further up to 25 metres.

    Draw an appropriate decision tree and determine the finance manager's optimal strategy.

17. Explain the scope and importance of management science in running business effectively.

(3 × 4 = 12 weightage)

Part D (Compulsory)

The question carries 6 *weightage.*

18. A company is spending ₹ 1,500 on transportation of its units from three plants to four destinations. The supply and demand of units with unit cost of transportation are given as under. What can be the maximum saving by optimal scheduling :

Plants	Destination Centres				Supply
	1	2	3	4	
P1	20	30	50	17	7
P2	70	35	40	60	10
P3	40	12	60	25	18
Demand	5	8	7	15	

(1 × 6 = 6 weightage)