

QP Code: D143768		Total Pages: 2		Name:		
				Register No.		
FOURTH SEMESTER (CUFYUGP) DEGREE EXAMINATION, APRIL 2026						
MANAGEMENT STUDIES						
BBA4CJ205 DECISION SCIENCE						
2024 Admission onwards						
Maximum Time :2 Hours				Maximum Marks :70		
Section A						
All Questions can be answered. Each Question carries 3 marks (Ceiling: 24 Marks)						
1	Define operations research					
2	What do you mean by Game Theory?					
3	What is the MODI Method?					
4	Define CPM					
5	Why is ethics important in OR?					
6	What are the properties of linear programming?					
7	State any three characteristics of Operations Research.					
8	Define the Assignment Problem.					
9	What is Float or Slack?					
10	What is a decision tree?					
Section B						
All Questions can be answered. Each Question carries 6 marks (Ceiling: 36 Marks)						
11	Explain the methodology of Operations Research.					
12	Explain decisions under certainty and uncertainty.					
13	What are the steps involved in the North West Corner Method?					
14	What are the objectives of network analysis?					
15	Solve the game with the following pay-off matrix.					
		Player B strategies				
		I	II	III	IV	V
	1	-2	5	-3	6	7
	2	4	6	8	-1	6
	3	8	2	3	5	4
	4	15	14	18	12	20
	Player A strategies					
16	Solve the following LPP graphically Max $Z = 4X + 5Y$ Subject to $X + Y \leq 20$ $3X + 4Y \leq 72, \quad X, Y \geq 0$					
17	What is an Assignment Problem? Explain its features.					

18	A paper mill produces two grades of paper, X and Y. Because of raw material restrictions, it cannot produce more than 400 tonnes of grade X and 300 tonnes of grade Y in a week. There are 160 production hours in a week. It requires 0.2 and 0.4 hours to produce a tonne of products X and Y, respectively, with corresponding profits of 200 and 500 per tonne. Formulate this as a LPP to maximize profit and find the optimum product mix.																						
Section C																							
Answer any ONE. Each Question carries 10 marks (1x10=10 Marks)																							
19	Explain different models and techniques of operations research.																						
20	<p>A small maintenance project consists of the following Jobs whose precedence relationships are given below.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding-right: 10px;">Job:</td> <td style="padding-right: 10px;">1-2</td> <td style="padding-right: 10px;">1-3</td> <td style="padding-right: 10px;">2-3</td> <td style="padding-right: 10px;">2-5</td> <td style="padding-right: 10px;">3-4</td> <td style="padding-right: 10px;">3-6</td> <td style="padding-right: 10px;">4-5</td> <td style="padding-right: 10px;">4-6</td> <td style="padding-right: 10px;">5-6</td> <td style="padding-right: 10px;">6-7</td> </tr> <tr> <td style="padding-right: 10px;">Duration:</td> <td style="padding-right: 10px;">15</td> <td style="padding-right: 10px;">15</td> <td style="padding-right: 10px;">3</td> <td style="padding-right: 10px;">5</td> <td style="padding-right: 10px;">8</td> <td style="padding-right: 10px;">12</td> <td style="padding-right: 10px;">1</td> <td style="padding-right: 10px;">14</td> <td style="padding-right: 10px;">3</td> <td style="padding-right: 10px;">14</td> </tr> </table> <p>(Days)</p> <ol style="list-style-type: none"> 1. Draw an arrow diagram 2. Find the total float for each activity 3. Find the critical path and the project duration. 	Job:	1-2	1-3	2-3	2-5	3-4	3-6	4-5	4-6	5-6	6-7	Duration:	15	15	3	5	8	12	1	14	3	14
Job:	1-2	1-3	2-3	2-5	3-4	3-6	4-5	4-6	5-6	6-7													
Duration:	15	15	3	5	8	12	1	14	3	14													