Batch 2- Practical

VPM's
DR VN BRIMS, Thane
Programme: MMS (2021-23)
Second Semester Regular Examination October 2022

Course Name	Operations Research	**Course Code**	C03
Roll No.		**Marks**	60
Total No. of Questions	6	**Duration**	3 Hours
Total No. of printed pages	1	**Date**	10.10.2022

Course Outcome Statements:

CO1: Recall the concepts of operations research and relate with business problems
CO2: Interpret business insights for optimization of business problems
CO3: Apply appropriate operations research tools in relevant business scenarios
CO4: Examine the business problems and prescribe probable solutions
CO5: Recommend alternate solutions to business problems

Instructions: -

Q. No 1 (All Questions are Compulsory)

Q. No.		Questions	Marks	BL	CO
Q. 1		Case/Case-let Study (500-800 words)			
	a.	An airline offers coach and first-class tickets. For the airline to be profitable, it must sell a minimum of 20 first-class tickets and a minimum of 60 coach tickets. The company makes a profit of $200 for each coach ticket and $200 for each first-class ticket. At most, the plane has a capacity of 150 travellers. By using Excel Solver, Determine-How many of each ticket should be sold in order to maximize profits.	**6**	**Level 4**	**CO4**
	b.	As an OR/DA executive, what decisions would you recommend to the planning team by analyzing the sensitivity report?	**6**	**Level 5**	**CO5**
Q. 3		Answer Q3.a			
	a.	A Manufacturing Company has three resource facilities and four markets to serve. The demand of each market and the capacity of each resource facility is as per the below table. The unit cost required to transport one unit of product from the resource facility to the respective market is also tabulated below. Assign facility to each market in such a way that the total cost of transportation is minimized. Determine quantities to be transported from each assigned resource facility.	**6**	**Level 4**	**CO4**

Location	D1-Mumbai	D2-Nagpur	D3-Gujrat	D4-Delhi	Factory Capacity
Q1- Bhiwandi	2	1	6	4	350
Q2-Thane	2	6	5	8	450
Q3- Ambernath	8	3	3	2	550
Requirement	300	400	400	250	

Q. 4		Answer Q.4 a			
	a.	4 Pilots need to be deputed to 4 Flights in such a way that the overall preference of all the pilots is maximized, 4 pilots have given their preference from 1-10 10 being the highest for most preferred flights.	**6**	**Level 3**	**CO3**

	Mumbai-Singapore	Mumbai-Shanghai	Mumbai-Network	Mumbai-Sydney
1	10	9	8	10
2	8	8	10	9
3	7	10	8	8
4	10	9	8	10