



### ASSIGNMENT

<b>DRIVE</b>	<b>WINTER 2014</b>
<b>PROGRAM</b>	<b>MBA/ MBADS/ MBAFLEX/ MBAHCSN3/ PGDBAN2</b>
<b>SEMESTER</b>	<b>II</b>
<b>SUBJECT CODE &amp; NAME</b>	<b>MB0048 OPERATIONS RESEARCH</b>
<b>BK ID</b>	<b>B1631</b>
<b>CREDITS</b>	<b>4</b>
<b>MARKS</b>	<b>60</b>

Note: Answer all questions. Kindly note that answers for 10 marks questions should be approximately of 400 words. Each question is followed by evaluation scheme.

<b>Q.No</b>	<b>Questions</b>	<b>Marks</b>	<b>Total Marks</b>
1	<i><b>Explain the types of Operations Research Models. Briefly explain the phases of Operations Research.</b></i>		
	Meaning of Operations Research	2	10
	Types of Operations Research Models	4	
	Phases of Operations Research	4	
2	<i><b>a. Explain the graphical method of solving Linear Programming Problem. b. A paper mill produces two grades of paper viz., X and Y. Because of raw material restrictions, it cannot produce more than 400 tons of grade X paper and 300 tons of grade Y paper in a week. There are 160 production hours in a week. It requires 0.20 and 0.40 hours to produce a ton of grade X and Y papers. The mill earns a profit of Rs. 200 and Rs. 500 per ton of grade X and Y paper respectively. Formulate this as a Linear Programming Problem.</b></i>		
	Meaning of Linear programming problem	2	10
	Explanation of graphical method of solving Linear Programming Problem	4	
	Formulation of LPP (Objective function & Constraints)	4	
3	<i><b>a. Explain how to solve the degeneracy in transportation problems. b. Explain the procedure of MODI method of finding solution through optimality test.</b></i>		

	a. Degeneracy in transportation problem	5	10																
	b. Procedure of MODI method	5																	
4	<i>a. Explain the steps involved in Hungarian method of solving Assignment problems.</i> <i>b. What do you mean by unbalanced assignment problem? How do you overcome it?</i>																		
	Steps in Hungarian method	6	10																
	Unbalanced assignment problem	4																	
5	<i>a. Write a short note on Monte Carlo Simulation.</i> <i>b. A Company produces 150 cars. But the production rate varies with the distribution.</i> <table border="1"><tr><td>Production Rate</td><td>147</td><td>148</td><td>149</td><td>150</td><td>151</td><td>152</td><td>153</td></tr><tr><td>Probability</td><td>0.05</td><td>0.10</td><td>0.15</td><td>0.20</td><td>0.30</td><td>0.15</td><td>0.05</td></tr></table> <i>At present the track will hold 150 cars. Using the following random numbers determine the average number of cars waiting for shipment in the company and average number of empty space in the truck. Random Numbers 82, 54, 50, 96, 85, 34, 30, 02, 64, 47.</i>			Production Rate	147	148	149	150	151	152	153	Probability	0.05	0.10	0.15	0.20	0.30	0.15	0.05
Production Rate	147	148	149	150	151	152	153												
Probability	0.05	0.10	0.15	0.20	0.30	0.15	0.05												
	Explanation of Monte Carlo Simulation	5	10																
	Calculation/ Solution to the problem	5																	
6	<i>a. Explain the dominance principle in game theory.</i> <i>b. Describe the Constituents of a Queuing System.</i> <i>c. Differentiate between PERT and CPM.</i>																		
	a. Dominance principle in game theory	4	10																
	b. Constituents of a Queuing System	3																	
	c. Differences between PERT and CPM	3																	