MBA(PT) DEGREE III SEMESTER EXAMINATION DECEMBER 2013

SMP 2302 MANAGEMENT SCIENCE
(2012 Admission)

Time: 3 Hours   Maximum Marks : 50

PART A
(Answer *ALL* questions)

(5 x 2 = 10)

I.   Distinguish between min-max and max-min theories.

II.   List and explain the assumption of linear programming.

III.   Distinguish between reneging and balking.

IV.   What is sequencing? How will you extend Johnson's algorithm to 3 machines x n job problem.

V.   What is time/Gantt chart in project management? Give an example.

PART B
(Answer *ANY FIVE* questions)

(5 x 4 = 20)

VI.   What is decision tree? Give an example.

VII.   A small manufacturer employees 5 skilled men and 10 semi-skilled men for making a product in two qualities: a deluxe model and an ordinary model. The production of a deluxe model requires 2 –hour work by a skilled man and 2-hour work by semi-skilled man. The ordinary model requires 1- hour work by a skilled man and 3 hour work by a semi-skilled man. According to worker's un ion rules, no man can work more than 8 hours per day. The profit of the deluxe model is Rs.1000 per unit and that of the ordinary model is Rs.800 per unit. Formulate a linear programming model for this manufacturing situation to determine the production volume of each model such that the total profit is maximized.

VIII.   Consider the following two machines and six jobs flow shop problem. Obtain the optimal schedule and the corresponding makespan for this problem.

Job	Machine 1	Machine 2
1	5	7
2	10	8
3	8	13
4	9	7
5	6	11
6	12	10

IX.   How will you simulate the demand of a product if follows a probability distribution? Explain it with an example.

X.   Discuss the guidelines to construct a project network.

XI.   Find the initial basic feasible solution to the following transportation problem by using northwest corner cell method.

		To			Availability
		1	2	3	5
From	1	2	7	4	8
	2	3	3	1	7
	3	5	4	7	14
	4	1	6	2	
	Demand	2	9	18	