



MBA(F).II/04.13.0377

MBA DEGREE (FT) II SEMESTER EXAMINATION APRIL 2013

**SMS 2202 MANAGEMENT SCIENCE
(2009,2010 &2011 Admissions)**

Time : 3 Hours

Max. Marks: 50

- I. A. Describe some methods which are useful for decision making under uncertainty. Illustrate each by an example.

OR

- B. A company make two types of products. Each product of the first type requires twice as much labourers time as the second type. If all products are of second type alone the company can produce a total of 500 units a day. The market limits daily sales of the first and second type to 150 and 250 units respectively. Assuming that the profit per unit are ₹ 500/- for type II, determine the number of units of each type to be produced in order to maximize profit.

- II. A. State a transportation problem. When does it have a unique solution? Explain.

OR

- B. Solve the transportation problem and test its optimality.

		1	2	3	4	Supply
Source	1	2	3	11	7	6
	2	1	0	6	7	1
	3	5	8	15	9	10
Demand		7	5	3	2	

- III. A. Explain the difference between transportation problem and an assignment problem. Explain assignment problem in detail.

OR

- B. Consider the problem of assigning five jobs to the persons. The assignment cost are given as follows:

		Jobs				
		1	2	3	4	5
Persons	A	8	5	2	6	1
	B	0	9	5	5	4
	C	3	8	9	2	6
	D	4	3	1	0	3
	E	9	5	8	9	5

Determine the optimum assignment schedule.

(P.T.O)

IV. A. With respect to the queue system, explain the following.

- (i) Input process
- (ii) Queue discipline
- (iii) Capacity of the system.

OR

B. Solve the following sequencing problem and find the total elapsed time and idle time of machines.

		Machines			
		M1	M2	M3	M4
Jobs	A	13	8	7	14
	B	12	6	8	19
	C	9	7	8	15
	D	8	5	6	15

V. A. Define simulation model. Distinguish between deterministic and stochastic simulation models.

OR

B. A project is composed of eleven activities, the time estimates for which are given below:

Activity	A (days)	B(days)	On (day)
1-2	7	17	9
1-3	10	60	20
1-4	5	15	10
2-5	50	110	65
2-6	30	50	40
3-6	50	90	55
3-7	1	9	5
4-7	40	68	48
5-8	5	15	10
6-8	20	52	27
7-8	30	50	40

- (i) Draw the network diagram for the project.
- (ii) Calculate slack for each node.
- (iii) Determine the critical path.
- (iv) What is the probability of completing the project in 125 days?

