Code :07MB203

M.B.A - II Semester Supplementary Examinations, August/September 2011
QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS
(For students admitted in 2007-08 & 2008-2009 only)

Time: 3 hours **Max Marks: 60**

Answer any FIVE questions
All questions carry equal marks
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1. How far can quantitative techniques be applied in management decision making. Discuss in detail, with special reference to any functional area of management.

2. A business man has two independent investment portfolios A and B, available to him, but be lacks the capital to undertake both of them simultaneously. He can either choose A first and then stop, or if A is not successful, then take B or vice versa. The probability of success of A is 0.6, while for B it is 0.4. Both investment schemes require an initial capital outlay of Rs 10000 and both return nothing if the venture proves to be unsuccessful. Successful completion of A will return Rs 20000(over cost) and successful completion of B will return Rs 24000(over cost). Draw a decision tree in order, to determine the best strategy.

3. (a) Solve the following LPP using the simplex method.
   Max $z=x_1-x_2+3x_3$
   Subject to $x_1 + x_2 + x_3 \leq 10$
   $2x_1 - x_3 \leq 2$
   $2x_1 - 2x_2 + 3x_3 \leq 0$
   and $x_1, x_2 \geq 0$
   (b) How can the concept of duality be useful in managerial decision making?

4. obtain an optimal solution to the following problem by using 'Modi' method.

	D1	D2	D3	D4	Supply
S1	19	30	50	10	7
S2	70	30	40	60	9
S3	40	8	70	20	18
Demand	5	8	7	14	34

5. Two breakfast food manufactures, ABC and XYZ are competing for an increased market share. The payoff matrix, shown in the following table, describes the increase in market share for ABC and decrease in market share of XYZ.

ABC	Give coupons	Decrease Price	Maintain Present strategy	Increase Advertising
Give Coupons	2	-2	4	1
Decrease Price Maintain	6	1	12	3
Present strategy	-3	2	0	6
Increase Advertising	2	-3	7	1

Determine the optimal strategies for both the manufactures and the value of game.

6. In a bank cheques are cashed at a single teller counter customers arrive at the counter in a poison's manner at an average rate of 30 customers per hour. The teller asks, on an average, a minute and a half to cash a cheque. The service time has been shown to be exponentially distributed.
   (a) Calculate the percentage of time the teller is busy
   (b) Calculate the average time a customer is expected to wait.

7. (a) What are the advantages and limitations of simulation models?
   (b) Define simulation. Why simulation is is used.

8. The following table gives data on normal time, and cost and crash time and cost for a project.

Activity	Normal		Crash	
	Time(weeks)	Cost(Rs)	Time(weeks)	Cost(Rs)
1-2	3	300	2	400
2-3	3	30	3	30
2-4	7	420	5	580
2-5	9	720	7	810
3-5	5	250	4	300
4-5	0	0	0	0
5-6	6	320	4	410
6-7	4	400	3	470
6-8	13	780	10	900
7-8	10	1000	9	1200

Indirect cost is Rs 50 per week

   (a) Draw the network diagram for the project and identity the critical path.
   (b) What are the normal project duration and associated cost?

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