

Code: 07MB203

MBA - II Semester Supplementary Examinations, August/September 2012

**QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS**

(For students admitted in 2008 only)

Time: 3 hours

Max Marks: 60

Answer any FIVE questions  
All questions carry equal marks

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- 1 Explain the nature, scope and significance of quantitative analysis.
- 2 (a) What is operations research? What areas of operations research have made a significant impact on decision-making?  
(b) What is the role of operations research in decision-making? Explain the scope and methodology of operations research based on the scientific method analysis. Discuss.
- 3 (a) Define linear programming. What are its applications and limitations?  
(b) Solve the following LPP's graphically  
Maximize  $z = 4x_1 + 80x_2$ ,  
subjected to constraints  $5x_1 + 20x_2 \leq 400$   
 $10x_1 + 15x_2 \leq 450$   
 $x_1, x_2 \geq 0$ .
- 4 Determine an initial basic feasible(IFS) solution to the following T.P using  
(a) North-west corner rule, and  
(b) Vogel's method.

		Destination					Supply
		A <sub>1</sub>	B <sub>1</sub>	C <sub>1</sub>	D <sub>1</sub>	E <sub>1</sub>	
Origin	A	2	11	10	3	7	4
	B	1	4	7	2	1	8
	C	3	9	4	8	12	9
Demand		3	3	4	5	6	21

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- 5 (a) Describe the maximini principle of game theory. What do you understand by pure strategies and saddle point.  
(b) Explain the “best strategy” on the basis of minimax criterion of optimalities.
- 6 (a) What is queueing problem? Explain queueing system, transient and steady state.  
(b) Describe the fundamental components of a queueing process and give suitable examples.
- 7 Explain the types of simulation. Discuss clearly the various costs that are involved in inventory problems with suitable examples. How they are inter-related?
- 8 (a) Write the differences between CPM and PERT.  
(b) Let the value of money be assumed to be 10% per year and suppose that machine A is replaced after every 3 years where as machine B is replaced after six years. The yearly costs of both the machines are given as under.

Year	1	2	3	4	5	6
Machine 'A'	1,000	200	400	1,000	200	400
Machine 'B'	1,700	100	200	300	400	500

Determine which machine should be purchased.

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