

CODE NO: R5-12003/MBA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

MBA-II Semester Supplementary Examinations February -2010

QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS

Time:3hours

Max.Marks:60

Answer any Five questions  
All questions carry equal marks

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- (a) List and explain various characteristics of operations research  
(b) What is dynamic programming and what sort of problems can be solved by it? State Bellman's principle of opportunity and explain it holds?
- (a) What is decision making?. Explain and differentiate this under the conditions of certainty and uncertainty  
(b) Explain with suitable examples the maximin, the minimax and the regret criteria in decision making.
- (a) Describe the revised simplex procedure for solving a LPP  
(b) Describe the role of duality for sensitivity analysis of a linear programming problem
- Solve the following transportation problem where cell entries are unit costs.

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>	Available
O <sub>1</sub>	68	35	4	74	15	18
O <sub>2</sub>	57	88	91	3	8	17
O <sub>3</sub>	91	60	75	45	60	19
O <sub>4</sub>	52	53	24	7	82	13
O <sub>5</sub>	51	18	82	13	7	15
Required	16	18	20	14	14	82/82

- (a) List out characteristics of games  
(b) Find the ranges of values of p and q which will render the entry (2,2) a saddle point for the game

		Player B		
		B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>
Player A	A <sub>1</sub>	2	4	5
	A <sub>2</sub>	10	7	q
	A <sub>3</sub>	4	P	6

CONT...2

6. (a) Enumerate classification of queuing models along with assumptions  
(b) A self service store employees one cashier at its counter. Nine customers arrive on an average every 5 minutes while the cashier can serve 10 customers in 5 minutes. Assuming Poisson distribution for arrival rate and exponent distribution for service time, find the following
  - (i) Average number of customers in the system
  - (ii) Average number of customers in the queue or average queue length
  - (iii) Average time a customer spends in the system
  - (iv) Average time a customer waits before being served.
7. (a) Define simulation and explain components of simulation model  
(b) List out various advantages and disadvantages of simulation
8. State the requirements for the application of PERT technique and practical limitations of using PERT. How does PERT differ from CPM.

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