R09

Code No: E5205

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MBA – II Semester Examinations, February / March -2012
QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS

Time: 3hours   Max. Marks: 60

Answer any <u>five</u> questions
All questions carry equal marks
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1. Discuss various models of operations research in practice and their relevance to the Management.

2. Write the dual programme for the following LPP and solve it for its optimality.
   Maximise $Z = 30x_1 + 20x_2$
   Subject to the constraints
   $$2 x_1 + 3 x_2 \leq 45$$
   $$4 x_1 + 5 x_2 \leq 85$$
   $$x_1, x_2 \geq 0$$

3. Consider the following transportation problem whose cost matrix with availability and requirement at each plant and warehouse respectively.

Plants	Warehouses			Supply
	W1	W2	W3	
P1	5	1	7	50
P2	6	4	6	80
P3	3	2	5	15
Demand	75	20	50	

   Determine the optimal transportation schedule to minimize the cost.

4. a) Discuss the limitations of game theory.
   b) Solve the following game by using the graphic method.

Player A	Player B			
	B1	B2	B3	B4
A1	2	2	3	-2
A2	4	3	2	6

5. The demand pattern of the cakes made in a bakery is as follows:

No. of cakes demanded	0	1	2	3	4	5
Probability	0.05	0.1	0.25	0.30	0.20	0.10

   If the preparation cost is Rs.2 per unit and selling price is Rs.4 per unit, how many should the baker make to maximize his profits?

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::2::

6. Write an overview on replacement by describing some important situations.

7. A road transport company has one reservation clerk on duty at a time. She handles information of bus schedules makes reservation. Customers arrive at a rate of 8 per hour and the clerk can service 12 customers on an average per hour. After starting your assumptions, answer the following.

   i) What is the average no. of customers waiting for the service?
   ii) What is the average time a customer has to wait before getting service?
   iii) What is the average time that a customer will spend in the system?
   iv) What is the average no. of customers in the waiting in the system?

8. Write a brief note on the following
    a) Steps in simulation process
    b) Characteristics of a queuing model

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