First Year MHA Degree Supplementary Examinations, April 2013

PAPER VI - OPERATIONS RESEARCH

Time: 3 Hours   **Max Marks: 100**

- **Answer all the questions**
- *Draw diagrams wherever necessary*

Essays: **(2x20=40)**

1. Define operations research. What are the characteristics and limitations of operations research

2. Solve the following LPP

   Maximize $Z = X_1 + 9X_2 + X_3$

   Subject to : $X_1 + 2X_2 + 3X_3 \leq 9$

   $3X_1 + 2X_2 + 2X_3 \leq 15$

   $X_1, X_2, X_3 \geq 0$

Short Essays: **(2x10=20)**

3. Obtain initial basic feasible solution by Voggel's approximation method transportation problem with cost coefficients demands and supplier as given in the following table.

		Destination			
		A	B	C	Supply
Sources	I	6	8	4	14
	II	4	9	8	12
	III	1	2	6	5
Demand		6	10	15	

4. Explain methodology developed for simulation process

Short notes: **(8x5=40)**

5. Discuss different models available in operations research

6. Explain LPP giving two examples.

7. What is routing problem in assignment problem-Explain.

8. Application and limitations of queuing theory

9. Basic differences between PERT and CPM

10. Briefly describe characteristics of competitive game.

11. Explain group replacement policy.

12. Explain maximin – minimax principle.