

S.D.E.

M.B.A. SEM-III (2013 COURSE) : WINTER - 2017  
SUBJECT: OPERATIONS RESEARCH

Day: Tuesday  
Date: 26/12/2017

Time: 10.00 A.M. TO 1.00 P.M.  
Max. Marks: 70

W-2017-4201

N.B:

- 1) Attempt ANY THREE questions from Section-I and attempt ANY TWO questions from Section-II.
- 2) Answers to both the sections should be written in the SEPARATE answer books.
- 3) Figures to the right indicate FULL marks.
- 4) Use of Non-Programmable Calculator is allowed.
- 5) Graph papers and statistical tables will be provided if necessary.

SECTION-I

- Q.1 What is a critical path? Why is it so important in scheduling and controlling large projects? (14)
- Q.2 Explain Monte Carlo Simulation Technique. (14)
- Q.3 What is Assignment Problem? Explain applications of Assignment Problem. (14)
- Q.4 Discuss applications and limitations of Linear Programming Problem. (14)
- Q.5 Write short notes on ANY TWO of the following: (14)
- a) Limitations of Operations Research
  - b) Applications and Limitations of Transportation Problem
  - c) Components of LPP
  - d) Hungarian method

SECTION-II

- Q.6 Discuss the significance and scope of Operations Research in decision making with special reference to Health Care Administration. (14)
- Q.7 Find the initial basic feasible solution of the following transportation problem by Vogel's Approximation Method. (14)

		Warehouse				Capacity
		W <sub>1</sub>	W <sub>2</sub>	W <sub>3</sub>	W <sub>4</sub>	
Factory	F <sub>1</sub>	19	30	50	10	7
	F <sub>2</sub>	70	30	40	60	9
	F <sub>3</sub>	40	8	70	20	18
	Requirement	5	8	7	14	34 (Total)

- Q.8 Solve the following Linear Programming Problem graphically: (14)

$$\text{Max. } Z = 8000x_1 + 7000x_2$$

$$\text{Subject to } 3x_1 + x_2 \leq 66$$

$$x_1 + x_2 \leq 45$$

$$x_1 \leq 20$$

$$x_2 \leq 40$$

$$\text{and } x_1, x_2 \geq 0$$

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