

**M.H.A. SEM-III (2012 COURSE) (CHOICE BASED CREDIT
SYSTEMS) : SUMMER - 2018
SUBJECT : OPERATIONS RESEARCH IN HOSPITAL**

Day : **Friday**
Date : **20/04/2018**

S-2018-1154

Time : **02.00 PM TO 05.00 PM**
Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION – I

- Q.1** Answer any **TWO** of the following questions: **(14)**
- a) What are the phases of operations research? Describe any two in details.
 - b) Describe the operating characteristics of Queuing System.
 - c) Explain the advantages and disadvantages of simulation.
- Q.2** Write short notes on any **FOUR** of the following: **(16)**
- a) Types of Operations Research
 - b) Operation Research tools
 - c) Linear programming problems
 - d) Graphical methods to solve LPP
 - e) Two phase method

SECTION – II

- Q.3** Answer any **TWO** of the following questions: **(14)**
- a) Find initial feasible solution to the transportation problem (using any method)

Cost Matrix

	Warehouse 1	Warehouse 1	Warehouse 1	Demand
Shop 1	6	2	2	120
Shop 2	1	7	1	200
Shop 3	2	3	5	125
Supply	100	225	105	

Observe that above problem is not balanced. Use appropriate formulation to convert it to balanced problem before finding the initial solution.

- b) Explain the steps in solving a LP problem with only two activities, on a graph paper, use the following example to illustrate.
Obj fun $3X+4Y$ (Minimize)
 $X \geq 0, Y \geq 0$
 $X+Y \leq 10$
 $.2X+Y \leq 16$
- c) Solve the following assignment problem.

Efficiency Matrix

	J1	J2	J3
P1	0.8	0.6	0.6
P2	0.4	0.5	0.4
P3	0.7	0.7	0.9

- Q.4** Write short notes on any **FOUR** of the following: **(16)**
- a) Poisson distribution
 - b) Dependency of activities
 - c) Sensitivity Analysis of LP
 - d) NW corner method
 - e) Difference between PERT and CPM

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