QP Code:129380 **Reg. No.:……**

First Year MHA Degree Regular/Supplementary Examinations August 2024
Operations Research
(Common for 2013 and 2016 Scheme)

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

- ***Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space***
- ***Answer all parts of a single question together • Leave sufficient space between answers***
- ***Draw table/diagrams/flow charts wherever necessary • Ordinary calculator can be used***

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

1. Solve the following LPP graphically

Maximize $Z = 6x + 2y$

Subject to the constraints

$3x + y \leq 48$

$3x + 4y \leq 120$

$3x + y \geq 36$

$X \geq 0, \quad y \geq 0$

2. The following table gives the activities in Hospital construction project and their respective duration.
   (i) Draw the network
   (ii) Find the critical path and duration of the project.

Activity	1-2	1-4	1-5	2-3	4-7	4-6	5-6	3-8	7-8	6-9	8-9
Duration	4	3	3	5	5	8	5	3	6	7	4

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

3. Discuss the significance and scope of OR in modern management
4. What is Transportation Problem. Discuss the application of TP to managerial decision making

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

5. Write at least five application areas of linear programming
6. Explain Vogel's approximation method of obtaining initial feasible solution while solving Transportation Problem
7. What is Assignment Problem. Discuss the application of AP in Hospital management
8. What do you mean by strategy, dominance and saddle point
9. Explain various measures of M/M/1 Model
10. Explain how the theory of replacement is used in replacement of items
11. What is simulation. Describe the simulation process
12. What is meant by inventory. Mention the various types of inventory

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