First Year MHA Degree Regular/Supplementary Examinations
November 2020
Operations Research

(2013 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. Operation research is a scientific approach to problem solving – Discuss
2. Explain graphical method of solving an LPP
   Solve the following LPP
   Minimize: Z=40x+24y
   Subject to: 20x+50y ≥ 4,800, 80x+50y ≥ 7,200 and x,y ≥ 0

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

3. State the rules for drawing an arrow diagram with particular reference to project scheduling and critical path method with illustrations
4. The initial cost of an item is Rs.15, 000 and maintenance. and running cost (in Rs) for different year are given below.

Year	1	2	3	4	5	6	7
Running cost	2500	3000	4000	5000	6500	8000	10000

What is the replacement policy to be adopted if the capital worth is 10% & there is no salvage value.

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

5. Discuss in brief, replacement procedure for the items that deteriorate with time.

6. The application of Queuing theory in hospital

7. Define surplus and slack variables, pure strategy, mixed strategy

8. Explain the optimum order quantity model

9. Monte Carlo simulation model

10. List the different approaches in solving transportation assignment problem

11. Discuss briefly decision making environment

12. 'Simulation technique'

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