First Year MHA Degree Examinations September 2018

Operations Research

(2013 Scheme)

Time: 3 Hours   Max Marks: 100

- **Answer all the questions**
- *Ordinary calculator can be used*

Essays: (2x20=40)

1. "Solve the following transportation problem"

   D1 D2 D3 D4 Availability

   O1 6 4 1 5 14
   O2 8 9 2 7 16   Requirement 6 10 15 4
   O3 4 3 6 2 5

2. Schedule the jobs and to prepare Gantt Task Chart . Make Span Chart has to be changed as Schedule the jobs using sequencing method and prepare Chart.".   (2x10=20)

3. A firm is considering placement of a machine whose cost price is Rs. 13,200 and the scrap value id Rs. 300. The running costs are found for the past experience to be as follows:

Year	1	2	3	4	5	6	7	8
Running Costs (Rs.)	300	600	900	1300	1900	2600	3300	4100

   When should the machine be replaced

4. How do we determine the optional order quantity

Short notes: (8x5=40)

5. Steps in Hungarian assignment method.
6. Three time estimates are given for each activity of following project

Activity	Optimistic (a)	Most likely (m)	Pessimistic (b)
1-2	6	6	24
1-3	6	12	18
1-4	12	12	30
2-5	6	6	6
3-5	12	30	48
4-6	12	30	42
5-6	18	30	54

   - Draw network diagram and find total project completion time.
   - Explain steps involved in critical path method
7. Two person zero sum game.
8. Simulation.
9. What is the importance of Poisson and exponential distribution in queuing theory.
10. Characteristics of operation research
11. ABC analysis.
12. Steps in PERT planning.

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