MB116D

Sl. No.

III Semester M.B.A. Degree Examination, May/June - 2026

MANAGEMENT (Operations)

Operations Research and Analytics

(Non-CBCS Scheme) (Elective-D)

Time : 3 Hours **Maximum Marks : 80**

SECTION - A

Answer any Five sub-questions. Each sub question carries Three marks. (5×3=15)

1. a) What is Feasible Solution?

b) What is idle time?

c) What are the types of machine failures?

d) Define a transhipment problem.

e) Define simulation.

f) What is KDD in data mining?

g) What is healthcare analysis?

SECTION - B

Answer any Four questions. Each question carries Five marks. (4×5=20)

2. Explain the methods of obtaining initial feasible solution.

3. A company wishes to assign 3 jobs of different machines in such a way that each job is assigned of some machine. The cost of assigning jobs to machine is gives as below.

	M	N	O	P
a	8	7	6	5
b	5	6	8	7
c	6	8	7	8

4. Explain the application of statistical techniques.

5. State the assumptions in Markov Analysis.

6. Explain Predictive Analysis.

7. What are the advantages of Big Data Analytics?

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SECTION - C

Answer any Three questions. Each question carries Ten marks. (3×10=30)

8. There are five jobs which must go through two machines A and B. The processing time in (hr) for each job on each machine is given in the following table.

Job	1	2	3	4	5
Machine A1	5	1	9	3	10
Machine B1	2	6	7	8	4

9. Discuss the features of travelling salesment problem. How it is different from assignment problem?

10. Develop control limits for the date given below

Samples	1	2	3	4	5	6	7	8	9
No. of defectives	5	7	9	11	15	8	2	1	0

11. Differentiate between descriptive analytics and prescriptive analytics.

12. Explain the application of business analytics in the areas of retail and finance.

SECTION - D

(Compulsory)

13. Case Study. **(1×15=15)**

M/S Thermo heaters are the manufacturer's of water heaters for both domestic and commercial application. The company wants to keep stock of the product to meet customer demand and also not to overstock as inventory stock becomes higher. The company's past demand record is indicates below.

Using random No. given below simulate the demand for next 15 weeks and find the average demand per week for the simulation period.

Random Numbers

22 19 16 78 03 93 78 23 15 58

Sales record is indicated as below

Demand	**No. of days**	**Prob**
5	4	0.02
6	10	0.05
7	16	0.08
8	50	0.25
9	62	0.31
10	38	0.19
11	12	0.06
12	8	0.04

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