MBSC-3.1D

Sl.No. : **Total No. of Pages : 2**

Third Semester M.B.A. Degree Examination, February - 2024
(CBCS) (SLM Scheme)
MANAGEMENT (Operations)
Operation Research and Analytics

Time : 3 Hours **Max. Marks : 80**

SECTION - A

Answer any five questions. Each question carries five Marks. [5 × 5 = 25]

Q1) What is operation research? State its objectives.

Q2) Explain the concept of Duality in LLP.

Q3) Discuss the objectives of simulation technique.

Q4) What are the various sources of data collection? Explain.

Q5) Mention the uses of excel sheet to analyse the data.

Q6) Write a note on cluster analysis.

Q7) Explain the types of data mining.

SECTION - B

Answer any four questions. Each question carries ten marks. [4 × 10 = 40]

Q8) Discuss the various techniques of operations research.

Q9) Solve the following linear programming problem by dynamic programming approach.

Maximize $Z = 2X_1 + 5X_2$

Subject to the constraints

$2X_1 + X_2 \leq 43$

$2X_2 \leq 46$

$X_1 \geq 0, X_2 \geq 0$

Q10) Discuss the advantages and disadvantages of simulation technique

Q11) Describe the techniques of statistical quality control

Q12) Explain the importance of Big data management

Q13) Discuss the various application of business analysis.

SECTION - C

Q14) Case Study (Compulsory) **[1 × 15 = 15]**

Six jobs go first over Machine-I and then over Machine-II. The orders of completion of jobs have no significance. The following gives the machine times in hours for six jobs and the two machines.

Job	1	2	3	4	5	6
Machine 1	5	9	4	7	8	6
Machine 2	7	4	8	3	9	5

Find the Optimal total time and the idle times of the machine