JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

M.Tech-I Semester (DS)

COURSE CODE (CREDITS): 22M1WCI136 (3) MAX. MARKS: 15

COURSE NAME: DATA VISUALIZATION

COURSE INSTRUCTOR: PROF. VIVEK KUMAR SEHGAL MAX. TIME: 1 Hour

Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Use of calculator is not allowed

Q.No	Question	CO	Marks
Q1	(a)Define data visualization. Explain the importance of data visualization in converting complex datasets into meaningful and easily understandable information. (b) Explain the role of data visualization in Data Science. How does visualization help in identifying patterns, trends, relationships, and outliers during data analysis?	CO-1	3
Q2	Write a NumPy program to create two 3×3 matrices and perform addition, subtraction, element-wise multiplication, and matrix multiplication on them.	CO-1	3
Q3	Create or load a Pandas DataFrame containing some missing values. Write a program to identify the missing values and handle them by replacing numerical missing values with the mean of the respective column.	CO-1,2	3
Q4	A dataset contains the hours studied and marks obtained by students. Create a scatter plot to visualize the relationship between the two variables. Determine whether there appears to be a positive, negative, or no correlation.	CO-2	3
Q5	Create an R data frame containing student name, department, and marks for 10 students. Write a program to display students who scored more than 75 marks and calculate the average marks of the selected students.	CO-2	3