

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B. Tech Mid Semester Exam**

Semester: 5<sup>th</sup>

Subject Code: 303105314

Subject Name: Data Analytics and Data Visualization

Date: (21/08/2024)

Time: (1hr: 30 min)

Total Marks: 40

Sr. No.	All questions are compulsory	Marks
Q.1	(A) Give the One-line Answers. i What is the primary purpose of data visualization? ii Which Python library is commonly used for data manipulation? iii Name one popular tool for data visualization. iv What does ETL stand for in data analytics? v What is the purpose of a confidence interval?	05
	(B) Five Fill in the blanks i The difference between the highest and lowest values in a data set is called the.....? ii To define a function in Python, the keyword .....is used. iii Full form of NumPy.....? iv The ..... phase involves collecting and compiling data from various sources. v In data analysis,..... is the process of dividing data into training and testing sets to evaluate model performance.	05
Q.2	Attempt any four (Short Questions) (1) What are the key elements involved in data analytics? (2) What are central tendency and dispersion, and why are they important in data analysis? (3) What is the concept of population variance, and how does it differ from sample variance? (4) What is a confidence interval, and how is it used in statistical analysis? (5) Difference between Pandas and NumPy Library in Python.	12
Q.3	Attempt any two questions (1) What is data, and why is it considered important for organizations? (2) Find the Interquartile range, quartile deviation and coefficient of quartile deviation: 28, 18, 20, 24, 27, 30, 15 (3) Calculate the standard deviation of the following data: 16, 20, 18, 19, 20, 20, 28, 17, 22, 20	08
Q.4	(A) Compulsory (A) What are the key differences between a data analyst and a data scientist in terms of skills, responsibilities, and the types of problems they solve? (B) Why is Python considered a significant tool for data analysis and data science? <b>OR</b> (B) How is Overfitting different from Underfitting?	05