

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V EXAMINATION – SUMMER 2025****Subject Code:3151608****Date:22-05-2025****Subject Name:Data Science****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) State difference between structure data and unstructured data.	03
	(b) State difference between sample and population.	04
	(c) What is analytics? Where it is applied? Which are three components of	07
Q.2	(a) Define mean, median and mode using example.	03
	(b) Define Decile using example.	04
	(c) Draw histogram for following data. 10 10 12 12 13 14 15 17 19 19 20 20 21 25 25 27 27 28 31 35	07
	OR	
	(c) Draw and explain box plot for following data. 11 14 17 18 19 21 23 24 25 27 90 140	07
Q.3	(a) Explain chebyshev theorem with example.	03
	(b) Define skewness and kurtosis.	04
	(c) Explain various components of bayes theorem.	07
	OR	
Q.3	(a) Define degree of freedom with example.	03
	(b) What is probability mass function ? Define pdf and cdf for continuous random variable.	04
	(c) What is Bionomial distribution? Define cdf,mean and variance of Bionomial distribution.	07
Q.4	(a) What is normal distribution and standard normal distribution.	03
	(b) Explain chi square distribution.	04
	(c) What is sampling distribution and sampling mean.	07
	OR	
Q.4	(a) Explain random sampling.	03
	(b) Differentiate stratified and cluster sampling.	04
	(c) Explain CLT(Central limit theorem).	07
Q.5	(a) What is dependent and independent variable.	03
	(b) What is difference between correlation and regression.	04
	(c) What is linear regression? Explain with example.	07
	OR	
Q.5	(a) Explain random forest.	03
	(b) Explain logistic regression using example.	04
	(c) Explian decision tree construction.	07
