Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
Bachelor of Engineering - SEMESTER - IV EXAMINATION - WINTER 2025

Subject Code: 3144301   **Date: 15-11-2025**

Subject Name: Data Science for Humanity

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)**	What is analytics? Where it is applied?	**03**
	(b)	Which are three components of analytics?	**04**
	(c)	Differentiate cross sectional data, time series data and panel data with example.	**07**
Q.2	**(a)**	Explain various measurement of central tendency.	**03**
	(b)	Explain chebyshev theorem with example.	**04**
	(c)	For following data calculate mean,median,mode,decile(D4 & D8) and percentile(P10& P70) and quartile. 11 14 17 18 19 21 23 24 25 27 29 32 32 46 48 49 51 55 57 60	**07**

<div align="center">OR</div>

			Marks
	(c)	Draw histogram for following data. 110 110 112 113 113 114 115 117 119 119 120 120 125 123 125 127 127 128 131 132	**07**
Q.3	**(a)**	What is difference between Decile and Percentile?	**03**
	(b)	Draw various type of Kurtosis diagrams.	**04**
	(c)	How Box plot is used to detect outliers? Explain with example.	**07**

<div align="center">OR</div>

			Marks
	(a)	What is degree of freedom?	**03**
	(b)	Draw various type skewness diagrams.	**04**
	(c)	Draw and explain box plot for following data with Q1,Q3 and IQR value calculation. 10 15 17 18 19 22 23 24 25 27 90 150	**07**
Q.4	**(a)**	Differentiate normal distribution with standard normal distribution.	**03**
	(b)	Where and why poision distribution used ? Explain with example.	**04**
	(c)	Explain bayes theorem with example.	**07**

<div align="center">OR</div>

	(a)	Differentiate CDF and PDF.	**03**
	(b)	Where and why geometric distribution used? Explain with example?	**04**
	(c)	Explain use of association rule with example.	**07**
Q.5	**(a)**	Differentiate linear regression with logistic regression.	**03**
	(b)	Explain decision tree with example.	**04**
	(c)	Explain role of data science in Healthcare? Which kind of analysis we can do to provide efficient service to patient?	**07**

OR

	(a)	Differentiate dependent variable with independent variable.	**03**
	(b)	Explain maximum like hood estimation using example.	**04**
	(c)	How data science is useful in Education system? Which kind of analysis we can do at college level and state level to enhance education level.	**07**

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