

GUJARAT TECHNOLOGICAL UNIVERSITY

BE MINOR- SEMESTER-V EXAMINATION – WINTER 2025

Subject Code:115AG01

Date:06-12-2025

Subject Name:Introduction to Data Analytics

Time:10:30 AM TO 01:00 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 do you mean by “Data Science”? List out the sectors in which Data Science is used.	03
	(b) Explain the process of Data Analytics in brief.	04
	(c) Write a Python programming to create a pie chart of the popularity of programming Languages.	07
Q.2	(a) What is the importance of Data Cleaning?	03
	(b) Differentiate: Feature Engineering vs. Feature Selection	04
	(c) How to handle missing values in the process of EDA? Explain with a example.	07
	OR	
	(c) What do you mean by Exploratory Data Analysis (EDA)? What is the importance of EDA in data analytics? What are the goals of EDA?	07
Q.3	(a) What are some common ways to gather domain knowledge?	03
	(b) Differentiate between Hyperplane Vector and Support Vectors according to SVM algorithm.	04
	(c) Explain Feature Selection Techniques.	07
	OR	
Q.3	(a) What are some different techniques for dealing with categorical variables?	03
	(b) What is Support Vector Machines? Explain its type.	04
	(c) What are some common Machine Learning problems that Unsupervised Learning can help with?	07
Q.4	(a) Write a Python program to draw a scatter plot using random distributions to generate balls of different sizes.	03
	(b) What are the advantages and benefits of good data Visualization?	04
	(c) Compare Seaborn and matplotlib. What are features of seaborn for visualization of data.	07
	OR	
Q.4	(a) Plot line graph with multiple lines with label and legend for the following values: Rice: [5, 15] Oil: [3, 6] Wheat: [8.0010, 14.2] Coffee: [1.95412, 6.98547, 5.41411, 5.99, 7.9999]	03
	(b) List out the tools used for reporting and visualization. Explain any one of them.	04
	(c) How to achieve Three-Dimensional Plotting using Matplotlib? Explain with example.	07

- Q.5** (a) List out the advantages of visual data exploration. Explain in brief. **03**
(b) What are next gen data scientists? Write their role for the same. **04**
(c) Write short notes on “Ethical Issues of Data Science”. **07**
- OR**
- Q.5** (a) Why data visualization is important for any career? **03**
(b) Write the benefits of ethical challenges in data science. **04**
(c) List out the Major Applications of Data Science. Explain any two of them. **07**