R22 Regulation *Subject code:4P7HA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VII Semester Regular Examinations, November 2025

EXPLORATORY DATA ANALYSIS

(CSE(DS))

Maximum Marks: 60 Date: 01.12.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X1M=10 Marks)		Marks	CO	Bloom Tx
1.a)	Define the term Epicycles of Analysis.	1M	1	L1
b)	What are the main steps in the Epicycle of Analysis?	1M	1	L1
c)	Define an analytical Question.	1M	2	L1
d)	List two type of questions used in data analysis.	1M	2	L1
e)	Define Exploratory Data Analysis.	1M	3	L1
f)	What is the first step in the EDA process.	1M	3	L1
g)	Define a data model.	1M	4	L1
h)	What is meant by models as expectations.	1M	4	L1
i)	What is the main goal of formal modeling?	1M	5	L1
j)	State one limitation of formal modeling.	1M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx
2	Define the Epicycle of Analysis and explain its major components with the help of a diagram or example.	10M	1	L1
	OR			
3	Illustrate step by step the process Applying the Epicycle of Analysis process.	10M	1	L2
4	Explain the various types of questions used in data analysis and discuss how each guides the analytical approach.	10M	2	L2
	OR			
5	List the Explain Stating and Refining the Question: i). Characteristics of good Question. ii). Case Study.	10M	2	L1
6	Demonstrate how to inspect the Top and the Bottom of your Dataset using Python functions such as head() and tail(). Explain why this step is crucial in data exploration.	10M	3	L2

	OR			
7	Evaluate the importance of checking packages and dependencies before performing data analysis. What problems might occur if this step is omitted?	10M	3	L5
8	Compare theoretical expectations of a Model with real- world data outcomes and discuss deviations.	10M	4	L2
	OR			
9	Construct a simple linear model and explain how slope and intercept describe relationships between variables.	10M	4	L3
10	Describe the General Framework of formal modeling and illustrate its major components with suitable examples.	10M	5	L4
	OR			
11	Interpret the role of Prediction Analyses in formal modeling and explain how predictive models are validated.	10M	5	L2