R20 Regulation *Subject code..3E8HA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VIII Semester Supplementary Examinations, November 2025

DATA SCIENCE

(CSE(DS))

Maximum Marks: 70 Date: 25.11.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
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 (10X2M=20 Marks)		Marks	CO	Bloom Tx
1	Define Data Science and list its applications.	2M	1	Remember
2	What are the key properties of data in data science context?	2M	1	Understand
3	Explain Z-scores in normalization.	2M	2	Understand
4	What is the importance of sampling in statistical analysis?	2M	2	Understand
5	What is regularization in regression models?	2M	3	Understand
6	Differentiate between linear and logistic regression.	2M	3	Understand
7	What is PageRank and how is it used in ranking?	2M	4	Understand
8	Define ensemble learning and list its types.	2M	4	Remember
9	Define Big Data and list challenges associated with it.	2M	5	Remember
10	What is the role of MapReduce in Big Data processing?	2M	5	Understand
	Part-B			
Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx
11	a) Describe the difference between Computer Science, Data Science, and Real Science. b) Explain the role of asking interesting questions in data analysis.	5M 5M	1	Understand Understand
	OR			
12	Describe the concept of classification and regression with suitable examples.	10M	1	Understand
13	a) Describe various scoring systems and how BMI is used in data scoring. b) Explain Arrow's Impossibility Theorem with an example.	5M 5M	2	Understand
	OR			
14	Explain Exploratory Data Analysis and how visualization enhances understanding of data.	10M	2	Understand
15	a) Describe the taxonomy of models used in data science. b) Explain how regularization simplifies models.	5M 5M	3	Understand
	OR			

16	Compare and contrast linear regression and logistic regression with examples.	10M	3	Understand
17	a) Describe nearest neighbor classification with an example. b) Explain the concepts of clustering and its importance in data science.	5M 5M	4	Understand
	OR			
18	Describe Decision Tree Classifiers and Ensemble Learning with examples.	10M	4	Understand
19	a) What are the algorithmic techniques used in Big Data? b) Discuss societal and ethical implications of data science.	5M 5M	5	Understand
	OR			
20	Explain the role of parallelism and MapReduce in achieving scale in Big Data.	10M	5	Understand