Reg. No.												

Question Paper Code	12282

B.E./B.Tech - DEGREE EXAMINATIONS, NOV / DEC 2023

Seventh Semester

Information Technology

20ITPC702 - DATA SCIENCE WITH MACHINE LEARNING

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level,CO
1.	Express how Data Science is related to Machine Learning.	*2,K1,CO1*
2.	List out some python libraries used for Data Science.	*2,K1,CO1*
3.	Define R programming.	*2,K2,CO2*
4.	Differentiate between Scalars, Vector, list, Matrix and Data frame.	*2,K2,CO2*
5.	Mention the various classification techniques in Machine Learning.	*2,K1,CO3*
6.	List out the algorithms in decision tree induction method.	*2,K1,CO3*
7.	Define Euclidean distance with an example.	*2,K1,CO4*
8.	What is partitional clustering?	*2,K2,CO4*
9.	Define pruning.	*2,K2,CO5*
10.	Differentiate between Supervised, Unsupervised and Reinforcement Learning.	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explore the Key component technologies of data science.	*13,K2,CO1*
		OR	
	b)	Compare and contrast various Programming languages for data science.	*13,K2,CO1*
12.	a)	Sketch out some popular repositories for R-Package	*13,K3,CO2*
		OR	
	b)	Create a simple data frame from 3 vectors. Order the entire data frame by the first column.	*13,K3,CO2*
13.	a)	Compare Simple Regression and Multiple linear Regressions with example.	*13,K3,CO3*
		OR	

b) Discuss in detail about decision tree induction method and its algorithms. *13,K3,CO3*

14. a) Discuss in detail about K-means algorithm in detail. *13,K4,CO4*

OR

b) Justify why cluster analysis is done on various types of data. Explain with suitable example. *13,K4,CO4*

15. a) Compare and contrast data space pruning and pattern space pruning with suitable examples. *13,K4,CO5*

OR

b) Describe the reinforcement learning explain its detailed concepts. *13,K4,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Illustrate Principal Component Analysis (PCA) method of dimensionality reduction technique with suitable example. *15,K3,CO6*

OR

b) Illustrate Linear Discriminant Analysis (LDA) method of dimensionality reduction technique with suitable example. *15,K3,CO6*