Reg. No.												

Question Paper Code	13782

M.E - DEGREE EXAMINATIONS, APRIL / MAY 2025

Second Semester

Big Data Analytics

24PBDEL201 - HIGH PERFORMANCE COMPUTING

Regulations - 2024

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	What is meant by Cloud Computing?	2	K1	CO1
2.	State the role of virtualization in cloud computing infrastructure.	2	K1	CO1
3.	State an Application of FC-SAN.	2	K1	CO2
4.	Name any two challenges in designing a network for high-performance BDA.	2	K2	CO2
5.	Write short notes on Database analytics.	2	K1	CO3
6.	Define Massive Online Analysis.	2	K1	CO3
7.	Differentiate authentication and authorization.	2	K2	CO4
8.	List some commonly used clustering algorithms.	2	K1	CO4
9.	Write short notes on Support Vector Machine Algorithm.	2	K1	CO5
10.	Define k-means clustering, and why is it computationally expensive?	2	K2	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a) (i)	Illustrate in detail about grid computing.	6	K2	CO1
	(ii)	Elaborate in detail about Cluster computing.	7	K2	CO1
		OR			
	b)	Explain the working of the following phases of Map Reduce with one common example. (i) Map Phase (ii) Shuffle and sort phase (iii) Reducer Phase	13	K2	CO1
12.	a)	Find the different file systems used in cloud environments. Explain in detail about the file systems used by GFS and Amazon S3.	13	K3	CO2
		OR			
	b) (i)	Explain in detail about Network Virtualization.	6	K3	CO2
	(ii)	Write the functional Modules of GFS.	7	K3	CO2

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

13.	a)	Discuss MOA (Massive Online Analysis), its architecture, features, and applications in real-time data processing.	*13*	*K2*	*CO3*
		OR			
	b)	Compare In Database Analytics with In Memory Analytics.	*13*	*K2*	*CO3*
14.	a)	Describe the security architecture design of IOT and brief about their challenges and solutions.	*13*	*K2*	*CO4*
		OR			
	b)	Determine how clustering techniques are applied in real-time big data analytics with a case study.	*13*	*K2*	*CO4*
15.	a)	Explain how clustering techniques are applied in real-time big data analytics with a case study.	*13*	*K2*	*CO5*
		OR			
	b)	Illustrate in details about Binary Classification.	*13*	*K2*	*CO5*

PART - C (1× 15 = 15 Marks)

16.	a)	Describe the Hadoop Distributed File System (HDFS) and explain how it ensures fault tolerance and reliability.	*15*	*K2*	*CO1*
		OR			
	b)	Explain the role of supercomputers in Big Data Analytics (BDA). How do they handle large-scale data processing efficiently?	*15*	*K2*	*CO1*