Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 60001

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2025
Seventh Semester
Information Technology
U19IT724 – BIG DATA ANALYTICS
(Regulation 2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Illustrate the need to promote the value of Big Data.	2	K2	CO1
2.	Describe the significance of Big Data analytics.	2	K2	CO1
3.	List down the main advantages of using scheme-less databases.	2	K1	CO2
4.	Distinguish RDBMS and Hadoop.	2	K1	CO2
5.	Summarize the key characteristics of the data model in Cassandra.	2	K1	CO3
6.	List out the various data types in MongoDB.	2	K1	CO3
7.	Outline the various stages of map reduce programming.	2	K1	CO4
8.	Delineate the types of user defined functions in Hive.	2	K1	CO4
9.	Identify the ways in which pig programs can be executed.	2	K2	CO5
10.	Justify the reason for why HDFS is preferred to RDBMS.	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Delineate the characteristics and need of Big Data and elaborate the greatest challenges that prevent business from capitalizing on Big Data .	13	K1	CO1
		(OR)			
	b)	Explain in detail about various Big Data analytic tools with suitable examples.	13	K1	CO1

12.	a)	i.	Expound the Hadoop architecture with a neat diagram	6	K1	CO2
		ii.	Elaborate the impact of seamless Hadoop integration on enhancing data processing and analytics.	7	K2	
			(OR)			
	b)	i.	Interpret the architecture of YARN and its significance in the Hadoop eco system.	8	K2	CO2
		ii.	Describe how Map Reduce jobs runs on YARN with examples.	5	K2	
13.	a)		Elucidate the architecture of MongoDB and list the salient features of it. Also outline the advantages of BSON over JSON in MongoDB with suitable examples.	13	K2	CO3
			(OR)			
	b)		With appropriate examples, expound the Cassandra CRUD operations.	13	K2	CO3
14.	a)		How will you query the data in HIVE? Illustrate with data definition, data manipulation and data selection queries with appropriate examples.	13	K2	CO4
			(OR)			
	b)		Explain in detail about messaging queues on asynchronous event driven development mechanisms.	13	K1	CO4
15.	a)		Describe Pig. Outline its installation process and also elaborate the various pig data models with suitable examples.	13	K2	CO5
			(OR)			
	b)		Elucidate the complex design principles and architecture of the HDFS to comprehend its functions and components.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.			Questions	Marks	KL	CO
16.	a)		Write down and elaborate Map Reduce workflow for the following system:		K3	CO4
		i.	Find the maximum recorded temperature for every day of the year and every weather station.	8		
		ii.	Expound packaging, deployment and running for the above workflow job.	7		
			(OR)			
	b)		Provide a conclusion by presenting insights into the distinct factors that organizations should carefully evaluate when choosing between MongoDB and Cassandra to meet the specific requirements of their applications. Elucidate the same.	15	K2	CO3