

**BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)**

III - B.Tech II-Semester Regular Examinations (BR23), MAY - 2026

BIG DATA ANALYTICS (CSE-AI&DS & AI&ML)

Time: 3 hours

Max. Marks: 70

*Question Paper consists of Part-A and Part-B
Answer ALL the question in **Part-A and Part-B***

PART-A (10X2 = 20M)

	Marks	CO	BL
1. a) Define Map interface.	(2M)	CO1	BL1
b) What are generic classes?	(2M)	CO1	BL1
c) What is Google File System (GFS)?	(2M)	CO2	BL1
d) What is DataNode?	(2M)	CO2	BL1
e) What is MapReduce?	(2M)	CO3	BL1
f) What is Hadoop API?	(2M)	CO3	BL1
g) What are distinct elements in streams?	(2M)	CO4	BL1
h) What is Apache Spark?	(2M)	CO4	BL1
i) What is Apache Pig?	(2M)	CO5	BL1
j) What is Pig Latin?	(2M)	CO5	BL1

PART-B (5X10 = 50M)

2a. Explain Linked List, Stack, Queue with examples.	(5M)	CO1	BL2
b. Discuss Set and Map interfaces with implementations.	(5M)		BL2
(OR)			
3a. Explain implementation of generic types.	(5M)	CO1	BL2
b. Describe advantages of generics in Big Data applications.	(5M)		BL2
4a. Explain roles of NameNode and DataNode.	(5M)	CO2	BL2
b. Describe Hadoop cluster setup process.	(5M)		BL2
(OR)			
5a. Compare Local, Pseudo-distributed, Fully Distributed modes.	(5M)	CO2	BL2
b. Explain data storage and replication in HDFS.	(5M)		BL2
6a. Explain MapReduce framework with diagram.	(5M)	CO3	BL2
b. Describe Mapper and Reducer functions.	(5M)		BL2
(OR)			
7a. Compare old and new Hadoop APIs.	(5M)	CO3	BL2
b. Explain execution phases of MapReduce.	(5M)		BL2

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| 8a. | Explain stream data model and architecture. | (5M) | CO4 | BL2 |
| b. | Discuss stream computing with examples. | (5M) | | BL2 |
| (OR) | | | | |
| 9a. | Explain RDD concept and characteristics. | (5M) | CO4 | BL2 |
| b. | Explain Spark installation process. | (5M) | | BL2 |
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| 10a | Explain modes of running Pig scripts. | (5M) | CO5 | BL2 |
| b. | Discuss Pig script interfaces. | (5M) | | BL2 |
| (OR) | | | | |
| 11a | Illustrate how to create and manage databases in Hive. | (5M) | CO5 | BL3 |
| b. | Explain Hive QL queries with examples. | (5M) | | BL2 |
