

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER - III EXAMINATION - WINTER 2025

Subject Code: MC03094081

Date: 20-11-2025

Subject Name: Big Data Tools

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Use of simple calculators and non-programmable scientific calculators are permitted.**

	Marks
Q.1 (a) Why is Big Data important? What are the major challenges of Big Data? Explain each challenge in detail with examples. .	07
(b) Explain a Typical Hadoop Environment in detail with labeled diagram	07
Q.2 (a) What is NoSQL? Describe the types of NoSQL databases with suitable examples	07
(b) Differentiate between SQL and NoSQL databases based on structure, scalability, and performance	07
OR	
(b) What is Hadoop? Explain Hadoop Ecosystems in detail	07
Q.3 (a) Describe the features and key advantages of Hadoop over traditional systems.	07
(b) Explain HDFS in detail with a neat diagram.	07
OR	
(a) What is a MongoDB Query Language? Explain in detail.	07
(b) Discuss how MongoDB ensures high availability and performance through Replication and Sharding	07
Q.4 (a) What is MapReduce? Explain the functions of Map, Shuffle, Sort, and Reduce in the MapReduce framework.	07
(b) What is HIVE? Explain its architecture with a diagram.	07
OR	
(a) Explain the HIVE Query Language in detail	07
(b) What is Pig? Explain its architecture in detail	07
Q.5 (a) Explain User-Defined Functions in HIVE with a suitable example.	07
(b) What is SerDe in HIVE? Explain its role in data serialization and deserialization with examples	07

OR

- (a)** What is an RDD ? Explain its features, creation, and transformations with examples. **07**
- (b)** What is Apache Spark? Explain its architecture and major components in detail. **07**
