

Enrollment No./Seat No.:

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MCA INTEGRATED - SEMESTER - VIII EXAMINATION - SUMMER 2025**

**Subject Code: 2688601**

**Date: 29-05-2025**

**Subject Name: Big Data Analytics**

**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.**

	<b>Marks</b>
<b>Q.1 (a)</b> 1. Define Big Data and discuss the Four Vs associated with it. 2. What is Big Data Analytics? Outline the Big Data Analytics Life Cycle	<b>07</b>
<b>(b)</b> What is MapReduce? Explain working of various phases of MapReduce with word count example	<b>07</b>
<b>Q.2 (a) Difference Between</b> 1. NoSQL vs. SQL Vs. NewSQL 2. Hadoop Vs. RDBMS	<b>07</b>
<b>(b)</b> What is Apache Hadoop? Explain how its ecosystem operates.	<b>07</b>
<b>OR</b>	
<b>(b)</b> Explain the concept of Hive and illustrate its architecture using a figure.	<b>07</b>
<b>Q.3 (a)</b> What is Apache Pig? Discuss its importance and uses.	<b>07</b>
<b>(b)</b> Define a distributed file system. Explain the architecture of the Hadoop Distributed File System	<b>07</b>
<b>OR</b>	
<b>(a)</b> Explain HBase and describe the data storage mechanism in HBase with an example.	<b>07</b>
<b>(b)</b> What do you mean by ZooKeeper? Explain its role in monitoring a cluster.	<b>07</b>
<b>Q.4 (a)</b> What do you understand by Spark? Explain the concept and working of RDD.	<b>07</b>
<b>(b)</b> List and explain the different categories of NoSQL databases in detail	<b>07</b>
<b>OR</b>	
<b>(a)</b> Explain HiveQL and discuss the detailed steps involved in querying data	<b>07</b>
<b>(b)</b> Describe the key principles of schema design in detail.	<b>07</b>
<b>Q.5 (a)</b> What are the main features of MongoDB? Write a short explanation.	<b>07</b>
<b>(b)</b> Discuss CRUD operations in MongoDB along with suitable examples for every operation	<b>07</b>

**OR**

- (a)** Describe the use of the aggregate function in MongoDB with an appropriate example **07**
- (b)** Define NoSQL and discuss its advantages **07**

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