Seat No.:_____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA INTEGRATED - SEMESTER–VIII • EXAMINATION – WINTER 2020

Subject Code:4480601   **Date:01-01-2021**
Subject Name: Big Data
Time:02:00 PM to 04:00 PM   **Total Marks: 56**
Instructions:
1. **Attempt any FOUR questions out of EIGHT questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain Big Data Analytics life cycle in detail.	**07**
	(b)	Describe the Speed, Consistency and Volume (SCV). why only two out of the three SCV properties are simultaneously supportable.	**07**
Q.2	**(a)**	Describe the Consistency, Availability, and Partition tolerance (CAP) theorem. why only two out of the three CAP theorem properties are simultaneously supportable.	**07**
	(b)	(i)Differentiate between :	
		i) RDBMS and HADOOP ii) Quantitative Analysis and Qualitative Analysis	**04**
		(ii)What is replication? State its types.	**03**
Q.3	**(a)**	Explain sharding and replication with proper example.	**07**
	(b)	What is Big Data? List and explain characteristics of big data with example.	**07**
Q.4	**(a)**	Describe the distributed storage architecture of HBASE along with appropriate diagram.	**07**
	(b)	What is MongoDB? Explain how MongoDB achieves horizontal scaling.	**07**
Q.5	**(a)**	Discuss Classification, Clustering and Filtering Machine learning techniques	**07**
	(b)	Discuss A/B Testing, Correlation and Regression using suitable example.	**07**
Q.6	**(a)**	What is MapReduce? Write a Mapper and Reducer function for word count.	**07**
	(b)	Describe Visual analysis techniques with its importance.	**07**
Q.7	**(a)**	Explain the concepts "task parallelism" and "data parallelism" using suitable example. Which of these concepts is adopted by MapReduce? How?	**07**
	(b)	Explain any 7 commands of Hbase with example.	**07**
Q.8	**(a)**	MongoDB : Create collection Election with fields : SeatID, SeatName, PartyName, CandidateName, Gender,Age	**07**
		1. List all documents containing Patel in their CandidateName.	
		2. Take backup of collection.	
		3. Count no. of Party wise candidates..	
		4. Create index on PartyName.	
		5. Arrange documents in ascending order of names.	
		6. Display 4th document to 5th document.	
		7. Remove documents whose Age is more than 65	
	(b)	Explain mongoimport, mongoexport and mongodump utility.	**07**

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