# GUJARAT TECHNOLOGICAL UNIVERSITY
## MCA INTEGRATED – SEMESTER –VIII EXAMINATION –WINTER-2021

**Subject Code: 4480601**                                    **Date: 23-11-2021**
**Subject Name: Big Data**
**Time: 02:30 pm to 05:00 pm**                              **Total Marks: 70**
**Instructions:**
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

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|---|---|---|---|
| **Q.1** | **(a)** | **Write following:** | **07** |
| | | 1. Data Node. | |
| | | 2. Cluster | |
| | | 3. Big Table | |
| | | 4. HBase | |
| | | 5. Task Tracker | |
| | | 6. HFDS | |
| | | 7. Constant Hashing | |
| | **(b)** | **Do as directed:** | |
| | | 1. State the phases of Big Data Analytics life cycle. | **03** |
| | | 2. Write any three differences between traditional BI and Big Data BI. | **04** |
| **Q.2** | **(a)** | What is Big Data? List and explain characteristics of big data with example. | **07** |
| | **(b)** | 1. Differentiate between <br>(i) RDBMS and HADOOP <br>(ii)Parallel data processing and distributed data processing | **06** |
| | | 2. Define NoSQL. | **01** |

**OR**

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| | **(b)** | Describe the Speed, Consistency and Volume (SCV). why only two out of the three SCV properties are simultaneously supportable. | **07** |
| **Q.3** | **(a)** | Discuss A/B Testing, Correlation and Regression using suitable example. | **07** |
| | **(b)** | What is Business Architecture? Explain how Big Data is related to it at various levels of the organization. | **07** |

**OR**

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| **Q.3** | **(a)** | State and explain the types of data analysis in brief. | **07** |
| | **(b)** | What is MongoDB? Explain how MongoDB achieves horizontal scaling | **07** |
| **Q.4** | **(a)** | Explain CAP and BASE theorem in detail | **07** |
| | **(b)** | What is MapReduce? Write a Mapper and Reducer function for word count | **07** |

**OR**

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| **Q.4** | **(a)** | Explain HBase architecture in detail. | **07** |
| | **(b)** | Explain how to access data from MongoDB, Hbase and Redis databases | **07** |
| **Q.5** | **(a)** | Explain mongoimport, mongoexport and mongodump utility. | **07** |
| | **(b)** | Explain any 7 commands of Hbase with example | **07** |

**OR**

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| **Q.5** | **(a)** | Illustrate Classification and Clustering techniques | **07** |
| | **(b)** | How Sharding and Replication can be combined benefit fault tolerance, availability and scalability? | **07** |

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