

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER- • EXAMINATION – WINTER 2014

Subject Code: 3715503**Date: 09/01/2015****Subject Name: Big Data and High Performance Computing Solution****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 a short note on the characteristic features of Big data. | 07 |
| | (b) What are the technical challenges posed by Big data? | 07 |
| Q.2 | (a) Explain in detail the Hadoop architecture. | 07 |
| | (b) Describe the importance of distributed computing in Big data. | 07 |
| | OR | |
| | (b) Describe the working of Job tracker with a suitable example | 07 |
| Q.3 | (a) What is HDFS? How does it differ from the traditional file systems? | 07 |
| | (b) Explain in detail the data storage and management in HDFS. | 07 |
| | OR | |
| Q.3 | (a) How the Namenode handle the failure of the data node? | 07 |
| | (b) Write a short note on NoSQL databases. List the differences between NoSQL and relational databases? | 07 |
| Q.4 | (a) Explain the replication mechanism of data blocks in HDFS. | 07 |
| | (b) Write a short note on MongoDB and its advantages over relational databases. | 07 |
| | OR | |
| Q.4 | (a) Explain in detail the working of MapReduce with a suitable example. | 07 |
| | (b) Explain in brief how HDFS handles jobs. | 07 |
| Q.5 | (a) Write a short note on the different types of NoSQL databases. | 07 |
| | (b) Write a short note on challenges posed by big data in health care. | 07 |
| | OR | |
| Q.5 | (a) Write a short note on application of big data in scientific applications. | 07 |
| | (b) Write a short note on server virtualization and its uses in the context of big data. | 07 |
