# MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
*(A constituent unit of MAHE, Manipal)*

## III SEMESTER MCA

## END SEMESTER EXAMINATIONS, DEC 2020

### SUBJECT: BIG DATA ANALYTICS [MCA 5026]

### REVISED CREDIT SYSTEM
### (04/01/2021)

Time: 3 Hours                                                                 MAX. MARKS: 50

### Instructions to Candidates:
- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

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|---|---|---|
| 1A. | Explain the 4 V's of Big Data with suitable examples. | 5 |
| 1B. | Compare and Contrast the functions of following:<br><br>i. Name Node vs. Data Node.<br><br>ii. Job tracker vs. Task Tracker<br><br>iii. Name Node vs. Secondary Name Node | 3 |
| 1C. | How does Real-Time Analytics Processing (RTAP) differ from OLAP? Give examples. | 2 |
| 2A. | Explain with a neat diagram the features of the Distributed File Systems. | 5 |
| 2B. | How do Big Data frameworks support fault tolerance? | 3 |
| 2C. | What are the various sources of Internet data for Big Data applications? | 2 |
| 3A. | Explain the Hadoop Eco System with a neat diagram. | 5 |
| 3B. | List and Explain the various mathematical algorithms supported in Map Reduce. | 3 |

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| 3C. | How does Big data analytics differ from traditional data analytics? Give examples. | 2 |
| 4A. | With a neat diagram explain the working of a write operation in HDFS. | 5 |
| 4B. | With suitable examples, describe the limitations of Map Reduce? | 3 |
| 4C. | What is data parallelism? How is it achieved in Map Reduce? | 2 |
| 5A. | Explain the components of Apache Spark with a neat diagram | 5 |
| 5B. | How are sparse data types represented in Spark represented in MLLib? | 3 |
| 5C. | List and describe the two dæmons running on YARN? | 2 |