CBCS SCHEME

SRI SAIRAM COLLEGE OF ENGINEERING

USN | | | | | | | | | | |

BIS701

# Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
## Big Data Analytics

Time: 3 hrs. Max. Marks: 100

***Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.***
***2. M : Marks , L: Bloom's level , C: Course outcomes.***

| | | Module – 1 | M | L | C |
|---|---|---|---|---|---|
| Q.1 | a. | Describe the 3 V's of Big Data and discuss the challenges faced with Big data. | 10 | L2 | CO1 |
| | b. | Explain the classification of digital data. | 10 | L2 | CO1 |
| | | **OR** | | | |
| Q.2 | a. | Discuss Big Data Analytics and explain the following terminologies :<br>i) Symmetric Multiprocessor System ii) CAP Theorem. | 10 | L2 | CO1 |
| | b. | Explain the features and advantages and NOSQL. Discuss the types of NOSQL data bases. | 10 | L2 | CO1 |
| | | **Module – 2** | | | |
| Q.3 | a. | Discuss the need for Hadoop and its high level architecture. | 10 | L2 | CO2 |
| | b. | Illustrate MapReduce process with a word count example. | 10 | L3 | CO2 |
| | | **OR** | | | |
| Q.4 | a. | Discuss the limitation of HDFS and its solution. Explain the YARN architecture. | 10 | L3 | CO2 |
| | b. | Implement a MapReduce program in Java/Python/R to implement matrix multiplication. | 10 | L4 | CO2 |
| | | **Module – 3** | | | |
| Q.5 | a. | Discuss replication and Sharding in MongoDB. | 10 | L2 | CO3 |
| | b. | Illustrate the CRUD operations using MongoDB query language with examples. | 10 | L3 | CO3 |
| | | **OR** | | | |
| Q.6 | a. | Demonstrate the following operations in MongoDB query language with examples : i) Count ii) Limit iii) Sort iv) Skip. | 10 | L2 | CO3 |
| | b. | Explain the application of the following in MongoDB<br>i) Cursors ii) Indexes iii) MongoExport iv) Aggregate function. | 10 | L2 | CO3 |
| | | **Module – 4** | | | |
| Q.7 | a. | Discuss the features of Hive. Explain the Hive architecture. | 10 | L2 | CO3 |
| | b. | Explain the DDL and DML commands in Hive. | 10 | L2 | CO3 |
| | | **OR** | | | |
| Q.8 | a. | Express the features and philosophy of Pig. Discuss ETL processing. | 10 | L2 | CO3 |
| | b. | Discuss the following in Pig.<br>i. Relational operators – Foreach and Limit<br>ii. Complex data types – Tuple and Map. | 10 | L2 | CO3 |
| | | **Module – 5** | | | |
| Q.9 | a. | Discuss the features of spark. Explain the spark software stack. | 10 | L2 | CO4 |
| | b. | Explain the steps involved between acquisition of data from multiple sources and its application in spark. | 10 | L2 | CO4 |
| | | **OR** | | | |
| Q.10 | a. | Discuss text mining and its applications. Explain the process of text minng. | 10 | L2 | CO4 |
| | b. | Implement a word count program in Hadoop and spark using Java/Python/R. | 10 | L4 | CO4 |

* * * * *