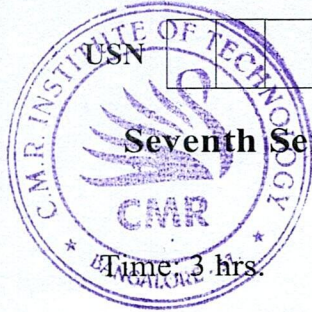


# CBCS SCHEME



Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026

## Big Data Analytics

21CS71

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Define Data and Big Data and also discuss the evolution of Big Data. (06 Marks)
- b. List and explain the characteristics of Big Data. (04 Marks)
- c. Write a note on Massive Parallel processing platforms and cloud computing in Big Data scenario. (10 Marks)

OR

- 2 a. With a neat diagram, explain data architecture design. (10 Marks)
- b. Explain the application of Big Data Analytics in Healthcare systems and detection of marketing frauds. (10 Marks)

### Module-2

- 3 a. Define Hadoop. With a neat diagram, explain Hadoop core components and Ecosystem components. (10 Marks)
- b. Illustrate YARN based execution model and its function with a neat diagram. (10 Marks)

OR

- 4 a. What are the design features of HDFS and also explain the functions of Name Node and Data Node. (10 Marks)
- b. Explain Apache Sqoop Import and Export methods, with a neat diagram. (10 Marks)

### Module-3

- 5 a. Discuss the characteristics of NOSQL data store along with the features in NOSQL transactions. (10 Marks)
- b. Define key-value store with an example. List the advantages and limitations of key value store. (10 Marks)

OR

- 6 a. Give the comparison between NOSQL and SQL/RDBMS. (05 Marks)
- b. With a neat diagram, explain the following shared-nothing architecture for Big data tasks:
  - i) Master slave distribution model (10 Marks)
  - ii) Peer-to-peer distribution model (10 Marks)
- c. List and explain the MongoDB data types. (05 Marks)

### Module-4

- 7 a. With a neat diagram, illustrate MapReduce process on client submitting a job. (08 Marks)
- b. With an example, illustrate the execution of MapReduce technique. (08 Marks)
- c. Illustrate Matrix-Vector multiplication using MapReduce. (04 Marks)

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OR

- 8 a. With a neat diagram, illustrate Hive integration and work flow steps. (10 Marks)
- b. With a neat diagram, explain the pig architecture for scripts data flow and processing. (10 Marks)

### Module-5

- 9 a. Write a note on the following:
  - i) Linear Relationship (08 Marks)
  - ii) Non-linear Relationship
  - iii) Outliers
- b. With an example problem, explain the working of Apriori algorithm to generate candidate item set. (12 Marks)

OR

- 10 a. With a neat diagram, explain text mining process. (12 Marks)
- b. Write a note on the following:
  - i) Web content Mining (08 Marks)
  - ii) Web usage Mining.

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