

**Seventh Semester B.E. Degree Examination, July/August 2022**  
**Big Data Analytics**

Time: 3 hrs.

Max. Marks: 100

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

**Module-1**

- 1 a. Define Data, Web data, Big data. Also explain structured, semistructured and unstructured data. (10 Marks)
- b. List and explain the characteristics of big data. Illustrate by considering an example of E-commerce, how big data is used. (10 Marks)

**OR**

- 2 a. With a neat diagram, explain the function of each of the five layers in big data architecture design. (12 Marks)
- b. How does Berkeley Data Analytics stack help in analytics tasks? (08 Marks)

**Module-2**

- 3 a. With a neat diagram, explain Hadoop main components and ecosystem components. (08 Marks)
- b. Brief out the features of Hadoop HDFS? Also explain the functions of Name Node and Data Node. (08 Marks)
- c. Explain any two HDFS commands with example. (04 Marks)

**OR**

- 4 a. Explain the following:  
 (i) HDFS block replication (ii) HDFS safe mode.  
 (iii) Rack awareness (iv) Name Node high availability. (12 Marks)
- b. Discuss the Apache sqoop Import and Export methods with neat diagrams. (08 Marks)

**Module-3**

- 5 a. List and compare the features of Big Table, RC, ORC and Parquet data stores. (10 Marks)
- b. With example explain key-value store. (10 Marks)

**OR**

- 6 a. Discuss the usage of MongoDB, Cassandra, CouchDB, Oracle NoSQL and Riak. (10 Marks)
- b. List the Pros and Cons of distribution using sharding. (05 Marks)
- c. Give the comparison between NoSQL and SQL/RDBMS. (05 Marks)

**Module-4**

- 7 a. Describe MapReduce Execution steps with a neat sketch. (12 Marks)
- b. How node failure can be handled in Hadoop? Discuss. (08 Marks)

**OR**

- 8 a. With a neat diagram, describe Hive integration and work flow steps. (10 Marks)
- b. Explain with Return type and Syntax the Hive built-in functions. (10 Marks)

**Module-5**

- 9 a. Discuss Regression Analysis using Linear and Non-linear regression models. (10 Marks)  
b. Explain with an example Apriori algorithm to evaluate candidate key. (10 Marks)

**OR**

- 10 a. Write a note on:  
(i) Web mining  
(ii) Web content mining.  
(iii) Web usage mining. (12 Marks)  
b. How the Cliques discover communities from social network analysis? (04 Marks)  
c. Define a Page Rank. (04 Marks)



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