CBCS SCHEME

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18CS72

Seventh Semester B.E. Degree Examination, Feb./Mar.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. Discuss the Evolution of Big Data. **(06 Marks)**
b. Explain the characteristics of Big Data. **(04 Marks)**
c. With a neat block diagram, explain Data Architecture Design. **(10 Marks)**

OR

2 a. Write notes on Analytics Scalability to Big Data and Massive Parallel Processing Platforms. **(12 Marks)**
b. Highlight Big Data Analytics applications with one case study. **(08 Marks)**

Module-2

3 a. What are the core components of Hadoop? Explain in brief its each of its components. **(10 Marks)**
b. Explain Hadoop Distributed File System. **(10 Marks)**

OR

4 a. Define MapReduce Frame work and its functions. **(06 Marks)**
b. Write down the steps on the request to MapReduce and the types of process in MapReduce. **(10 Marks)**
c. Write short notes on Flume Hadoop Tool. **(04 Marks)**

Module-3

5 a. Discuss the characteristics of NoSQL data store along with the features in NoSQL transactions. **(08 Marks)**
b. With neat diagrams, explain the following for shared-Nothing Architecture for Big Data Tasks,
(i) Single Server model
(ii) Sharding very large databases
(iii) Master Slave distribution model.
(iv) Peer-to-Peer distribution model. **(12 Marks)**

OR

6 a. Define key-value store with example. What are the advantages of key-value store? **(10 Marks)**
b. Write down the steps to provide client to read and write values using key-value store. What are the typical uses of key value store? **(10 Marks)**

Module-4

7 a. With a neat diagram, explain the process in MapReduce when client submitting a Job. **(10 Marks)**
b. Explain Hive Integration and work flow steps involved with a diagram. **(10 Marks)**

OR

8 a. Using HiveQL for the following:
(i) Create a table with partition.
(ii) Add, rename and drop a partition to a table. **(10 Marks)**

b. What is PIG in Big Data? Explain the features of PIG. **(10 Marks)**

Module-5

9 a. In Machine Learning explain linear and non-linear relationship with essential graphs. **(10 Marks)**

b. Write the block diagram of text mining process and explain its phases. **(10 Marks)**

OR

10 a. Define multiple regressions. Write down the examples involved in forecasting and optimization in regression. **(10 Marks)**

b. Explain the parameters in social graph network topological analysis using centralities and PageRank. **(10 Marks)**

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18CS72

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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