



# CBCS SCHEME

20MCA352

## Third Semester MCA 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. Explain analysis process model with a neat diagram. (10 Marks)  
b. Describe the various methods to categorize the data. (10 Marks)

OR

- 2 a. List and explain the satisfactory requirements of a good analytical model. (10 Marks)  
b. Mention the different types of data sources for big data analytics and explain them. (05 Marks)  
c. Calculate the Z-scores and detect the outlier for the following data. Where mean  $\mu = 40$  and standard deviation  $\sigma = 10$ . Data = 30, 50, 10, 40, 60, 80. (05 Marks)

### Module-2

- 3 a. Discuss the critical components of Hadoop and their working along with a neat diagram. (10 Marks)  
b. What is predictive analysis? Why are they required? Discuss the leading trends of predictive analysis. (10 Marks)

OR

- 4 a. Describe the Inter and Trans-firewall analytics with a neat diagram. (10 Marks)  
b. Write a brief note on:  
i) Crowd sourcing  
ii) Mobile Business Intelligence. (10 Marks)

### Module-3

- 5 a. Explain the various open source technologies of Hadoop ecosystem. (10 Marks)  
b. Discuss the difficulties of implementing storage and analysis support for big data. (10 Marks)

OR

- 6 a. List the differences between MapReduce and RDBMS. (10 Marks)  
b. Write short note on:  
i) Volunteer computing  
ii) Grid computing. (10 Marks)

### Module-4

- 7 a. What is a memory block in HDFS? Explain block report, replication factor and rack awareness with respect to data node. (10 Marks)  
b. Discuss any five HDFS commands. (10 Marks)

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OR

- 8 a. Explain the architectural changes that are needed while replacing active name node with stand by name node. (10 Marks)
- b. With a neat diagram, explain the anatomy of reading data from a file in HDFS. (10 Marks)

Module-5

- 9 a. What is MapReduce? Sketch a neat diagram and explain the logical data flow in MapReduce. (10 Marks)
- b. Write a short note on:
- i) Map Reduce UI
  - ii) Hadoop logs.

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(10 Marks)

OR

- 10 a. Write a Java MapReduce code to find maximum temperature from the weather data set. (10 Marks)
- b. How does a MapReduce model works with a single reduce task? Explain with a neat diagram. (10 Marks)

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