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MCA
(SEM III) THEORY EXAMINATION 2024-25
BIG DATA

TIME: 3 HRS**M.MARKS: 100****Note: Attempt all Sections. In case of any missing data, choose suitably.****SECTION A****1. Attempt all questions in brief.****2 x 10 = 20**

Q no.	Question	CO	Level
a.	Define Big Data.	1	K2
b.	Write any 4 technologies used for the implementation of Big Data.	1	K2
c.	Differentiate between NoSQL and relational Database.	2	K2
d.	Discuss the role of map function in the map-reduce framework.	2	K1
e.	Discuss role of Flume with its advantage.	3	K2
f.	Explain the role of NameNode.	3	K1
g.	Discuss the role of YARN in Hadoop.	4	K2
h.	Discuss the use of Spark.	4	K2
i.	Differentiate between Hive and Hbase.	5	K1
j.	What are the 2 different modes of PIG.	5	K1

SECTION B**2. Attempt any three of the following:****10 x 3 = 30**

Q no.	Question	C O	Level
a.	Emphasize the types of data used to actionable insights in big data.	1	K2
b.	Discuss the history of Hadoop and its impact on Big Data processing.	2	K2
c.	Illustrate the rack awareness algorithm of HDFS used in writing the data.	3	K3
d.	Discuss major differences between Hadoop 1.0 and Hadoop 2.0. Explain with examples.	4	K2
e.	Discuss the role of zookeeper with its architecture.	5	K2

SECTION C**3. Attempt any one part of the following:****10 x 1 = 10**

Q no.	Question	C O	Level
a.	Explain the concept of Big Data Analytics with its classification.	1	K2
b.	Discuss the role of Big Data in healthcare, highlighting its applications, benefits, and challenges with relevant examples.	1	K2

4. Attempt any one part of the following:**10 x 1 = 10**

Q no.	Question	C O	Level
a.	Describe the MapReduce framework in Big Data processing, explaining its working, key components.	2	K2
b.	Explain the different types of MapReduce jobs in Big Data.	2	K2

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TIME: 3 HRS**M.MARKS: 100****5. Attempt any one part of the following: 10 x 1 = 10**

Q no.	Question	CO	Level
a.	Illustrate the components of the Hadoop Distributed File System and key features.	3	K2
b.	Explain the process to write the block in Hadoop.	3	K2

6. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Explain the architecture and working of YARN highlighting its advantages.	4	K2
b.	Explain the key features of Scala, its benefits, and its applications in Big Data processing.	4	K2

7. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Describe the key features of Apache Pig, its architecture, and its advantages in simplifying Big Data processing.	5	K2
b.	Explain the architecture of Hive with the help of a neat diagram.	5	K2