Code: 21F00302

MCA III Semester Regular & Supplementary Examinations December/January 2024

BIG DATA TECHNOLOGIES

(Master of Computer Applications)

Time: 3 hours Max. Marks: 60

Answer all the questions

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1	(a)	What is big data? Explain in detail about applications of big data?	6M
	(b)	Why big data? Discuss the challenges and their solutions in Big Data.	6M
		OR	
2	(a)	What are the bog data technologies? Explain briefly about Hadoop.	6M
	(b)	Write short notes on mobile business intelligence, Crowd sourcing analytics, inter and trans firewall analytic.	6M
3	(a)	Write short notes on key-value and document data models.	6M
	(b)	Explain materialized views.	6M
		OR	
4	(a)	Explain master-slave replication, peer-peer replication.	6M
	(b)	Discuss the map-reduce framework in detail.	6M
5	(a)	What are the types of Data format? How to analysing data with Hadoop?	6M
	(b)	Explain Hadoop distributed file system.	6M
		OR	
6	(a)	How the data flow in Hadoop? Explain Hadoop I/O?	6M
	(b)	Explain file-based data structures.	6M
7	(a)	Describe MapReduce workflows.	6M
	(b)	Explain anatomy of MapReduce job run.	6M
		OR	
8	(a)	What is the use of YARN, How handling failures in classic Map-reduce and YARN?	6M
	(b)	Explain briefly job scheduling, shuffle and sort, task execution.	6M
9	(a)	What is the use of Hbase? Explain in detail about data model and implementations.	6M
	(b)	What is the use Cassandra? Explain in detail about Cassandra data model.	6M
		OR	
10		Write short notes on HiveQL data definition, HiveQL data manipulation, HiveQL queries.	12M

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MCA III Semester Supplementary Examinations May 2024

BIG DATA TECHNOLOGIES

(Master of Computer Applications)

Time: 3 hours Max. Marks: 60

Answer all the questions

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1	(a)	Why big data? Write Short notes on big data and marketing, fraud and big data, risk and big data, credit risk management.	6M
	(b)	Explain in detail about big data and algorithmic trading, big data and healthcare, big data in medicine, advertising and big data.	6M
		OR	
2	(a)	What are the open source technologies? Explain briefly about Hadoop.	6M
	(b)	Explain in detail about mobile business intelligence, Crowd sourcing analytics, inter and trans firewall analytics.	6M
3	(a)	Explain aggregate data models.	6M
	(b)	Explain schema less databases.	6M
		OR	
4	(a)	What is meant by consistency? Explain in detail about relaxing consistency.	6M
	(b)	Explain (i) partitioning and combining, (ii) composing map reduce calculations.	6M
5	(a)	What are the HDFS concepts?	6M
	(b)	Design of Hadoop distributed file system.	6M
		OR	
6	(a)	How the data flow in Hadoop? Explain Hadoop I/O?	6M
	(b)	Explain file-based data structures?	6M
7	(a)	Describe Map Reduce workflows.	6M
	(b)	Explain anatomy of Map Reduce job run.	6M
		OR	
8	(a)	Explain Map Reduce types.	6M
	(b)	Explain with an example of types of input formats and output formats.	6M
9	(a)	What is the use of H base? Explain in detail about data model and implementations.	6M
	(b)	What is the use Cassandra? Explain in detail about Cassandra data model.	6M
		OR	
10	(a)	What is the use of Hive? Explain what are the types of data types and file formats.	6M
	(b)	Write short notes on HiveQL data definition, HiveQL data manipulation.	6M

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MCA III Semester Supplementary Examinations August/September 2023

BIG DATA TECHNOLOGIES

(Master of Computer Applications)

Time: 3 hours Max. Marks: 60

Answer all the questions

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1	(a)	State and explain various big data technologies.	6M
	(b)	How Big Data Analytics can be useful in the development of smart cities? Explain.	6M
		OR	
2	(a)	Discuss Big Data in Healthcare, Transportation.	6M
	(b)	Examine the characteristics of Big Data.	6M
3	(a)	Describe materialized views with suitable example.	6M
	(b)	Explain the term NO-SQL. Explain CAP theorem with suitable block diagram.	6M
		OR	
4	(a)	How do MAP-REDUCE work? Explain eachstep with suitable example.	6M
	(b)	Discuss the NoSQL data stores and their characteristic features.	6M
5		Explain the map reduce data flow with single reduce and multiple reduce.	12M
		OR	
6		Explain the following: (i) Mapper class, (ii) Reducer class, (iii) Scaling out.	12M
7	(a)	Explain in detail the various types of job scheduler.	8M
	(b)	Explain the procedure of writing a unit test with MRUnit in detail.	4M
		OR	
8	(a)	Discuss the various types of map reduce input formats.	6M
	(b)	Outline the task execution process in detail.	6M
9	(a)	Describe Cassandra data model.	6M
	(b)	Explain in brief about Data manipulation in HIVE.	6M
		OR	
10	(a)	Give a detailed note on Hbase clients.	6M
	(b)	What are views in HIVE? What is the difference between internal and external tables in HIVE?	6M

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MCA III Semester Regular Examinations March 2023

BIG DATA TECHNOLOGIES

(For students admitted in 2021 only)

Time: 3 hours Max. Marks: 60

Answer all the questions

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1	(a)	Distinguish Structured data, Semi-Structured and Unstructured data.	6M
	(b)	Explain the brief history of Hadoop.	6M
		OR	
2	(a)	List various applications of big data. How it can be used to improve business for a superstore.	6M
	(b)	Identify the problems involved in data storage and analysis of Big data?	6M
3	(a)	What is NoSQL? Why Are NoSQL databases interesting?	6M
	(b)	Describe key-value and document data models with suitable example.	6M
		OR	
4	(a)	Explain schema less databases with example.	6M
	(b)	What is sharding and replication? Explain.	6M
5	(a)	How Hadoop streaming is suited with text processing explain.	6M
	(b)	How do you analyze the data in Hadoop? Explain.	6M
		OR	
6		Define HDFS. Describe name node, data node and block. Explain HDFS operations in detail.	12M
7	(a)	Explain how map reduce jobs run on YARN.	6M
	(b)	Explain map reduce workflow with suitable example.	6M
		OR	
8	(a)	Explain the failures in MapReduce.	6M
	(b)	Describe the anatomy of MapReduce job run.	6M
9	(a)	Explain in brief about the data types and schemas in HIVE.	6M
	(b)	Describe the data model of Hbase.	6M
		OR	
10	(a)	Give a detail note on Cassandra clients.	6M
	(b)	Discuss in brief about the architecture of HIVE.	6M

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