Semester: VII	Department of Information Science and Engineering	AY: 2026-27
Course Code: BIS701	Course Name: Big Data Analytics	

Question Bank

Q.	Module-01	M	L	C
1.	Describe the 3 V's of Big Data and discuss the challenges faced with Big Data.	8	L2	CO1
2.	Explain the classification of digital data (Structured, Semi-Structured, Unstructured).	8	L2	CO1
3.	Explain the CAP Theorem and its implications on distributed systems.	8	L2	CO1
4.	Why do we need Big Data? Write any four important points.	6	L2	CO1
5.	What is Big Data Analytics? Explain the four types: • Descriptive • Diagnostic • Predictive • Prescriptive	8	L2	CO1
6.	What is NoSQL? Why is NoSQL useful for Big Data? Give two examples of NoSQL databases.	9	L2	CO1
7.	What is Hadoop? Explain the functions of: • HDFS • MapReduce	7	L2	CO1
8.	Choose one real-life application such as Amazon, YouTube, Instagram or Banking and explain: • What type of data it generates • Why it can be considered Big Data • How Big Data Analytics can help	10	L2	CO1
9.	Explain the following NoSQL concepts with simple examples: • Sharding • Replication • Horizontal Scalability	8	L2	CO1
10.	Explain Big Data? Explain the 5 V's of Big Data with examples.	8	L2	CO1
	Module-02			
11.	With a neat diagram, explain HDFS architecture and core daemons.	9	L2	CO2
12.	Explain the working model of MapReduce and YARN.	8	L2	CO2
13.	Discuss the need for Hadoop and its high level architecture.	7	L2	CO2
14.	Illustrate MapReduce process with a word count example.	7	L3	CO2
15.	Discuss the limitation of HDFS and its solution. Explain the YARN architecture.	9	L3	CO2
16.	Implement a MapReduce program in Java/Python/R to implement matrix multiplication.	8	L3	CO2
17.	Explain the anatomy of HDFS file read and Write operations, with a neat diagram	10	L3	CO2
18.	Differentiate between Combiner and Reducer.	6	L2	CO2
19.	Differentiate between RDBMS and Hadoop Mapper and Reducer.	7	L2	CO2
20.	Write the steps to process dat using Hadoop with an example scenario (end to end pipeline)	8	L2	CO2

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Module-03				
21.	Discuss replication and Sharding in MongoDB.	6	L2	CO3
22.	Illustrate the CRUD operations using MongoDB query language with examples.	8	L2	CO3
23.	Demonstrate the following operations in MongoDB query language examples: i) Count ii) Limit iii) Sort iv) Skip.	10	L3	CO3
24.	Explain the application of the following in MongoDB i) Cursors ii) Indexes iii) Mongo Export iv) Aggregate function.	10	L3	CO3
25.	What is MongoDB and why is MongoDB used in big data applications?	8	L2	CO3
26.	Discuss replication and sharding in MongoDB with definitions, explanations, and architecture diagrams	91	L2	CO3
27.	Compare RDBMS and MongoDB terminology (e.g., Table vs. Collection, Row vs. Document).	10	L2	CO3
28.	Illustrate the process of creating or generating a unique key in MongoDB.	8	L3	CO3
29.	Explain the following query methods with examples: • save() • find() • pretty() • count() • limit() • skip() • sort()	10	L2	CO3
30.	Demonstrate aggregate and collection-level functions (Count – Sort – Limit – Skip – Aggregate)	9	L2	CO3

***Note:**

1. All modules should contain a minimum of **10** questions each and the total number of questions must be **50**.
2. Questions can carry marks of 06, 07, 08, 09, 10 and for problems: 04 or 05.
3. Follow the RBTL as per the keywords used to frame the questions.
4. Maintain the Course Outcomes (COs) as per the syllabus.
5. M: Marks, L: RBTL, C:COs.

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