GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)
Ph.D. (Second Semester-Summer) Examinations, May – 2025
23SPPECS2015 – Big Data Analytics
(CSE)

Time: 3 hrs   Maximum: 70 Marks

The figures in the right hand margin indicate marks.

	Answer *ANY FIVE* Questions.	**(14 x 5 = 70 Marks)**	**Marks**
1.a.	Describe the impact of Big Data on healthcare. Discuss how Big Data analytics supports patient care, medical research, and healthcare administration.		8
b.	How do cloud computing and Big Data complement each other? Explain the benefits and challenges of deploying Big Data solutions in the cloud.		6
2.	Explain working of following phases of Map Reduce with one common example.		14
	(i) Map Phase		
	(ii) Combiner Phase		
	(iii) Shuffle and Sort Phase		
	(iv) Reducer Phase		
3.a.	What are uses of Crowd sourcing analytics for data analytics?		7
b.	Discuss how relationships are handled in NoSQL databases compared to relational databases. How are embedded documents and references used in document databases to model relationships?		7
4.	What is Hadoop architecture with its diagram, explain in details?		14
5.a.	What is serialization in Hadoop? Discuss its importance in data exchange between Hadoop components and compare Hadoop's Writable interface with Avro serialization.		7
b.	Explain the concept of Blocks and Heartbeat Message in HDFS Architecture. What are the benefits of block transfer?		7
6.a.	Discuss Hadoop YARN in detail with failures in classic Map-reduce?		7
b.	Explain Storage mechanism in HBase. Compare Raw oriented and Column Oriented database structures?		7
7.	What is Classic MapReduce architecture? Explain its components and how they interact during job execution. How does it differ from the YARN-based architecture introduced in Hadoop 2.x?		14
8.a.	Describe the Cassandra data model in detail. How are keyspaces, column families (tables), rows, and columns organized? Compare it to HBase.		7
b.	Explain Apache Pig architecture and its components with diagram?		7

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