CBCS SCHEME

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BCD515C

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
NoSQL Databases

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	What is NoSQL? Explain briefly about aggregate data models with a neat diagram.	08	L2	CO1
	b.	Briefly describe the value of Relational databases.	07	L2	CO1
	c.	Explain briefly about impedance mismatch, with a neat diagram.	05	L2	CO1
		OR			
Q.2	a.	Define materialized view. How are they different from views? Briefly explain the two main strategies to build a materialized view.	08	L2	CO1
	b.	Explain about graph databases, with a neat diagram.	07	L2	CO1
	c.	What are schema less databases? Explain.	05	L2	CO1
		Module – 2			
Q.3	a.	What are conflicts identified in the following scenario? How it can be solved? Alice and Bob share a common google sheet online. Both read the file. Alice updates the doc and forgets to save. Bob updates and saves the file. Content updated by Alice is overwritten. The data updated by Alice is lost.	09	L3	CO2
	b.	Discuss the following : i) Single server ii) Combing sharding and replication	06	L2	CO2
	c.	Define version stamps. Illustrate about various approaches of constructing version stamps.	05	L2	CO2
		OR			
Q.4	a.	Explain about update consistency and Read consistency, with an example.	09	L2	CO2
	b.	Compare the similarities and difference between sharding and peer to peer data distribution.	06	L4	CO2
	c.	Explain the following : i) CAP theorem ii) Quorums	05	L2	CO2
		Module – 3			
Q.5	a.	Explain Mappers and Reducers with examples.	10	L3	CO3
	b.	Explain partitioning and combining stages with examples.	10	L3	CO3
		OR			
Q.6	a.	Explain the features of Key-value stores.	10	L2	CO3
	b.	Give an outline about Basic MapReduce.	05	L2	CO3
	c.	Explain how data can be read and posted from and to the bucket using Queries in Riak.	05	L3	CO3

		Module – 4			
Q.7	**a.**	Briefly explain scaling features in document databases, with a neat diagram.	**10**	**L2**	**CO4**
	b.	Describe some example queries to use with document databases.	**10**	**L2**	**CO4**
		OR			
Q.8	**a.**	Explain consistency and availability in MongoDB with neat diagram for configuration of replica sets.	**10**	**L2**	**CO4**
	b.	Define Document Databases. Explain with an example. List and summarize any 2 features of document databases.	**10**	**L3**	**CO4**
		Module – 5			
Q.9	**a.**	With a neat diagram, explain the three ways in which graph databases can be scaled.	**10**	**L2**	**CO5**
	b.	What are graph databases? Explain with example graph structure.	**10**	**L2**	**CO5**
		OR			
Q.10	**a.**	Explain some suitable use cases of graph databases and describe when we should not use graph databases.	**10**	**L3**	**CO5**
	b.	Summarize about Query features in detail with examples.	**10**	**L2**	**CO5**

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