CBCS SCHEME

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21CS745

Seventh Semester B.E./B.Tech. Degree Examination, June/July 2025
NoSQL Database

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. What is NoSQL? Explain briefly about aggregate data models with a neat diagram. Consider example of relations and aggregates. **(10 Marks)**

b. Define materialized view. How are they different from views? Briefly explain the two main strategies to build a materialized view. **(10 Marks)**

OR

2 a. Describe in detail the attack of clusters. **(07 Marks)**

b. Explain Impedance mismatch with the help of suitable example. **(07 Marks)**

c. What are schemaless databases? Explain. **(06 Marks)**

Module-2

3 a. Explain Master Slave and Peer to Peer distribution models with a neat diagram. **(10 Marks)**

b. Explain about update consistency and read consistency with an example. **(10 Marks)**

OR

4 a. What are Version Stamps? What are the ways to create version stamps? **(10 Marks)**

b. What is CAP theorem? How is it applicable to NoSQL systems? **(10 Marks)**

Module-3

5 a. What is Map Reduce? Explain Map Reduce techniques with an example. **(10 Marks)**

b. What are the features of key value databases? Explain. **(10 Marks)**

OR

6 a. Explain 2 stage Map Reduce with suitable examples and a neat diagram. **(10 Marks)**

b. Explain how data can be read and posted from and to the bucket using queries in Riak. **(05 Marks)**

c. What is key value store? List some popular key value databases. **(05 Marks)**

Module-4

7 a. What are document databases? Explain with example list and explain any 2 features of document database. **(10 Marks)**

b. Explain suitable use cases of document data store. **(10 Marks)**

OR

8 a. Describe scaling and sharding in MongoDB. **(10 Marks)**

b. How to ensure consistency and availability in MongoDB? **(10 Marks)**

Module-5

9 a. What are the features of graph databases? Explain. **(10 Marks)**

b. Explain some suitable use cases of graph databases and describe when we should not use graph databases. **(10 Marks)**

OR

10 a. With a neat diagram, explain the 3 ways in which graph databases can be scaled. **(10 Marks)**

b. How to query on graph? Explain with example. **(10 Marks)**

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