

CBCS SCHEME

21CS745



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

NoSQL Database

Max. Marks: 100

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

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)

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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)

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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)

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.