

CBCS SCHEME

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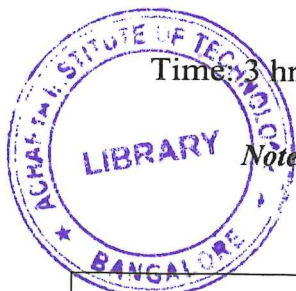
BCD515C

Fifth Semester B.E./B.Tech. Degree Examination, June/July 2026

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.	Differentiate NOSQL and RDBMS.		10	L4	CO1
	b.	Explain column-family stores.		10	L2	CO1
OR						
Q.2	a.	Organize product catalog, orders, shipping address, billing address and payment data objects related to e-commerce website in a aggregate data model and depict as a UML diagram and discuss the consequences of aggregate orientation.		10	L4	CO1
	b.	Explain schemaless databases and materialized views.		10	L2	CO1
Module – 2						
Q.3	a.	Demonstrate in detail the combined working of sharding and replication.		10	L3	CO2
	b.	Explain update and read consistency.		10	L2	CO2
OR						
Q.4	a.	Implement proper consistency in NOSQL databases by considering appropriate read/write quorums.		10	L3	CO2
	b.	Explain various ways of constructing version stamps.		10	L2	CO2
Module – 3						
Q.5	a.	Use appropriate technique to reduce functions to run in parallel on different keys and explain with an example.		10	L3	CO3
	b.	Identify the technique to reduce data before sending it across the network and explain with an example.		10	L2	CO3

OR

Q.6	a.	Interpret the following problem spaces and justify the reasons that, why it is not suitable to use key-value stores: i) Relationships among data ii) Multioperation transactions iii) Query by data iv) Operations by sets	10	L3	CO3
	b.	Explain features of key-value store.	10	L2	CO3

Module – 4

Q.7	a.	Explain document data base.	10	L2	CO4
	b.	Interpret following applications to find the reasons to justify suitability to document database: i) Event logging ii) Blogging platforms iii) Web analytics iv) E-commerce applications.	10	L3	CO4

OR

Q.8	a.	Explain the features of document database.	10	L2	CO4
	b.	Interpret following problem spaces to justify they are not suitable for document databases: i) Complex transactions spanning different operations. ii) Queries against varying aggregate structure.	10	L3	CO4

Module – 5

Q.9	a.	Explain Graph database.	10	L2	CO5
	b.	Interpret scaling with respect to Graph databases with appropriate example.	10	L3	CO5

OR

Q.10	a.	Explain consistency, transactions, availability and query features with respect to graph database.	10	L2	CO5
	b.	Interpret following situation and justify why it is not advised to use graph database. (i) Updation of all or subset of entities are required.	10	L3	CO5
