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Question Paper Code	12620
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**B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024**

Sixth Semester

**Information Technology**

**20ITEL609 - NoSQL DATABASE TECHNIQUES**

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

	<i>Marks</i>	<i>K- Level</i>	<i>CO</i>
1. What are the challenges of using NoSQL databases?	2	K1	CO1
2. Define Eventual Consistency.	2	K1	CO1
3. Define Peer to peer Replication.	2	K1	CO2
4. What is meant by Key Value Store?	2	K1	CO2
5. What Is a Column-Family Data Store?	2	K1	CO4
6. Give the name of the key components of HBase.	2	K1	CO4
7. How do we create a bucket with Riak?	2	K1	CO5
8. What do we need to do to if we need data in every node to be consistent?	2	K1	CO5
9. Write some features of Neo4J.	2	K1	CO6
10. What is the constraint types used in Cypher?	2	K1	CO6

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

11. a) Explain NoSQL and describe the four types of NoSQL database.	13	K2	CO1
<b>OR</b>			
b) Elaborate on the causes that led to the emergence of NoSQL.	13	K2	CO1
12. a) Explain Replication and Sharding in detail with various styles of distributing the data.	13	K2	CO2
<b>OR</b>			
b) What is MapReduce? How would you implement map reduce in database?	13	K2	CO2
13. a) Explain in detail about Cassandra. Discuss on the data models and architecture of the same.	13	K2	CO4
<b>OR</b>			
b) Enumerate on the architecture of Hbase and explain the data models used in Hbase.	13	K2	CO4

14. a) Enumerate how consistency and transaction is achieved in Riak. 13 K2 CO5
- OR**
- b) Explain the Query features in Riak with appropriate example. 13 K2 CO5
15. a) i) Discuss briefly the various Query features in Cypher. 7 K2 CO6
- ii) Assess the following statements: 6 K2 CO6
- (i) Are Neo4j (and other graph databases) not designed for scalability?
- (ii) Consistency in Neo4j
- OR**
- b) Discuss on the following: 13 K2 CO6
- Drop an Index
  - Drop a Constraint
  - Delete a Node
  - Delete a Relationship

**PART - C (1 × 15 = 15 Marks)**

16. a) Explain Document Database with an example. Elaborate on the various use cases for document databases. 15 K2 CO3
- OR**
- b) i) Give a comparative study of RDBMS over Key Value Store and Document based database. 8 K2 CO3
- ii) Give instances when the Key value database and document based are to be used and when to be avoided. 7 K2 CO3