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Question Paper Code	13768
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**M.E - DEGREE EXAMINATIONS, APRIL / MAY 2025**

Second Semester

**Big Data Analytics**

**24PBDPC204 – NOSQL DATABASE**

Regulations - 2024

Duration: 3 Hours

Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

- |   | <i>Marks</i> | <i>K-<br/>Level</i> | <i>CO</i> |
|---|--------------|---------------------|-----------|
| 1. Mention the pros and cons one Graph databases in NOSQL.              | 2            | K2                  | CO1       |
| 2. Define NOSQL databases.  | 2            | K1                  | CO1       |
| 3. Define Peer to peer Replication.                                     | 2            | K1                  | CO2       |
| 4. Outline Master-Slave Replication.                                    | 2            | K1                  | CO2       |
| 5. Mention any one suitable Use Case of Cassandra.                      | 2            | K2                  | CO3       |
| 6. List out the use of ZooKeeper.                                       | 2            | K2                  | CO3       |
| 7. Name some of the popular Key Value Database.                         | 2            | K1                  | CO4       |
| 8. List out the use cases when a Risk cluster would be best used for.   | 2            | K2                  | CO4       |
| 9. Illustrate the scenarios when a Neo4j graph database cannot be used. | 2            | K4                  | CO5       |
| 10. Write the methods used to delete databases in Neo4J.                | 2            | K4                  | CO5       |

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

- |   |    |    |     |
|---|----|----|-----|
| 11. a) Explain document databases? List and explain features of document databases. | 13 | K2 | CO1 |
|---|----|----|-----|

**OR**

- |   |    |    |     |
|---|----|----|-----|
| b) Give a brief description on Application and Integration Databases. | 13 | K2 | CO1 |
|---|----|----|-----|

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|---|----|----|-----|
| 12. a) (i) Define MongoDB? Enumerate on datatypes and features of Mongoddb.                       | 10 | K2 | CO2 |
| (ii) Why can't the document database used in case of queries against varying Aggregate Structure? | 3  | K2 | CO2 |

**OR**

- |   |    |    |     |
|---|----|----|-----|
| b) (i) Describe the Query features of the document database                           | 10 | K2 | CO2 |
| (ii) What is meant by Single Server? When do we use Single Server Distribution model? | 3  | K2 | CO2 |

- |  |   |    |     |
|--|---|----|-----|
| 13. a) (i) Discuss brief how consistency is achieved in Cassandra. | 7 | K2 | CO3 |
|--|---|----|-----|

*K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create*

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(ii) Explain the Transaction done in Cassandra. 6 K2 CO3

**OR**

b) (i) Explain in detail the architecture of Hbase. 7 K2 CO3

(ii) Give the advantages and disadvantages of HBase. 6 K2 CO3

14. a) (i) Explain the suitable Use Cases of Risk. 10 K2 CO4

(ii) Illustrate downside of storing all different objects in a single bucket. Suggest an alternate approach. 3 K2 CO4

**OR**

b) Define Key Value Store. Illustrate about Risk database and explaining how data is queried in Risk. 13 K2 CO4

15. a) Briefly explain the following with examples 13 K4 CO6

(i) Create a node using Cypher

(ii) Create a Relationship using Cypher

(iii) Select data with MATCH using Cypher

**OR**

b) Compose what is a graph database in detail. What is the need for a graph database? 13 K4 CO5

**PART - C (1× 15 = 15 Marks)**

16. a) (i) Discuss the Use Cases of Risk database. 15 K2 CO4

(ii) Elaborate how Risk can be used in Shopping Cart ecommerce with an example considering the following datatypes.

(Item in Product Inventory, Product Promotion (Banner Ad, Image, Video etc.), User Profile, Session Information)

**OR**

b) Define Replication and Sharding. Explain in detail the various styles of distributing the data. 15 K2 CO2