|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Roll No |  |  |  |  |  |  |  |  |  |  |  |  |

****

**Presidency University**

**Bengaluru**

**School Of Computer Science and Engineering & Information Science**

**Summer Term End-Term Examinations, Aug 2024**

**Date**: 07/08/2024

**Time**: 9.30AM to 12.30PM

**Max Marks**: 100

**Weightage**: 50%

**Odd Semester**: 2023 - 24

**Course Code**: CSE2024

**Course Name**: NoSQL Databases

**Department: CSE**

**Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q.No** | **Questions** | **Marks** | **CO** | **RBT** |
| 1 | 1. Describe the NoSQL database and list the types of NoSQL databases. | 4 | CO1 | L1 |
| 1. Differentiate between ACID and BASE properties. | 6 | CO1 | L2 |
| 1. Explain the advantages and disadvantages of NoSQL. | 10 | CO1 | L3 |
| OR | | | | |
| 2 | 1. Describe database Sharding with an example | 4 | CO1 | L1 |
| 1. Illustrate the Document Storage model with an example. | 6 | CO1 | L2 |
| 1. Demonstrate the ACID properties of RDBMS with an example | 10 | CO1 | L3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 | 1. Illustrate the Document Storage model with an example. | 4 | CO2 | L1 |
| 1. Explain the concept of Indexing in NoSQL Database. | 6 | CO2 | L2 |
| 1. Explain the CRUD operation in the NoSQL Database. | 10 | CO2 | L3 |

OR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4 | 1. Explain capped collections with an example | 4 | CO2 | L1 |
| 1. Illustrate the concept of replication in NoSQL Databases. | 6 | CO2 | L2 |
| 1. Explain update consistency with an example. | 10 | CO2 | L3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | 1. Explain CAP theorem. | 4 | CO3 | L1 |
| 1. Describe the Strengths and Weaknesses of Document Databases | 6 | CO3 | L2 |
| 1. Illustrate the approaches to maintain the update consistency | 10 | CO3 | L3 |

OR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | 1. Describe the sticky sessions. | 4 | CO3 | L1 |
| 1. Explain the version stamping. | 6 | CO3 | L2 |
| 1. Illustrate the concept of sharding in MongoDB | 10 | CO3 | L3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 7 | 1. Explain the differences between SQL and NoSQL. | 4 | CO4 | L1 |
| 1. Mention the features of MongoDB. | 6 | CO4 | L2 |
| 1. Explain the different Cassandra operations with examples. | 10 | CO4 | L3 |

OR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 8 | 1. Describe MongoDB with example. | 4 | CO4 | L1 |
| 1. Illustrate the concept of Batch Operation | 6 | CO4 | L2 |
| 1. Explain data model and different types of data model. | 10 | CO4 | L3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 9 | 1. Describe version stamping. | 4 | CO1 | L1 |
| 1. Illustrate the concept of read consistency. | 6 | CO1 | L2 |
| 1. Demonstrate the following operation in MongoDB.  |  |  |  |  |  | | --- | --- | --- | --- | --- | | **ID** | **Name** | **Age** | **Score** | **Course** | | 1 | Sneha | 26 | 78 | Maths | | 2 | Komal | 25 | 88 | Science | | 3 | Dhruti | 29 | 83 | CS | | 4 | Shakti | 26 | 95 | IS | | 5 | Lincy | 25 | 97 | Maths |   Create a new MongoDB database named "StudentDB" and within it, create a collection named "Students” and inserts the above records and execute the given below aggregation Queries:  1. Match with name field to retrieve all documents starting with S.  2. Find students older than 25 and with a score greater than or equal to 80.  3. Find Maximum and Minimum Scores by Age Group.  4. Sort Documents by Age field in Ascending Order.  5. Find students who have taken the course "Maths" | 10 | CO1 | L3 |

OR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 10 | 1. Illustrate the naming convention of NoSQL database. | 4 | CO2 | L1 |
| 1. Explain the schema free feature of NoSQL database. | 6 | CO2 | L2 |
| Demonstrate the following operation in MongoDB.   1. Create a new MongoDB database named "OrderDB" and within it, create a collection named "NewOrder." 2. Insert 5 new order records into the "NewOrder" collection with details like orderID, productName, quantity, productID, and price. 3. Find and display all orders in the "NewOrder" collection with price greater than 100 rupees. 4. Retrieve the details of the order with orderID “2”. 5. Update the price of the product with productID “5” to 12 rupees. 6. Delete the entry for the order with orderID “3”. 7. Calculate the average quantity of products ordered. 8. Group orders by quantity and display the product with maximum quantity | 10 | CO2 | L3 |