**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, November 2022**

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|  | **4BT7138** | Roll No. | Total Printed Pages: 2 |
| **4BT7138** |  |
| B.Tech. IV Year VII- Semester (Main/Back) End Semester Examination, November 2022  **(CE)** | |
| **BCE07104 : Distributed and Cross Platform Databases** | | | |

# Time: **3** Hours. Total Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of following supporting material is permitted during examination for this subject.

# **--------------------------Nil--------------------** **2. ------------------Nil-----------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** | **Bloom Level** |
| **Q.1** | **(a)** | What is Distributed Data Processing? Mention the advantages and Disadvantages of Distributed Data Processing. | **(6)** | **Understanding** |
|  |  |  |  |  |
|  | **(b)** | Draw a diagram and explain the classification of distributed databases. | **(6)** | **Remembering** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.2** | **(a)** | Explain the task of dividing a table into smaller sets called? Explain the three types Fragmentation in detail. | **(6)** | **Understanding** |
|  |  |  |  |  |
|  | **(b)** | Suppose you are Ashok and you are asked to find the distributed design alternatives for the tables in a DBMS. Prepare the list of alternatives and explain each of them. | **(6)** | **Applying** |
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|  |  | **UNIT-II (CO2)** |  |  |
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| **Q.3** | **(a)** | What is NO-SQL? Explain in brief the types of No-SQL databases Also describe the CAP theorem. | **(6)** | **Understanding** |
|  |  |  |  |  |
|  | **(b)** | Write down the Steps to install Mongo DB in your system. Also mention the use of mongod and mongo file in the bin folder. | **(6)** | **Analyzing** |
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|  |  | **OR** |  |  |
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| **Q.4** | **(a)** | Consider a collection with student (id, name, class, marks):  a. select the student data whose marks are more than 85  b. delete records with name of student **seema**  c. update marks where the id is 23 | **(6)** | **Applying** |
|  |  |  |  |  |
|  | **(b)** | Write short note on:  a. Document b. Collection c. Database in MongoDB | **(6)** | **Remembering** |
|  |  |  |  |  |
|  |  | **UNIT-III (CO3)** |  |  |
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| **Q.5** | **(a)** | How replication works in MongoDB? What are the features of replica set? As a database administrator How would you set up a replica set? | **(6)** | **Applying** |
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|  | **(b)** | What do you understand by sharding? Determine its importance. Explain the three main components of sharding. | **(6)** | **Applying** |
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|  |  | **OR** |  |  |
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| **Q.6** | **(a)** | A collection named “restaurants” with keys id, name, score, location, latitude. Write a MongoDB query to find the restaurants that achieved a score, more than 80 but less than 100. | **(6)** | **Applying** |
|  |  |  |  |  |
|  | **(b)** | Explain the following methods with proper example  (i) Find( ) Method (ii) Limit( ) Method (iii) Skip( ) Method | **(6)** | **Understanding** |
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|  |  | **UNIT-IV (CO4)** |  |  |
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| **Q.7** | **(a)** | What are atomic operations? How atomicity is achieved in MongoDB? Explain with example. | **(6)** | **Understanding** |
|  |  |  |  |  |
|  | **(b)** | How is Monitoring in MongoDB done? Explain how to make backups in MongoDB. | **(6)** | **Analyzing** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.8** | **(a)** | Illustrate MapReduce in MongoDB with example? | **(6)** | **Understanding** |
|  |  |  |  |  |
|  | **(b)** | Explain GridFS in MongoDB? Give a practical example for adding files in GRIDFS? | **(6)** | **Remembering** |
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|  |  | **UNITV (CO5)** |  |  |
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| **Q.9** | **(a)** | What do you understand by Monitoring? Explain in brief the methods of monitoring a Cassandra DB. | **(6)** | **Applying** |
|  |  |  |  |  |
|  | **(b)** | What is a Key space in Cassandra? Mention the Steps to create a key space in Cassandra using JAVA API. | **(6)** | **Understanding** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.10** | **(a)** | What is CRUD operation? Explain in detail how to form a crud in Cassandra. | **(6)** | **Understanding** |
|  |  |  |  |  |
|  | **(b)** | Explain How the Cassandra Data model is significantly different from what we normally see in an RDBMS. | **(6)** | **Analyzing** |