

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular & Supplementary **Summer Examination – 2024**

Course: B. Tech. Branch : Artificial Intelligence and Data Science Semester : IV

Subject Code & Name: BTAIC402 Database Management System

Max Marks: 60

Date: 14/06/2024

Duration: 3 Hr.

Instructions to the Students:

1. All the questions are compulsory.
2. Use of non-programmable scientific calculators is allowed.
3. Assume suitable data wherever necessary and mention it clearly.

(Level/CO) Marks

Q. 1 Solve Any Two of the following.

- | | | |
|---|------------|---|
| A) Define Data, Big data, Database and DBMS? What is the purpose of DBMS | Understand | 6 |
| B) What do you mean by Three Schema Architecture and Data Independence | Understand | 6 |
| C) Explain important characteristics of relational & non-relational database systems with example of each | Understand | 6 |

Q.2 Solve Any Two of the following.

- | | | |
|---|------------|---|
| A) Explain The different types of Keys used in RDBMS with example | Understand | 6 |
| B) Draw ER diagrams for College Database. | Apply | 6 |
| C) Explain how SQL Commands are classified | Apply | 6 |

Q. 3 Solve Any Two of the following.

- | | | |
|--|------------|---|
| A) What to you mean by Distributed Data System and Explain it's need and advantages? | Understand | 6 |
| B) What are the different types of NoSQL Data Stores | Understand | 6 |
| C) Explain the CAP theorem of distributed databases. | Understand | 6 |

Q.4 Solve Any Two of the following.

- | | | |
|---|----------|---|
| A) Explain about Graph Database in detail? | Remember | 6 |
| B) Consider the following table and answer the Cassandra queries (CQL). | Apply | 6 |

Teacher:

Tid	TName	TDepartment	Salary	Subjects-Teaching
-----	-------	-------------	--------	-------------------

- | | | |
|---|----------|---|
| i) Creating keyspace "College" with replication factor 3. | | |
| ii) Creating table "Teacher" under College keyspace. Use list collection to store values of "Subjects-Teaching" column. | | |
| iii) Inserting one record in Teacher table. | | |
| iv) Updating Salary of Tid= 35000 to 40000. | | |
| v) Deleting all Teachers from "AIML" department. | | |
| vi) Adding City Column to Teacher table. | | |
| C) What are the important features of Apache Cassandra and Explain in brief about CQL | Remember | 6 |

Q. 5 Solve Any Two of the following.

- | | | |
|--|----------|---|
| A) Explain Use cases of different databases in brief? | Apply | 6 |
| B) Define following terminologies of Graph database with example:
Relationship, directed graph, undirected graph, weighted graph, unweighted graph, degree of node. | Remember | 6 |
| C) What is PostgreSQL explain in detail | Remember | 6 |

***** End *****

103.134.110.10 2024-06-14 07:32:42 UTC