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**Presidency University**

**Bengaluru**

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

**End-Term Examinations, Aug 2024**

**Date**: 05/08/2024

**Time**: 09:30 am– 12:30pm

**Max Marks**: 100

**Weightage**: 50%

**Semester**: Summer Term 2024

**Course Code**: CSE2074 / CSE2012 / CSE253

**Course Name**: Database Management System

**Department: SOCSE&IS**

**Instructions:**

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

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| **Q.No** | **Questions** | **Marks** | **CO** | **RBT** |
| 1 | 1. State logical data independence and physical data independence with an example. | 4 | CO1 | L1 |
| 1. Explain the different types of end users and workers behind the scene involved in the development of data base. | 6 | CO1 | L2 |
| 1. Illustrate the main characteristics of database approach with suitable examples. | 10 | CO1 | L3 |
| OR | | | | |
| 2 | 1. Define the following with suitable examples: 2. Weak entity 3. Strong entity | 4 | CO1 | L1 |
| 1. Discuss with neat diagram how the database system hides certain details of how the data are stored and maintained by using different levels of Abstraction. | 6 | CO1 | L2 |
| 1. **Construct an E-R Diagram for a Car-insurance Company Whose Customers Own One Or More Cars Each. Each Car Has Associated with It Zero To Any Number Of Recorded Accidents?**   **Entity Attributes Relationship**  Person Driverid, Name, Address owns(Car)  Car License, Model, Year  Accident Reportnumber, Location, date Participated (Person, Car) Damage amount | 10 | CO1 | L3 |

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| 3 | 1. Differentiate between DDL and DML commands with suitable examples. | 4 | CO2 | L1 |
| 1. List out the different constraints available in SQL. | 6 | CO2 | L2 |
| 1. Explain the following with suitable examples: 2. Create 3. Alter 4. Drop 5. Delete 6. Rename 7. Truncate | 10 | CO2 | L3 |

OR

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| 4 | 1. Differentiate between DCL and TCL commands with suitable examples. | 4 | CO2 | L1 |
| 1. Differentiate between Delete, Drop and Truncate commands in SQL with suitable examples. | 6 | CO2 | L2 |
| 1. Illustrate the following terms with suitable examples: 2. Not Null 3. Unique 4. Primary Key 5. Foreign Key 6. Check 7. Default | 10 | CO2 | L3 |

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| 5 | 1. Explain insertion, deletion and modification anomalies with example**.** | 4 | CO3 | L1 |
| 1. Explain 1NF, 2NF, 3NF with suitable examples. | 6 | CO3 | L2 |
| 1. Determine the closer of the following set of functional dependencies for a relational scheme R (A, B, C, D, E)   F= {A→BC, CD→E, B→D, E→A}. List out the candidate keys and super keys. | 10 | CO3 | L3 |

OR

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| 6 | 1. Recite the difference between Partial FD and Fully FD with example. | 4 | CO3 | L1 |
| 1. Explain ACID properties and illustrate them through examples. | 6 | CO3 | L2 |
| c. Describe the following problem of concurrent transactions with suitable examples and suggest solutions to handle the problems  i) Lost Update Problem  ii) Dirty Read Problem  iii) Incorrect Summary Problem | 10 | CO3 | L3 |

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| 7 | 1. Explain the following terminologies with respect to temporal database: 2. Valid time 3. Transaction time 4. Decision time | 4 | CO4 | L1 |
| 1. Mention the features of Object oriented database management system. | 6 | CO4 | L2 |
| 1. Briefly explain the components of object oriented data model with suitable examples. | 10 | CO4 | L3 |

OR

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| 8 | 1. Mention the applications of temporal database. | 4 | CO4 | L1 |
| 1. Mention the advantages and disadvantages of object oriented database management system. | 6 | CO4 | L2 |
| 1. Differentiate between deductive database and temporal database in detail with suitable examples. | 10 | CO4 | L3 |

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| 9 | 1. Outline the following extended ER features with an example:   i) Generalization ii) Specialization | 4 | CO1 | L1 |
| 1. Explain various types of attributes with suitable examples. | 6 | CO1 | L2 |
| 1. Draw an ER model of the Banking database application considering the following constraints −    1. A bank has many entities.    2. Each customer has multiple accounts.    3. Multiple customers belong to a single branch.    4. Single customer can borrow multiple loans.    5. A branch has multiple employees. | 10 | CO1 | L3 |

OR

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| 10 | 1. Mention the different actors and their roles for DBMS. | 4 | CO2 | L1 |
| 1. Write the SQL syntax along with examples for the following: 2. Create table 3. Insertion of records | 6 | CO2 | L2 |
| 1. Explain the informal design guidelines that are used in normalization during database design. | 10 | CO2 | L3 |