**Code No. PC301CE**

**METHODIST COLLEGE OF ENGINEERING & TECHNOLOGY (An Autonomous Institution)**

**B.E. (CSE/AI&DS) III-Semester (AICTE) (Supplementary) Examination, AUGUST -2023**

**Subject: DATABASE MANAGEMENT SYSTEMS**

**Time: 3 hours Max.Marks:60**

**Note: Missing data, if any, maybe suitably assumed.**

**PART-A**

**Answer All the questions.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q.No.** | **Questions** | **Marks** | **CO** | **BTL** |
| **1. a** | **What are the advantages of DBMS to manage large enterprises.** | **2** | **1** | **2** |
| **b** | **Define these terms: entity, entity set, attribute, key?** | **2** | **1** | **1** |
| **c** | **List and explain about various SQL commands used in DBMS** | **2** | **2** | **2** |
| **d** | **What is a stored procedure? What are the uses of it?** | **2** | **2** | **2** |
| **e** | **Define a) Primary key b) Super Keyc) Candidate Key d) Foreign Key** | **2** | **3** | **1** |
| **f** | **Differentiate Schema and Instance.** | **2** | **3** | **2** |
| **g** | **What is Denormalization?** | **2** | **4** | **1** |
| **h** | **Explain 2NF with an example** | **2** | **4** | **2** |
| **i** | **What is Serializability?** | **2** | **5** | **1** |
| **j** | **Define transaction? What are the properties of a transaction?** | **2** | **5** | **1** |

**PTO**

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**PART-B**

**Answer Any Five questions**.

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| **Q.No.** |  | **Questions** | **Marks** | **CO** | **BTL** |
| **2.** | **a** | **Explain the difference between two-tier and three-tier architectures. Which is better suited for Web applications? Why?** | **4** | **1** | **2** |
| **b** | **Discuss about the extended features of ER models and the need of them.** | **4** | **1** | **2** |
| **3.** | **a** | **With suitable examples explain various aggregate operators available in SQL.** | **4** | **2** | **2** |
| **b** | **Define nested Queries? How are nesting of queries implemented?** | **4** | **2** | **2** |
| **4.** | **a** | **Explain various basic Relational algebra operations with examples** | **4** | **3** | **2** |
| **b** | **Explain the concept of Indexing? Demonstrate hash based indexing in databases.** | **4** | **3** | **3** |
| **5.** | **a** | **Explain about atomic domains and First Norma Form** | **3** | **4** | **2** |
| **b** | **Explain about Decomposition using Functional dependencies** | **5** | **4** | **3** |
| **6.** | **a** | **Discuss about Timestamp based protocols.** | **4** | **5** | **2** |
| **b** | **Explain conflict and view Serializability with suitable examples?** | **4** | **5** | **2** |
| **7.** | **a** | **Explain about Database System Environment with neat sketch.** | **4** | **1** | **2** |
| **b** | **List and explain SQL operators.** | **4** | **2** | **1** |
| **8.** | **a** | **Define Indexing. Discuss about Single Level Ordered Indexes.** | **4** | **3** | **2** |
| **b** | **Briefly expalin about 3NF and BCNF with suitable examples.** | **4** | **4** | **2** |
| **9.** | **a** | **Explain how atomicity is implemented in databases** | **4** | **5** | **3** |
| **b** | **Write short notes on recovery algorithms.** | **4** | **5** | **2** |

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