**Code No.PC301CS**

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

**B.E. (CSE/AI&DS) III-Semester (AICTE) (Regular) Examination, Feb -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.**

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| **Q.No.** | **Questions** | **Marks** | **CO** | **BTL** |
| **1. a** | **Identify the main components in DBMS and briefly explain functionalities of them.** | **2** | **1** | **2** |
| **b** | **Why the design of a database for a large enterprise is hard?** | **2** | **1** | **2** |
| **c** | **Define View with an example** | **2** | **2** | **2** |
| **d** | **Define a trigger? What is the need of it?** | **2** | **2** | **2** |
| **e** | **Explain ACID properties in detail.** | **2** | **3** | **1** |
| **f** | **List out various relational operation on relations** | **2** | **3** | **1** |
| **g** | **What do you mean by functional dependency?** | **2** | **4** | **2** |
| **h** | **Explain 5NF with an example** | **2** | **4** | **2** |
| **i** | **What isrecoverability?** | **2** | **5** | **1** |
| **j** | **Define shadow paging?** | **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 different roles of database administrators, application programmers, and end users of a database.** | **5** | **1** | **3** |
| **b** | **Differentiate the terms primary key, candidate key, and super key with examples.** | **3** | **1** | **2** |
| **3.** | **a** | **Explain about functions and procedures of SQL** | **4** | **2** | **2** |
| **b** | **Define Integrity? And explain integrity constraints in SQL** | **4** | **2** | **1** |
| **4.** | **a** | **What is RAID? Explain about RAID levels.** | **5** | **3** | **1** |
| **b** | **Explain with examples various fundamental relational algebra operations.** | **3** | **3** | **2** |
| **5.** | **a** | **Explain 3NF and BCNF with an example.** | **5** | **4** | **2** |
| **b** | **What are the properties of decomposition? explain.** | **3** | **4** | **2** |
| **6.** | **a** | **Discuss about lock based protocols?** | **5** | **5** | **2** |
| **b** | **Draw and explain state diagramof transaction?** | **3** | **5** | **1** |
| **7.** | **a** | **Draw the database architecture and explain in detail about each component.** | **5** | **1** | **1** |
| **b** | **What is the need of join? Explain various types of joins.** | **3** | **2** | **2** |
| **8.** | **a** | **Discuss about various physical storage media used for storing data** | **4** | **3** | **2** |
| **b** | **Compute the closure of the following set F of functional dependenciesfor relation schema R (A, B, C, D, E).**  **A→BC, CD→E, B→D, E→A** | **4** | **4** | **3** |
| **9.** | **a** | **Explain how isolation is implemented in databases** | **4** | **5** | **3** |
| **b** | **Write short notes on Buffer Management?** | **4** | **5** | **2** |

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