**SESSION**

**JUL/AUG 2021**

**PROGRAMME**

**MASTER OF COMPUTER APPLICATION (MCA)**

**SEMESTER**

**I**

**COURSE CODE & NAME**

**DCA6104 - ADBMS**

**Set-1st**

**1. What is data model? Compare hierarchical. network and relational data model giving example?**

**Ans.** Data models define how the logical structure of a database is modeled. Data Models are fundamental entities to introduce abstraction in a DBMS. Data models define how data is connected to each other and how they are processed and stored inside the system.

The very first data model could be flat data. Its Half solved only

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**2. Explain database anomalies and its types? Comment the significance of normalization in database design**.

**Ans**. Database anomaly is normally the flaw in databases which occurs because of poor planning and storing everything in a flat database. Generally this is removed by the process of normalization which is performed by splitting/joining of tables.

 Normalization is necessary if you do not do it then the overall integrity of the data stored in the database will eventually

**3. What do you understand by SQL sub-queries? What are the various execution strategies for SQL sub-queries**

**Ans.** A Subquery or Inner query or a Nested query is a query within another SQL query and embedded within the WHERE clause.

A subquery is used to return

 Set- 2nd

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| **4. Explain the concept of Serializability and Recoverability. Illustrate how to manage rollbacks by locking****Ans.** A transaction may not execute completely due to hardware failure, system crash or software issues. In that case, we have to roll back the failed transaction. But some other transaction may also have used values produced by the failed transaction. So we have to roll back those transactions as well.**Recoverable Schedules:**Schedules in

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| **5. What do you mean by two phase locking method used to ensure serializability? Illustrate with an example.****Ans.** There are two types of Locks available **Shared S(a)** and **Exclusive X(a).** Implementing this lock system without any restrictions gives us the Simple Lock-based protocol (or Binary Locking), but it has its own disadvantages, they do**not guarantee Serializability.** Schedules may follow the preceding rules but a non-serializable schedule may result. To guarantee serializability, we **6. What is data fragmentation in data distributed database? Discuss its types****Ans.** Fragmentation is a process of dividing the whole or full database into various subtables or sub relations so that data can be stored in different systems. The small pieces of sub relations or subtables are called fragments. These fragments are called logical data units and are stored at various sites. It must be made sure that the fragments are  |

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