


**Course Code** : 2101CS201

**Date** : 16-11-2022

**Course Name** : Database Management System - I

**Duration** : 150 Minutes

**Total Marks** : 70

**Instructions:**

1. Attempt all the questions.
2. Figures to the right indicates maximum marks.
3. Make suitable assumptions wherever necessary.

**Q.1 (A)** Explain the types of Database Users. **4**
**(B)** Explain Advantages of Database. **3**
**OR**

Explain data, database &amp; information.

**(C)** Write functions of DBA. **7**
**OR**

Draw &amp; write three level architecture of DBMS.

**Q.2 (A)** Write different types of Attributes. **4**
**(B)** Write Selection & Projection with example. **3**
**OR**

Write various mapping cardinality with suitable example.

**(C)** Explain 1NF, 2NF in detail & also discuss functional dependency. **7**
**OR**

Explain 3NF &amp; BCNF in detail.

**Q.3 (A)** Define the Superclass and Subclass in E-R diagram with an example. **4**
**(B)** Write Weak Entity Set & Weak Entity Relationship. **3**
**OR**

Define Specialization &amp; Generalization of E-R diagram.

**(C)** Explain various constraints in database. **7**
**OR**

Illustrate an E-R diagram for the Hospital Management.

- Q.4 (A)** Explain Query Processing Steps in detail with sketch. **4**
- (B)** Explain Materialization in Query Processing. **3**

**OR**

Explain Pipelining in Query Processing.

- (C)** Explain Search Algorithm for Selection Operation. **7**

**OR**

Explain Evaluation of Expressions in Query Processing.

- Q.5 (A)** Explain types of lock in transaction. **4**
- (B)** Explain deadlock with suitable example. **3**

**OR**

Explain Two Phase Commit Protocol.

- (C)** Explain ACID properties with respect to Database transaction. **7**

**OR**

Explain various states of transaction in detail with diagram.

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