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VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

II/IV B.Tech. DEGREE EXAMINATION, JULY, 2022

Fourth Semester

INFORMATION TECHNOLOGY

20IT4304 DATABASE MANAGEMENT SYSTEMS

Time: 3 hours ***Max. Marks: 70***

Part-A is compulsory

Answer One Question from each Unit of Part - B

Answer to any single question or its part shall be written at one place only

PART-A

10 x 1 = 10M

1. a. List-out the advantages of using DBMS approach.
   b. What is a data Model?
   c. Write the syntax for SELECT query in SQL.
   d. What is a join?
   e. Define Entity vs Attribute.
   f. What is multi-valued attribute? Give example.
   g. What are ACID properties? List them.
   h. What is a graph database?
   i. What is a primary key?
   j. Write the syntax for ALTER query in SQL.

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PART-B

4 x 15 = 60M

UNIT-I

2. a. Define Schema. Discuss in detail about the three-schema architecture with a neat diagram. **8M**

   b. What is a relational database schema? Explain. **7M**

(or)

3. a. Write short note about actors on the scene and workers behind the scene. **8M**

   b. What is DBMS? Discuss in detail about various DBMS interfaces. **7M**

UNIT-II

4. a. Explain briefly about secondary single level ordered index. **8M**

   b. Explain briefly about the following operations with examples. **7M**
   i) SELECT ii) PROJECT iii) MINUS

(or)

5. a. What is cartesian product operation? Explain with an example. **8M**

   b. Write short notes on DIVISION operation with an example. **7M**

UNIT-III

6. a. What is Normalization? Explain briefly about the following normal forms with example.
   i) First Normal Form.
   ii) Second Normal Form. **8M**

   b. What is functional dependency? Explain with example. **7M**

(or)

7. a. What is a Relationship type? Explain the differences among relationship instance, relationship type and relationship set. **8M**

   b. What is an E-R Model? Construct an E-R diagram for a Company Database. **7M**

UNIT-IV

8. a. Explain the reasons for the need of concurrency control. **7M**

   b. What is a transaction? Explain the transaction states and additional operations. **8M**

(or)

9. a. What is serializability? How can it be guaranteed by Two-Phase Locking? **8M**

   b. Explain briefly about the types of Locks. **7M**

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