R19

# II B. TECH II SEMESTER REGULAR EXAMINATIONS, AUGUST 2021
## DATABASE MANAGEMENT SYSTEMS
### (Common to CSE and IT Branches)

Time: 3 hours                                                                                     Max. Marks: 60

Note: Answer **ONE** question from each Unit (**5 × 12 = 60 Marks**)
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### UNIT - I

1.  a)  List and explain various data models used for database design.                     [6M]

    b)  Discuss the activities of different database users.                                 [6M]

                                      (OR)

2.  a)  What is Database system? Explain any four features that a database system    [6M]
        should provide to its users.

    b)  Explain the three tier schema architecture of DBMS.                               [6M]

### UNIT – II

3.  a)  Design the E-R diagram for a database showing fatherhood, motherhood and     [6M]
        spouse relationship among men and women.

    b)  Explain the following:                                                            [6M]
        (i) Ternary relationship          (ii) Weak entity set

                                      (OR)

4.  a)  Illustrate the implementation of equi-join and outer join in SQL.                 [6M]

    b)  What is meant by Tuple relational calculus? State and explain various types    [6M]
        of queries in it.

### UNIT – III

5.  a)  How can we compare null values? Explain about logical connectives with        [6M]
        examples.

    b)  Explain the following SQL constructs with examples:                               [6M]
        (i) order by                (ii) group by and having

                                      (OR)

6.  a)  Does the relational model, as seen by an SQL query writer, provide physical  [6M]
        and logical data independence? Explain.

    b)  Discuss the various DDL statements supported by SQL with suitable    [6M]
        examples.

### UNIT –IV

7.  a)  Give a set of Functional Dependencies for the relation schema R(A,B,C,D)     [6M]
        with primary key AB under which R is in 2NF but not in 3NF.

    b)  Explain about Join dependencies and Fifth normal form.                            [6M]

8.  a)  Given a relation R(S, B, C, D) with key={S, B, D} and F={S → C}. Identify   [6M]
        the normal form of the relation R?

    b)  Discuss the importance of NoSQL. Give an overview of NoSQL tools.   [6M]

### UNIT –V

9.  a)  Write the properties of ARIES Algorithm.   [6M]

    b)  Demonstrate how to reduce access time with primary indexing with an   [6M]
        example.

(OR)

10. a)  Describe the role of Wait-Die and Wound-Wait protocols in deadlock   [6M]
        prevention.

    b)  Differentiate between static hashing and dynamic hashing.   [6M]

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