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R13

B.Tech II Year II Semester (R13) Supplementary Examinations December/January 2015/2016
DATABASE MANAGEMENT SYSTEMS
(Common to CSE and IT)

Time: 3 hours   Max. Marks: 70

PART – A
(Compulsory Question)
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1   Answer the following: (10 X 02 = 20 Marks)
  (a) What is E-R modeling? Enlist the components of E-R diagram.
  (b) What are subclass and superclass entities in relational data model?
  (c) Define functional and Trivial functional dependencies.
  (d) What is Normalization? Explain the need of normalization.
  (e) What is Serializability? State its different types.
  (f) What are keys? State the different types of keys.
  (g) Explain the usefulness of record addresses.
  (h) Explain Hash Table using suitable example.
  (i) What is Undo/Redo logging in database?
  (j) What is a Timestamp? Give its drawbacks.

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2   List the steps in proper sequence in order to convert an ER and EER diagram into tables.

OR

3   Draw an Entity Relation diagram for the Hospital Management System. Consider the different types of
     Patients with respect to Disease and In-Patient and Out-Patient Department in the design. Consider the
     availability of all well qualified Doctors. Consider various types of tests and operations to be conducted.
     Explain the mapping cardinality used. Assume suitable attributes. Use generalization and Specialization.

UNIT – II

4   How multivalued dependencies are defined in database? State and explain the rules about functional
     dependencies.

OR

5   What is Relational Algebra? List all the relational algebra operators. Explain following operations: SELECT,
     PROJECT, UNION, CARTESIAN.

UNIT – III

6 (a) What are Triggers? Explain the different types of Triggers using suitable example
   (b) What is a View? Explain the syntax. Explain the different types of views.

OR

7 (a) Explain DDL and DML types of SQL commands. Give the syntax for the following SQL commands: SELECT,
        INSERT INTO.
   (b) What is a Transaction? Explain the properties of the transaction. Explain the States of the transaction with a
        neat sketch.

UNIT – IV

8   What is Indexing? State and explain in detail the following: Multi level Index, B-Tree Index and B+ Tree index.

OR

9   Compare and contrast the closed and open hash techniques in database applications.

UNIT – V

10   Explain the following with example:
  (a) Conflict Serializability.
  (b) Methods for representation of variable-length records.

OR

11 (a) Discuss the validation concurrency control technique.
   (b) What is Locking? Explain the 2 Phase locking technique and its types.