B.Tech II Year II Semester (R15) Regular Examinations May/June 2017
DATABASE MANAGEMENT SYSTEMS
(Computer Science and Engineering)

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 model?
  (b) What is the difference between Strong and weak entity?
  (c) Define relational algebra. Give the general form of SQL query.
  (d) Explain the use of assignment operator in relational algebra with an example.
  (e) What is the need for trigger?
  (f) What are primary keys and foreign keys?
  (g) What is a recovery scheme?
  (h) What are the problems with static Hashing?
  (i) What is log-based recovery?
  (j) Explain recovery with concurrent transactions.

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

UNIT – I

2   Distinguish the terms with figures:
      (i) Attribute. (ii) Schema. (iii) Tuple. (iv) Domains. (v) Relation instances.
OR
3   Consider a database used to record the marks that students get in different exams of different course offering. Construct an E-R diagram that model exams as entities, and uses a ternary relationship for the database.

UNIT – II

4 (a) Write short notes on tuple relational calculus.
   (b) What is the use of sub queries? Explain with example.
OR
5   Explain in detail DDL (Data Definition Language), DML (Data Manipulation Language) and DCL (Data Control Language) commands in SQL with suitable examples.

UNIT – III

6   Explain the process of normalization from 1NF to BCNF stage with example.
OR
7   Given R (A, B, C, D, E) with the set of FDs, F{AB→CD, ABC→E, C→A}.
   (a) Find any two candidate keys of R.
   (b) What is normal from of R? Justify.

UNIT – IV

8   Explain Timestamp-Based Concurrency control protocol and the modifications implemented in it.
OR
9   Describe about the deadlock prevention schemes.

UNIT – V

10   Explain the structure of B^+ tree. How to process queries in B^+ tree?
OR
11   Explain the index schemas used in database systems.
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