

Code: 15A05301

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)

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 form 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 – V10 Explain the structure of B⁺ tree. How to process queries in B⁺ tree?**OR**

11 Explain the index schemas used in database systems.