Code: 13A05402 **R13**

B.Tech II Year II Semester (R13) Regular Examinations May/June 2015

DATABASE MANAGEMENT SYSTEMS

(Common to IT and CSE)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) Define database management system.

(b) In E-R model, multi-valued attributes, strong and weak entity sets are graphically represented by which symbols?

(c) What is data independence?

(d) List and explain set operators of relational algebra.

(e) Differentiate UNIQUE and primary key constraints.

(f) Explain ACID properties.

(g) List out different indexing techniques.

(h) Explain Undo/ Redo logging.

(i) List different lock modes in locking system.

(j) Differentiate trigger with assertions.

PART – B

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

UNIT – I

2 Discuss in detail about different types of database models.

OR

3 Explain about Relational design from ER diagrams with examples.

UNIT – II

4 (a) Explain about serializability.

(b) Explain different types of locks.

OR

5 (a) Differentiate BCNF with 3rd normal form.

(b) Explain about denormalization.

UNIT – III

6 (a) Explain about B trees.

(b) Explain about bit map indices.

OR

7 (a) What is the difference between static hashing and dynamic hashing?

(b) Explain about variable length records with examples.

UNIT – IV

8 (a) How concurrency can be controlled using time stamp methods?

(b) How the concurrency can be controlled with locking methods?

OR

9 Explain about deadlock and 2-phase locking to ensure serialziability in concurrency control with locking methods.

UNIT – V

10 (a) Explain the following with suitable example:

(i) Non- Loss decomposition. (ii) Prime Attributes.

(b) If R={ A,B,C,D,E} and FD's.

F= {A -> C, AC -> D, E -> AD, E ->H} List all the candidate keys.

OR

11 (a) Explain the following with suitable example.

(i) Full functional dependency. (ii) Partial dependency.

(b) If R= {A, B, C, G, H, I} and FD's are

F= {A->B, B->HI, CG->H} Why R is not in 4NF? Explain.

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