Code: 13A05402 **R13**

B.Tech II Year II Semester (R13) Supplementary Examinations May/June 2017

DATABASE MANAGEMENT SYSTEMS

(Common to CSE & IT)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

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

(a) Differentiate between logical and physical data independence.
(b) Define schema and degree of relationship.
(c) Define fully functional dependency.
(d) Define a superkey of a relation R.
(e) What do you mean by enterprise constraint? How it is supported in SQL.
(f) Explain the ACID properties of a transaction.
(g) Define a schedule of a transaction.
(h) Suppose blocks hold either three records or ten key pointer pairs. As a function of n, the number of records, how many blocks do we need to hold data file and dense index?
(i) Explain the COMMITT and ABORT commands of SQL.
(j) What is the condition for 2PL?

PART – B

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

UNIT – I

2 (a) Define cardinality ratio. Explain its different types with an example.
(b) Discuss the different notations used in E-R diagram.

OR

3 Explain with an example, how do you convert the E-R diagram into relational schema.

UNIT – II

4 Consider the following relation and functional dependencies. Check whether they are equivalent or not.
R(A,B,C,D,E,F)
F1={A->C,AC->D,E->AD,E->F) F2={A->CD,E->ADF}

OR

5 (a) Explain any two set theoretic operations of relational algebra with an example.
(b) Explain the DIVISION operation with an example.

UNIT – III

6 Explain different clauses of SELECT with an example.

OR

7 Consider the following relational schema Sailors(sid: integer, sname: string, rating: integer, age: real)
Boats(bid: integer, bname: string, color: string)
Reserves(sid: integer, bid: integer, day: date)
Write the SQL statements to implement the following.
(i) Find the names of sailors who have reserved boat number 103.
(ii) Find the names of sailors who have reserved at least one boat.
(iii) Find the names of sailors who have reserved both a red and a green boat
(iv) Find the names of sailors who have reserved all boats

Contd. in page 2

UNIT – IV

8 Explain the following in brief:
(a) Sparse index
(b) Dense index.

OR

9 (a) Explain the structure of a B-tree node.
(b) Discuss the advantages of hashing and types of hashing.

UNIT – V

10 (a) Explain the lock_item(X) ans unlock_item(x) operations on binary locks.
(b) Discuss the different modes of failures.

OR

11 Explain how recovery is done using undo logging and redo logging.

*****