PVP 12

Code: CS5T2, EM5T3

III B.Tech - I Semester – Regular Examinations - November 2015

DATABASE MANAGEMENT SYSTEMS
(Common for CSE & ECM)

Duration: 3 hours Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1 a) Discuss the different types of user-friendly interfaces and the types of users who typically use each. 6 M

b) Define the following terms. 8 M

i) Data Independence ii) Persistent Object

iii) Meta Data iv) Database Catalog

2 a) What are the different Constraints Supported in SQL? 6 M

b) Answer each of the following questions briefly. The questions are based on the following relational schema: 8 M

Emp(*eid:* integer, *ename:* string, *age:* integer, *salary:* real)

Works(*eid:* integer, *did:* integer, *pct_time:* integer)

Dept(did: integer, *dname:* string, *budget:* real,

managerid: integer)

i) Write an SQL statement to add John Doe as an employee with *eid*= 101, *age* = 32 and *salary* = 15,000.

ii) Write an SQL statement to give every employee a 10 percent raise.

iii) Write an SQL statement to delete the Toy department. Given the referential integrity constraints you chose for this schema, explain what happens when this statement is executed.

iv) Write an SQL statement to retrieve all employee id's(eid) who are working in department(did) 100.

3 a) Consider the following schema:

Suppliers(*sid:* integer, *sname:* string, *address:* string)

Parts(pid: integer, *pname:* string, *color:* string)

Catalog(*sid:* integer, *pid:* integer, *cost:* real)

The key fields are underlined, and the domain of each field is listed after the field name. Therefore *sid* is the key for Suppliers, *pid* is the key for Parts, and *sid* and *pid* together form the key for Catalog. The Catalog relation lists the prices charged for parts by Suppliers. Write the following queries in domain relational calculus: 10 M

i) Find the *names* of suppliers who supply some red part.

ii) Find the *sids* of suppliers who supply some red or green part.

iii) Find the *sids*of suppliers who supply some red part or are at 221 Packer Ave.

iv) Find the *sids* of suppliers who supply some red part and some green part.

v) Find the *sids* of suppliers who supply every red or green part.

b) What is meant by join? Explain in detail. 4 M

4 Construct ER Diagram for a Library Management System. Identify entities, roles, weak entity sets if any, IS A relationship if any. 14 M

5 a) Consider the relation schema

R = (E, F, G, H, I, J, K, L, M, N) and the set of functional dependencies

{{E,F}→{G},{F}→{I, J},{E,H}→{K,L} , {K}→{M}, {L}→{N}}on R.

What are the candidate keys for R? 7 M

b) What is the purpose of Normalization? Why is it done? Explain about 1NF, 2NF, 3 NF. 7 M

6 a) Explain RAID Technology. 7 M

b) What is the difference between single level index & multi level index with examples. 7 M

7 a) What are the desirable properties of Transactions? 8 M

b) What is the purpose for Using Locks for Concurrency Control in Indexes. 6 M

8 a) What are the log Sequence Numbers(LSNs) in ARIES? How are they used? 5 M

b) What information does the Dirty page Table and Transaction Table contain? 5 M

c) Describe how Fuzzy Check pointing is used in ARIES? 4 M