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B. E. 4th Semester (I.T.) Examination,

May-2013

DATABASE MANAGEMENT SYSTEM

Paper-CSE-202-E

Time allowed : 3 hours]

[Maximum marks : 100

Note : Attempt any five questions. All questions carry equal marks.

1. Write short notes on :

(a) Client server architecture

(b) Hashing

(c) BCNF

(d) Data mining.

4×5=20

2. What is DBMS ? Explain the task advantages of DBMS over file-processing system. 20

3. Construct an ER diagram for a 'Railway-ticket management system'. Considering a set of customers, each of whom can book one or more ticket and also cancel tickets. 20

4. What are B-trees ? How and where can they be used ?
Discuss their organization. 20

5. Consider the following relations for a database that keeps track of business trips of salespersons in a sales office : 20

Salesperson (Id-n θ , Name, Date-of joining,

Deptt-name) Trip (Id-n θ , From-city, To-city,

Departure-date, Return-date, Trip-Id)

Expense (Trip-Id, Account-n θ , Amount)

Do mention any assumptions and foreign keys for above scheme. Also specify, following queries in relational algebra :

- (a) Print name of all salespersons, who took trip to 'Dalhousie'.
- (b) Give details (all attributes of 'Trip' relation) for trips that exceeded Rs. 10,000 in expenses.
- (c) Print total trip expenses incurred by salesperson with Id - '2804-2013'.

6. Explain how normalization handles database design Issues. Elaborate the normalization process with suitable examples. 20
7. What is two-phase locking protocol ? How does it give/guarantee serializability ? 20
8. What are potential advantages and additional functions of distributed database management system over a centralized database management system.