

322516 (22)BE (5th Semester)

Examination, Nov.-Dec., 2014

Branch : CSE

DATABASE MANAGEMENT SYSTEM*Time Allowed : Three Hours**Maximum Marks : 80**Minimum Pass Marks : 28***Note :** (i) All questions carry equal marks.

(ii) Part a of each question is compulsory.

(iii) Solve any two out of part b, c and d.

Q. 1. (a) What is weak entity ? **2**(b) Differentiate between DBMS and file processing system. **7****322516 (22)****R.T.O.**

(c) What is data model ? Describe different type of data models with proper example.

(d) What is data abstraction ? Describe various levels of data abstraction ?

Q. 2. (a) What is view ?

(b) What is SQL ? Discuss DDL and DML with example in detail.

(c) What is relational algebra ? What are the different operations that are performed in relational algebra.

(d) Specify the following queries in SQL on given database schema given :

322516 (22)

(3)

Employee (Empno, Ename, Bdate, SSN,
address, designation, salary, Dept
No., joindate)

Department (Deptno, Dname, Dlocation)

Project (Pno, Pname, Deptno., plocation)

Works_on (SSN, Pno, hours)

- (1) Retrieve the name and address of all employees who work for research department.
- (2) Retrieve all employees in department 5 whose salary is between 30,000 and 40,000.

22516 (22)

P.T.O.

(4)

- (3) Retrieve list of employees and the projects they are working on, ordered by department and within each department ordered alphabetically by employee.
- (4) Retrieve the resulting salaries of every employee working on the ERP project is given 20% raise in salary.

- Q. 3. (a) What is functional dependency ? 1
- (b) What is 3NF ? How BCNF is different from 3NF ? Explain with example ? 1
- (c) What is join dependency ? Explain projection join normal form with example. 1

322516 (22)

- (d) Given a relation schema $R(A, B, C, D)$ and a set of FDs.

$A \rightarrow BC$

$B \rightarrow C$

$A \rightarrow B$

$AB \rightarrow C$

$AC \rightarrow D$



Compute an irreducible set of FDs that is equivalent to this set. 7

- Q. 4. (a) What is Transaction ? 2
- (b) List the ACID properties of Transaction. Explain the usefulness of each. 7
- (c) Explain various stages of query processing with neat diagram. 7

322516 (22)

R.T.O.

- (d) Explain serializability with suitable example. 7

- Q. 5. (a) Give two reasons for allowing concurrency. 2
- (b) Compare deferred update and immediate update recovery techniques with example. 7
- (c) Explain how locking of data item is helpful in transactions of database. 7
- (d) Write short notes on : 7
- (i) Shadow paging
- (ii) Time-stamp ordering.

www.csvtuonline.com

322516 (22)