

Total No. of Questions : 10 ] [ Total No. of Printed Pages : 5

Roll No. ....

## CS/IT-503(O)

**B. E. (Fifth Semester) EXAMINATION, June, 2010**

**(Old Scheme)**

**(Common for CS & IT Engg. Branch)**

**DATABASE MANGEMENT SYSTEM**

*Time : Three Hours*

*Maximum Marks : 100*

*Minimum Pass Marks : 35*

**Note :** Attempt *five* questions in all selecting *one* question from each Unit. All questions carry equal marks.

### Unit-I

1. (a) Explain three level Architecture. What are its objectives ? 10
- (b) Develop an ER diagram for library management system. 10

*Or.*

2. (a) Draw an E-R diagram for sales and purchase management system. 10
- (b) Explain the distinction between specialization and generalization concept. What is meant by the aggression ? 10

200.

**Unit – II**

3. (a) Solve the following with Relational Algebra. Consider the following database : 12

S (S#, SName, Status, City)

P (P#, PName, Color, Weight)

SP (S#, P#, QTY)

- (i) Get supplier names for suppliers who supply part P<sub>2</sub>.
  - (ii) Get supplier numbers for supplier who supply at least one red part.
  - (iii) Get supplier numbers for suppliers who supply at least all those parts supplied by supplier S<sub>2</sub>.
  - (iv) Get supplier names for suppliers who do not supply part P<sub>2</sub>.
- (b) What are the integrity rules ? Explain with examples. 8

*Or*

4. Solve the following with QUEL Tuple calculus. Consider the following database :

EMP (empno, ename, Job, mgr, hiredate, sal, comm, deptno.)

DEPT (deptno, dname, loc) 20

- (i) Get the name of all employees working for the "Sales" department.
- (ii) Get the name, location of department of all employees whose pay is less than Rs. 10,000.

**Unit – III**

5. (a) Solve the ahead with SQL. Consider the following data-base : 15

S (SNo, Sname, city, status)

P (Pno, Pname, Color, Weight)

SP (SNo, Pno, QTY)

- (i) Get supplier number who supplies maximum quantity.
  - (ii) Get supplier number who supply quantity greater than average quantity.
  - (iii) Increase the Quality of Part  $P_1$  by 10%.
  - (iv) Get color of parts supplied by  $S_1$ .
  - (v) Get supplier name who supply at least one red part.
- (b) What is the difference between Tuple Calculus and Domain Calculus ? 5

*Or*

6. (a) Assume the following tables : 15

Degree (deg code, name, subject)

Candidate (Seat no, degcode, name, semester, month, year, result)

marks (seatno, degcode, semester, month, year, Rapcode, marks)

Solve the following queries using SQL :

- (i) Write the SELECT Statement to display all the degree codes which are there in the candidate table but not present in the degree table in the order of degcode.
- (ii) Write a SELECT Statement to display the names of all candidates who have appeared for their M. Sc. (Phy.) examination in the order of name.

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- (iii) Write a SELECT Statement to display the name, subject, and number of candidates for all degree in which there are less than 5 candidates.
  - (iv) Write a SELECT Statement to display the names of all the candidates who have got less than 40 marks in exactly two subjects.
  - (v) Write a SELECT Statement to display the names of all the candidates who have got highest total marks in M. Sc. (Maths).
- (b) What is the importance of view and sequence ? 5

#### Unit-IV

7. (a) Explain the following in brief : 12
- (i) What are stored procedures ?
  - (ii) What is data fragmentation ?
  - (iii) What is the difference between file server and client server system ?
  - (iv) What are triggers ? What purpose do they serve ?
- (b) Explain the similarities and dissimilarities between BCNF and 3rd normal form. 8

Or

8. (a) Normalize the following database : 8  
(empno, ename, job, sal, doj, mgr, deptno, dname, loc).
- (b) Write short notes on the following : 12
- (i) Two phase locking
  - (ii) Security and Integrity of Data
  - (iii) Grant and Roll back

#### Unit-V

9. (a) Explain the different CODD rules. 12

(b) Write short notes on the following : 8

- (i) Data redundancy
- (ii) Object oriented database

*Or*

10. Describe the following relational operators : 20

- (i) UNION
- (ii) DIFFERENCE
- (iii) INTERSECTION
- (iv) CARTESIAN PRODUCT
- (v) Projection