M.Sc. 2nd Semester Examination, 2013

ADVANCE DBMS LAB.

(Practical)

PAPER—COS-205(A & B)

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

COS-205(A)

Marks : 25

Time : 3 hours

Answer any **one** question

3. Consider the following schema :

BRANCH (bname, bcity, assets)
LOAN (loanno, bname, amount)
BORROWOR(accno, bname, balance)

Write SQL query for the following :

(*i*) Create the above tables and insert data.

(*ii*) Find the names of all branch that have assets greater than at least one branch located in "Midnapore".

(*iii*) List the entire loan relation in descending order of amount. If several loans have the same amount than order them in ascending order by loan number.

(*iv*) Find the average account balance of those branches where the average account balance is greater than 3500.

(*v*) Find the branch name, assets, loan number, amount borrower account number, balance of all borrowers.   3 × 5

4. Consider the following schema :

WORKING (professorname, collegename, salary)
LIVING (professorname, street, city)
LOCATED(collegename, city)

Write SQL queries for the following :

(*i*) Create the above table and insert data.

(*ii*) List the names of the professor and the cities they live in, who are working for college CI.

(*iii*) Add a unique constraint for the attribute professorname in WORKING table.

(*iv*) Find the details of the professor who resides in same city as college city for which they work for.

(*v*) Change the length of an attribute city in living table.   3 × 5

5. Consider the following entities and relationship :

Branch (Br_id, Br_name, Br_city)
Customer (Cus_no, cus_name, cus_addr, cus_city)
Loan-application (Lo_no, Lo_amt_required,
    Lo_amt_approved, Lo_date)
Ternary (Br._id, cus_no, lo_no.)

Branch, customer and loan-application are related with ternary, relationship as shown in above relations. Solve the following queries :

(a) List the names of the customer who have received loan less than their requirement.

(b) Find out total amount of loan sanctioned by "Station Road" branch.

(c) Count the number of loan applications received by "Deccan Gymkhanna" branch.

(d) List the names of the customer along with the branch names who have applied for loan in the month of september.   3 + 3 + 4 + 5

6. Consider the following entities and relationships :

   Item (item_no., item_name, reorder_level, Qty, rate)

   supplier (s_no. s_name, s_addr, s_city)

   Itsup (item_no, s_no)

   Item and supplier are related with many to many relationship, as shown in above relations. Solve the following queries.

   (a) Find the name and city of suppliers, supplying the items are to be ordered.

   (b) Find the name and the rate of the items supplied by suppliers in "Bangalore" city.

   (c) List the names of items along with total number suppliers who supply the item of the maximum cost.

   (d) List the names of the suppliers who supply the item of the maximum cost.

   (e) Increase the rates of the items supplied by "Mr. Khan" by 20%.   2 + 2 + 3 + 4 + 4

7. Consider the following relation :

Student (rollno, name, branch)

Write SQL query for the following :

(i) Create the above tables and insert data

(ii) Alter table by adding new column class

(iii) Delete a row from the table

(iv) Drop column branch

(v) Delete all the data brom student table

(vi) Delete the table. $3 + 3 + 3 + 3 + 1 + 2$

8. Consider the following relations :

Emp(Empno, Ename. Job, Mgr, Hiredate, Sal, Comm, Deptno)
Dept(deptno, Dname, Loc)

Write SQL query for the following :

(*i*) Create the above tables and insert data

(*ii*) Retrieve all employees who are working in dept 10 and earn salary at least as much as any employees working in dept 30.

(*iii*) List all the employees who are not working in dept 30 and who warn more than all the employees working in dept 30.

(*iv*) Display all manager (job = manager) in descending order of hire date.

(*v*) Select the employee whose name is not SMITH or BLAKES or SCOTT

(*vi*) Display all data of employee if he is not acting as a manager for other employees.

$$3 + 3 + 3 + 2 + 2 + 2$$

9. Consider the following relations :

Employee (employee_name, street, city)
Works (employee_name, company_name, salary, doj)
Company (company_name, city)
Manager (employee_name, manager-name)

Write SQL query for the following :

(*i*) Create the above tables and insert data

(*ii*) Find all employees in database who live in the city 'chennai' and under the manager 'John'.

(*iii*) Find all employees who earn more than the average salary of all employees of that company.

(*iv*) Find the no. of employees in each company.

6 + 3+ 3 + 3

(Turn Over)

10. Consider the following relations :

Department (dept_id, dept_name)
Student (rollno, name, gender, mark 1. mark 2,
          mark 3, total, average, dept_id)
Staff(staff_id, name, designation, qualification,
     dept_id)
Tutor (rollno, staff_id)

Write SQL query for the following :

(*i*) Create the above tables and insert data

(*ii*) Display the Student details who come under the tutor ship of the given staff name "S Roy".

(*iii*) Display the student details who got greater than overall avarage marks of their department.

(*iv*) How many students are there in CSE department ?   6 + 3+ 3 + 3

11. Consider the following relations :

    Branch (bname, bcity, assets)
    Account (ano, starting date, balance)
    Customer (cusid, name, address)
    Deposit (ano, cusid, bname)
    Transaction (ano, amount, mode, date of trans)

    Write SQL query for the following :

    (*i*)   Create the above tables and insert data

    (*ii*) Find the average account balance at each
            branch and display only if it is greater than
            10000.

    (*iii*) Display the branch details located in a city
            starting with the letter 'S'..

    (*iv*) Find the number of depositors in each
            branch.   6 + 3 + 3 + 3

12. Consider the following relations ;

Party (pid, pname, leader)
Constituency (cid, cname)
Contestant (ctid, ctname, ctaddr)
Election (ctid, number of votes, pname, cname)

Write SQL query for the following :

(*i*) Create the above tables and insert data

(*ii*) Diaplay the contestant details if they secured greater than 10,000 votes.

(*iii*) Find the number of contestants, constituency wise.

(*iv*) Display the winner details in each constituency. $6 + 3 + 3 + 3$

Viva-voce — 05 Marks

Practical Note Book — 05 Marks

COS–205 (B)

MODULE – II

Marks : 25

Time : 3 hours

(*Algorithm Lab.*)

Answer any **one** questions (Lottery basis)

1. Write a program to search a given number using binary search.   15

2. Write a program to implement merge sort algorithm. Use this program sort the array.   15

32	15	14	15	11	17	19	51

3. Write a program to implement Quick sort algorithm. Use this program sort the array.   15

| 12	25	17	19	51	32	45	18	22	37	15

4. Write a program to solve the matrix chain multiplication problem.   15

5. Write a program to implement Floyd-Warshall algorithm. Use this program find the distance matrix for the directed graph with the lengths of the edges between all pairs of vertices are as given by the matrix. 15

$$\begin{pmatrix} 0 & 1 & \infty & 2 \\ 2 & 0 & \infty & 2 \\ \infty & 9 & 0 & 4 \\ 8 & 2 & 3 & 0 \end{pmatrix}$$
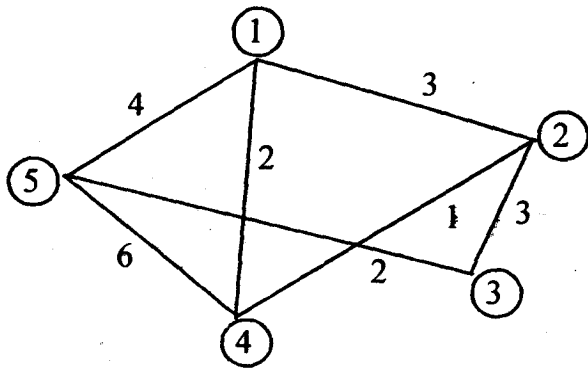
6. Write a program to find the product of two matrics using dynamic programming method. 15

7. Write a program to implement Dijkstra's Algorithm. Use this program Find the shortest path from the vertex 1 to 4 of the following directed graph. 15
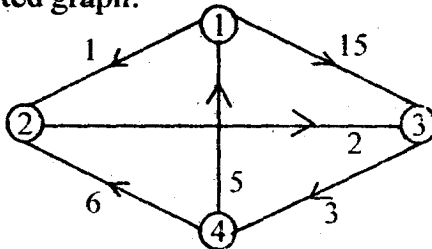
8. Write a program to implement prim's algorithm. Use this program find the minimum cost of a spanning tree of a connected weighted undirected graph. 15

Viva-voce — 05 Marks

Practical Note Book — 05 Marks

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