2015

M.Sc.

2nd Semester Examination

COMPUTER SCIENCE

PAPER—COS-205

(Practical)

Full Marks : 50

Time : 3 Hours

The questions are of equal value.

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Group—A

(Advance DBMS Lab)

Answer any *two* question :   15×1

1. Draw an E-R diagram for the following system:

Suppose you are asked to design a club databse system based on the following information. Each student has a Unique student id, a name and an email; each club has a Unique club id, a name, a contact telephone number, and has exactly one student as its president. Each student can serve as a president in atmost one of the clubs, although he/she can be the members of several clubs. Clubs organize activities and students can participate in any one of them. Each activity is described by a Unique activity id, a place, a date, a time and those clubs organize it. If an activity is organized by more than one club, different clubs might contribute different activity fees.

(i) Draw an E-R diagram for the system (Write down your assumptions if necessary).

(ii) Translate the above E-R diagram to a relational model. (Specify your primary and foreign key constraints clearly).

2. Consider the following schema :

Emp (empno, ename, deptno, job, mgr, hiredate, salary)

Dept (Dno, Dname, Dlocation)

(i) Dislpay all employees who were hired during 1983.

(ii) To display the average monthly salary bill for each job type within department.

(iii) List lowest paid employees working for each manager.

(iv) Find all departments which have more than 4 employees.   4×5

3. Write a PL/SQL program to increase the salary by 10% if salary greater than Rs. 5000 for employee number 20.

4. Create the following schema :

   SUPPLIERS (sid, sname, address)

   PARTS (pid, pname, color)

   CATALOG (sid, pid, cost)

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

   (ii) Find number of parts supplied by at least two different suppliers.

   (iii) Find the suppliers number who supply some green part but not red part.

   (iv) List the suppliers name who supply a 'bolt' whose price is under Rs. 100 or whose color is pink.

                                                        4×5

5. Write a PL/SQL that reads a complete record for given . employee in a user define record variable. If the employee salary is more than Rs. 8000 then the employee's name and salary are displayed.

6. (i) Implement the following database (*fig. 1*) using SQL expression.
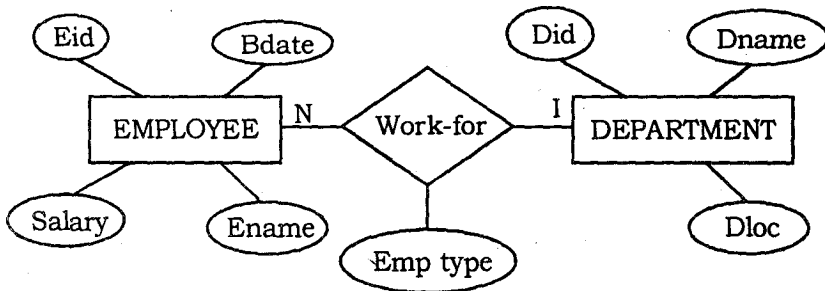
N.B. Take necessary attributes for designing the above database as required.

Fig 1 : ER diagram for Emp_dept database.

(ii) Answer the following queries using SQL expression.

(a) Find out the number of employees belongs to same Department joined on same date.

(b) Find out the total number of part–time employees for each department.

(Continued)

7. (a) Create your own table Emp_(your Roll No.) and Dept_(your Roll No.) with the same structure and data as EMP and DEPT of SCOTT User and perform the following queries:

    (i) Display dept. and employees whose salaries exceed the avg for their dept.

    (ii) Display each departmental total number of employees and salaries as percentage of total employees and salaries of All depts.

  (b) Write a PL/SQL code to find the sum of maximum and minimum salary of all the employees (of EMP table) and display the result.   10+10

8. (a) Create your own table EMP_(your Roll No.) and DEPT_(your Roll No.) with the same structure and data as EMP and DEPT of SCOTT User and perform the following queries:

    (i) Write select statement that select maximum and minimum salaries for the 'CLERK' in each department whose lowest salary is below Rs. 1000.

(ii) Create a view with following fields Eno, Ename, Dname and use it toretrieve data.

(iii) Display total number of employees hired for each month.

(b). Write a PL/SQL function to find factorial of N, N is integer.   10+10

Viva–Voce   5

Practical Note Book   5

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