2017

BCA 3rd Semester Examination

DBMS LAB.

PAPER—2196 (Set-II)

(Practical)

Full Marks : 100

Time : 3 Hours

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.

Answer any *two* questions (Lottery Basis).   2×25

1. Consider the following relations :

   > Flights (fno, from, to, distance, departs)
   > Aircraft (aid, aname, range)
   > Certified (eid, aid)
   > Employees (eid, ename, salary)

   (Pilots are those employees who are certified on at least one aircraft. An aircraft can be used for any flight provided it has sufficient range. Pilots can pilot any flight provided they are certified on an aircraft with sufficient range.)

   Write down expressions in SQL for the following queries :

   (a) Find names of pilots who are certified on Boeing.

   (b) Find aid's of aircraft that can fly non-stop from LA to NY.

   (c) Find eid of employee(s) with the second highest salary.

   (d) Find names of pilots who can operate planes with a range greater than 3,000 miles.

   (e) Find eid's of employees certified on exactly three aircraft.

2. Sales (order_no, cust_no, order_date)
   Customer (cust_no, cust_name, cust_addr)

   (a) Create the above database using SQL.

   (b) Display the name of the customers who have placed order last month.

   (c) Arrange names of the customers according to alphabetical order of their names.

   (d) Add a constraint to check that the first letter of name of customer must be capital.

   (e) List names of the customers with the placed order and arrange them according to order date.

3. Create the tables described below with the constraints / attributes specified

Table Name : **EMP1_XX** (**XX ⇒ Last two digits of your class roll number**)
Description : Used to store employee information

Column Name	Data Type	Size	Constraints / Attributes
Empno	Number	4	Primary key, values between 7000 and 7999
Ename	Varchar2	20	Not null, Name must be in Upper case
Deptno	Number	2	
Job	Varchar2	15	Not null
Mgr	Number	4	Foreign key references Empno of EMP1_XX, Values between 7000 and 7999
HireDate	Date		Not null
Salary	Number	5	Default 0

(a) Display all the different job types.

(b) Display all employees who were hired during 1983.

(c) Find highest salaried employee.

4. Emp (Empno, Ename, Job, Sal, Deptno)
Department (Dnumber, Dname, Loc)

(a) Create the above database using SQL.

(b) List all employees who have a salary between 1500 and 2500.

(c) List the details of the employees in departments 10 and 20.

(d) Display all employees' names which have TH in last position of their names.

(e) To show all employees hired on February 22, 1981 (non-default format).

5. Relation schema :

Employee (Employee_no, Employee_name, designation, Salary, Hiredate, Department_no, Manager_name)
Department (Dnumber, Dname, Location)

(a) Find employees whose commission is greater than 60% of their salaries.

(b) Find the names of anyone in dept. 20 who is neither manager nor clerk.

(c) Find the employees who do not receive commission or whose commission is less than 100/-.

(d) Find all the employees who were hired more than 2 years ago.

(e) List the employee names, department names and salary for those employees who have completed 1 year of service.

(Turn Over)

6. For the following relation schema :

employee(employee-name, street, city)

works(employee-name, company-name, salary)

company(company-name, city)

manager(employee-name, manager-name)

Give an expression in SQL for each of the following queries :

(a) Find the names of all employees in the database who live in the same cities as the companies for which they work.

(b) Find the names of all employees in the database who live in the same cities and on the same streets as do their managers.

(c) Find the names of all employees in the database who do not work for 'First Bank Corporation'. Assume that all people work for exactly one company.

(d) Find the names of all employees in the database who earn more than every employee of 'Small Bank Corporation'. Assume that all people work for at most one company.

(e) Assume that the companies may be located in several cities. Find all companies located in every city in which 'Small Bank Corporation' is located.

7. The given database schema is

Employee(FName, Initial, Lname, ENO, DOB, Address, Sex, Salary, Supereno. Dno)

Department(Dname, Dnumber, mgreno, mgrstartdate)

Dept_location(Dnumber, Dlocation)

Project(Pname, Pnumber, plocation, dnum)

Works_on(EENO, PNo, hours)

Dependent(EENo, Dependent_Name, Sex, BDate, Relationship)

Write the queries in SQL with the above schema

(a) Retrieve the name and address of all employees who work for the 'Research department'.

(b) List the project numbers for projects that involve an employee whose last name is 'Kumar', either as a worker or as a manager of the department that controls the project.

(c) For each department, retrieve the department name and the average salary of all employees working in that department.

(d) List the names of all employees who have a dependent with the same first name as themselves.

(e) Retrieve the average salary of all female employees.

8. Patient(p_id, p_name, p_age, p_address)
   Doctor(d_id, d_name, d_add)
   Attend(d_id, p_id)
   Admitted(p_id, p_date_of_admission)

   (a) List the names of patients with their doctor.

   (b) Find the names of the doctors who attend more than three patients.

   (c) Find name of the patient who lives at the same place as his/her doctor.

   (d) Find name of the patient who are admitted before other.

   (e) Count total number of patients and total number of doctors.

9. Borrower(customer-name, loan-number)
   Depositor(customer-name, account-number)
   Customer(customer-name, street-number, customer-city)
   Loan(loan-number, branch-name, city, amount)

   (a) List all the customers who have either an account or a loan or both.

   (b) Find the names of all customers who have an account but not a loan.

   (c) List the names of all customers who have a loan in 'Perryridge' branch.

   (d) List all the customers who have both a loan and an account.

   (e) Find total number of customers who have at least one loan.

10. Student(sid, sName, sPhone, sProgramme)
    Subject(subid, subName, Instructor)
    Marks(sid, subid, MarkNo)

    Write the queries in SQL with the above schema

    (a) Create the above database using SQL.

    (b) List subject name and its instructor in alphabetical order.

    (c) Find the name of all students whose name starts with AB.

    (d) Add a constraint PRIMARY KEY to subid.

    (e) Find the names of the students who have passed in all subjects.

Viva — 15 Marks

P.N.B. — 05 Marks

Internal Assessment — 30 Marks

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