2016

COMPUTER SCIENCE — HONOURS — PRACTICAL

Seventh Paper

(Group – B)

Full Marks – 50

The figures in the margin indicate full marks

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

THIRD DAY

Answer ***any one*** question

Marks Distribution :		
Marks in Assignment	:	05
Marks in viva voce	:	10
Marks in Experiment	:	35
Table creation	:	06
Tuple Insertion	:	03
Tuple insertion through SQL	:	03
Queries through SQL	:	09(3×3)
User Interface design	:	04
Connection with backend	:	02
Frontend functions as per question	:	08(4×2)

1. Design a database for salesperson Tour Management System as follows: 35

Salesperson (SSN, Name, Start_yr, Dept_no)
Trip (Trip_id, SSN, From_city, To_city, Dep_date, Return_date)
Expense (Trip_id, Acc_no, Expenses)

Create the above relations using SQL specifying the integrity constraints. Insert at least six tuples in each table so that the following queries yield some results :

(a) Print salesperson's name, trip_id, departure city for all trips exceeding Rs. 10,000/- in expenses.

(b) Print the SSN of salesman who took trips to Delhi more than two times in the current year.

(c) Print total trip expenses incurred by salesman with SSN = '12345' and from city = 'kolkata'.

Create a user interface for the above application. Incorporate the following in your design :

(i) Keep a check so that the From_city and To_city are not same for a trip of a salesperson, and also Enter the dates using calendar control.

(ii) Design a form for logging into the system. The form should have text boxes with labels to input username and password. The application should open only for correct combination of username and password.

(iii) Design a form to view the contents of the salesperson table in text boxes. Include command buttons on clicking of which the previous and the next records are shown with respect to the current record.

(iv) In the above form, include command buttons on clicking which tuples can be inserted into and deleted from salesperson table.

2. Design an Employee Records System having the database as follows : 35

Employee (emp_name, street, city)

Company (company_name, city)

Manages (emp_name, manager_name)

Works (emp_name, company_name, salary)

(a) Find the names of all employees who live in the same city as the company for which they work.

(b) Assume that the companies may be located in several cities. Find all companies located in Kanpur and the details of the employees working there.

(c) Find the names of all employees who live in the same city and on the same street as their managers do.

Create an user interface for the above application. Incorporate the following in your design :

(i) Input, view, modify and delete any two tables in separate forms so that all integrity constraints are maintained.

(ii) Show proper error message if any manager manages more than 10 employees.

(iii) Use option buttons to select city names from at least three cities.

(iv) Keep a check on the salary so that it does not exceed Rs. 10,000/- for any employee of any company.

3. Design a Order Maintenance System as follows : 35

Customers (cid, cname, city)

Agents (aid, aname, city)

Products (pid, pname, quantity, price, colour)

Orders (orderno, date, cid, aid, pid, quantity, Rupees)

Create the above relations using SQL specifying the integrity constraints. Insert at least six tuples in each table so that the following queries yield some results :

(a) Give the names of the agents who have ordered maximum number of times.

(b) Give the details of the customers who have not ordered any 'black' product.

(c) Add a column phone number in the customers table which is not null.

Create a user interface for the above application. Incorporate the following in your design :

(i) Use dropdown menu for the city field of the customers and Agents tables.

(ii) Check whether the colours of the products are red, black, green and white.

(iii) Use calendar control to input the date.

(iv) Check the names of the agents so that they donot start with X, Y or Z.

4. Design an Operating Theatre Monitoring System having the following database : 35

Doctor (Regnno, DrName, Specializes_in, PhNo) [Regnno is Registration number]

Patient (Pid, Pname, Address, Phno, Age, Sex)

Operation (Oid, Regnno, Pid, OTdesc, OTdate, OTtime, OTbedno)

Create the above tables in SQL specifying all the integrity constraints. Insert atleast six tuples in each table so that the following queries yield some results :

(a) List the name and details of the oldest patient operated by Dr D. Sen in the last seven days.

(b) List the details of all doctors who did not perform any operation on 12th July 2015.

(c) List the names of specialist Doctors in cardiology who have performed more than one operation on 7th September 2015 during the morning shift (i.e. from 7 am to 12 noon).

Create an user interface and incorporate the following :

(i) Input and modify data in Doctor table using separate forms so that the integrity constraints are preserved.

(ii) Insert the specializes in field using drop down menu. The choices are Cardiologist, Urologist, Gynaecologist and Oncologist.

(iii) Insert the time using timer control.

(iv) Keep a check on the phone number of the doctor so that it contains only digits.

5. Design a Guest House Booking System that maintains the following databases : 35

GHouse (GHno, Hname, City, Phone, Roomtype, Price)

Guest (Gno, Gname, Address, Phone)

Booking (GHno, Gno, DateFrom, DateTo)

Create tables in SQL such that if a record of a GHouse table is deleted then all the corresponding records in Booking table also gets deleted. Insert at least six tuples in each table so that the queries yield some results.

(a) Find the total number of AC rooms in Sinha's Guest House located in Salt Lake.

(b) List the particulars of all the guests who have checked in on 12th September, 2015 in any guest house at Kolkata.

(c) Find the average price of a double bedded room in each city. There must be at least 3 cities.

Create a user interface for the above application. Incorporate the following in your design :

(i) Login to the system.

(ii) Input, view, modify and delete the guest and booking data in separate forms.

(iii) Incorporate checks so that it shows error messages when Date to is earlier than Date From in the Booking table. Also make sure that an already booked room is blocked from further booking.

(iv) Generate a bill for a guest who is going to check out.

2015

COMPUTER SCIENCE – HONOURS — PRACTICAL

Seventh Paper

Group – B

Full Marks – 50

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FOURTH DAY

Answer ***any one*** question

Marks Distribution

Marks in Assignments	: 5
Marks in Viva voce	: 10
Marks in Experiment	: 35
Table creation	: 6
Integrity Constraints	: 3
Tuple insertion through SQL	: 3
Queries through SQL	: 9 (3×3)
User Interface design	: 4
Connection with Backend	: 2
Front end functions as per question	: 8 (2×4)

1. Design a Supplier-Part booking system that maintains the following database :

Supplier (s_no, s_name, city, status) status field must be number.
Parts (p_no, p_name, color, weight, city)
Supply (s_no, p_no, qty)

Create table in SQL with all integrity constraints such that if a record of a Supplier table is deleted then all the corresponding records in Parts table also gets deleted. Insert at least six tuples so that the queries yield some results.

(a) Get part numbers for parts supplied by a supplier in Kolkata.

(b) Get the total quantity supplied by supplier Sl.

(c) Get supplier numbers for suppliers with a status lower than that of supplier S1.

Create a user interface for the above application. Incorporate the following in your design :

(a) Input and view data for Supplier, Parts tables in separate forms.

(b) Use Combo box to accept s_no and p_no so that they match with those in the corresponding tables.

(c) The weight of the parts must be between 2 kg to 10 kg. Show appropriate error messages in case of violation.

(d) In the parts form include color as "RED", "GREEN", or "BLUE" by using radio Buttons.

2. Design a Boat Reservation System with the following database :

Sailors(sid, sname, marital-status, age)

Boats (bid, bname, color)

Reserves (sid, bid, day)

Create table in SQL with all integrity constraints. Sid must be between 100 and 5,000. Insert at least six tuples so that the queries yield some results.

(a) List the details of married sailors who have reserved blue boats on Monday.

(b) List the names of the boats reserved on Sunday by A. Haldar.

(c) Give the name of youngest Sailor who reserved a blue boat on Saturday.

Create a user interface for the above application. Incorporate the following in your design :

(a) Input and view data in any two of the tables in separate form so that all integrity constraints are maintained.

(b) Input sid in 'Sailors' table through text box so that it will take only number.

(c) Input age in 'Sailors' table using a vertical scrollbar so that age is between 20 and 50.

(d) Insert checks for accepting the color of the boats to be only red, black, blue and green using text box.

3. Design a Employee working system that maintains the following database :

Employee(ename, street, city)
Works(ename, cname, salary)
Company(cname, city)

Create tables in SQL with all integrity constraints. Assume that all people work for at most one company. Insert at least six tuples so that the queries yield some results.

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

(b) Find the company that has the smallest payroll.

(c) Find all employees who earn more than the average salary of all employees of their company.

Create a user interface for the above application. Incorporate the following in your design :

(a) Make a startup form to Login to the system.

(b) Input and view data for any two tables in separate forms so that all integrity constraints are maintained.

(c) Input Employee names using Combo box.

(d) The company names must be among TCS, CTS, WIPRO and HCL which are to be selected by using radio buttons.

4. Design a system for Bank that maintains the following database. The bank has only one branch in a particular city :

Branch (branch_name, branch_city, assets)
Customer (cid, cust_name, acct_type, trans_type, balance)
Transaction (t_no, t_date,tr_type, cid, branch_name, t_amt)

Create table in SQL with all integrity constraints. Insert at least six tuples so that the queries yield some results. Write SQL queries to perform the following :

(a) List the names and types of accounts of the customer having account in Kolkata.

(b) List the details of the branch of the bank having the lowest asset.

(c) List out the balance of the customers who have a transaction over 12000/-.

Create a user interface for the above application. Incorporate the following in your design :

(a) Make a start-up form to login to the system.

(b) Input and view data for any two tables in separate forms so that all integrity constraints are maintained.

(c) Use combo box to choose names of branch city. Include at least 6 cities in your design.

(d) In the login form include a command button whose caption changes from Enable to Disable on clicking. If it is enabled, login is allowed otherwise login is failed.

5. Design a Video-Parlor System that maintains the following database :

Customer (custid, cname, area, phone)

Movie (mvno, title, type, actor, price)

Invoice (invno, mvno, custid, issuedate, returndate)

Create tables in SQL with all integrity constraints. Insert at least six tuples so that the queries yield some results. Write SQL queries to do the following :

(a) Find out the title, type of the movies that has been issued to S. Banerji.

(b) Find out the customer details who have seen movies whose actor is Amir Khan.

(c) Find out the total number of movies that have been issued between 15th June to 30th June, 2014.

Create a user interface for the above application. Incorporate the following in your design :

(a) Input and view data for each table in separate forms.

(b) Use text box to insert cname in customer form.

(c) In the Customer form input phone number in a text box that will take only number from 0 to 9.

(d) Use Combo box to choose the name of the Actor in the Movie form. Include at least 6 Actors in the design.

2014

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Seventh Paper

Group – B

Full Marks – 50

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Batch – II

Answer ***any one*** question

Marks Distribution

Marks in Assignments	:	5
Marks in Viva-voce	:	10
Marks in Experiment	:	35
Table Creation	:	6
Integrity Constraints	:	3
Tuple Insertion through SQL	:	3
Queries through SQL	:	9 (3×3)
User Interface Design	:	4
Connection with Back end	:	2
Front end functions as per question	:	8 (2×4)

1. Design a *Student-Attendance System* that automates the attendance system in a college.

The system maintains the following database :

Students (*Roll*, SName, Course, Year)

Teacher (*TId*, TName, Code)

Attends (*Roll*, TId, Subject, Date)

Create tables using SQL such that if student record is deleted, all corresponding records in the Attends table also gets deleted. Insert at least six tuples in each table so that the queries yield some results. 'S Name's can start with letters A to D. Write SQL queries to do the following : 35

(i) Find student with maximum attendance.

(ii) Find all students whose names start with 'A' in B.Sc. Course who have attended at least one class taken by Prof. M. Banerji.

(iii) Find teachers who have taught classes on Data Structure.

Create a user interface. Incorporate the following in your design.

(a) Login to the system. Only a teacher with a valid TId and Code can login.

(b) Design a seperate form to change code. Make sure that only a valid user can change code.

(c) Input, view, modify and delete 'Attends' data in a form.

(d) In the 'Attends' form, include three horizontal scrollbars, labeled as 'Red', 'Blue' and 'Green' whose values range from 0-255. An user may choose from these scrollbars to change the background colour of the form.

2. Design a *Order Receiving System* that maintains the following database :

Customer (*CID*, CName, City, Phone)

Item (*INo*, IName, Price, Type)

Orders (*ONo*, CId, INo, Date, Qty)

Create the relations using SQL commands, specifying the integrity constraints. Insert at least six tuples in each table so that the queries yield some results. Write queries in SQL to do the following :

(i) List all Ono, Date and Qty of all orders from Kolkata where Date is in the format "Month DD, YYYY", for example January 1, 2014.

(ii) Find the average price of all items ordered by A.K. Basu, correct upto nearest paise.

(iii) Find all customers who have never ordered any 'Laptop'.

Create an user interface. Incorporate the following in your design.

(a) Input, view, modify and delete data in each of the tables using separate forms.

(b) Input date in 'orders' table using calendar control.

(c) Use options buttons to select names of cities of 'Customers'. Include at least five cities in your design.

(d) Incorporate checks so that names of employees does not have any numeric values in them. Show appropriate error messages.

3. Design a Departmental Library system having the following database: 35

Book (*Book_id*, Bname, Title, Author, Subject, Price, Availability)

Borrower (*Bid*, Bname, BPhone, BCourse)

Borrows (Bookid, Bid, Date of issue, Date of return, Fine)

Create the following relations using SQL specifying the integrity constrainst, Insert sufficient tuples, in the tables so that the queries yield some results. Initialize Availability of Book table to specify the number of copies of a book currently available.

Write SQL queries to do the following :

(a) Find the books that have been borrowed for the highest number of times.

(b) Find all the borrowers who have borrowed the highest priced book at least once.

(c) List all the books by J. David that has been borrowed by T Dey in the month of February 2014.

Create a user interface for the above application. Incorporate the following in your design.

(i) Input, view, modify and delete all the tables in separate forms so that the integrity constraints are maintained.

(ii) Input Borrows data in separate forms for Issue and Return. Use combo boxes to accept Book id and Bid so that Book id and Bid matches those in the Book table and the Borrower table.

(iii) Include subroutines to ensure that a borrower can borrow books only when it is available. Also change the Availability of Book when a book is borrowed or returned.

(iv) Calculate Fine given the following rule : A book must be returned within 14 days from the date of issue. A fine of 50 p per day will be charged after the due date.

4. Design a Hospital Management system having the following database : 35

Hospital (*h_no*, h-name, city, roomtype, bed_charge)

Patient (*p_no*, p_name, p_age, p_city)

Admission (h_no, p_no, datefrom, date_to, roomtype)

Create the following relations using SQL specifying the integrity constraints. Insert sufficient tuples (at lest six) in the tables so that the queries yield some result. The hospitals are located in Midnapur, Burdwan and Asansol.

Write SQL commands for the following :

(a) Find the names of the patients not residing in the same city as the hospital they are admitted to.

(b) List the names of all the patients admitted to Care Nursing Home in Burdwan during the month of January 2014.

(c) Find the bed-charge to be paid by Anil Das who has been admitted in a cabin during 10th January to 2nd February.

Create a user interface for the above application.

Incorporate the following in your design :

(i) Log in to the system.

(ii) Input, view, modify and delete all the tables in separate forms so that the integrity constraints are maintained.

(iii) Use check boxes to choose among different categories of rooms in the hospital and enter the bed charges accordingly.

(iv) Provide checks so that the date of admission is earlier then the date of discharge. Use calendar controls to insert both the dates.

5. Design a Hotel Booking System that maintains the following database :

Hotel (*Hno*, Hname, City, Phone, Room type, Price)

Guest (*Gno*, Gname, Address, Phone)

Booking (H_no, Gno, Date From, Date To)

Create Tables in SQL such that if a record of a hotel table is deleted then all the corresponding records in Booking table also gets deleted. Insert sufficient number of tuples so that the queries yield some results.

(a) Find the total number of non-ac rooms in Jain Hind Hotel located in Delhi.

(b) List the particulars of all the guests who have checked in the 16th of June 2013 in any hotel in Chennai.

(c) Find the average price of an AC double bedded room in each city.

Create a user interface for the above application. Incorporate the following in your design.

(a) Login to the system.

(b) Input, view, modify and delete hotel, guest and booking data in separate forms.

(c) Incorporate checks and show error messages if Date to is less than Date from. Also make sure that an already booked room is blocked for further booking.

(d) Generate a bill for a guest who is going to checkout.

2014

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Seventh Paper

Group – B

Full Marks – 50

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Batch – III

Marks Distribution

Marks in Assignments	:	5
Marks in Viva-voce	:	10
Marks in Experiment	:	35
Table creation and integrity constraints	:	6+3
Tuple Insertion through SQL	:	3
Queries through SQL	:	(3×3)
User Interface Design	:	4
Connection with backend	:	2
Frontend functions	:	(2×4)

1. Design a system for a company that maintains the following database : 35

Employee (*Empno*, Empname, Salary, Wiredate)

Department (*Deptno*, Empno, Dname, City)

Manager (*Mgrno*, Mgrname, Deptno, Salary, Hiredate)

Create the following relations using SQL specifying the integrity constraints. Insert at least six tuples in the tables so that the queries yield some results.

(a) Give the names of the employees who have joined in the same month and year as of their managers.

(b) List the names and salaries of employees working in HR department located in Calcutta.

(c) Display the name of the manager who manages the department having the largest number of employees.

Create a user interface for the above application. Incorporate the following in your design.

(i) Log in to the system.

(ii) Input, view, modify and delete each of the tables in separate forms, so that the integrity constraints are maintained.

(iii) Input dates using calender control.

(iv) The department names must be among ACCOUNTS, SALES, MARKETING, HR which are to be selected by using drop down menu.

2. Design a system for Bank that maintains the following database. The bank has only one branch in a particular city.

Branch (*branch–name*, branch–city, assets)

Customer (*cid*, customer_name, account_type, trans_type, balance)

Transaction (*T_no*, T_date, Trans_type, cid, branch_name, T-amount)

Create the following relations using SQL specifying the integrity constraints. Insert sufficient data in the tables so that the queries yield some results.

Write SQL queries to perform the following :

(a) List the names and types of accounts of the customer having account in Kolkata.

(b) List the details of the branch of the bank having the highest asset.

(c) Show the account details of the customer who has withdrawn an amount of Rs.10,000/- from the savings account. The minimum balance of Rs.1000/- must be maintained after the with drawal.

Create user interface for the above application.

(i) Login to the system.

(ii) Input, view, modify and delete each of the tables in separate forms, so that all integrity constraints are maintained.

(iii) The transaction type may be restricted to deposit, withdrawal only. The account type may be only savings, current and fixed deposit.

(iv) Show proper error messages when the account balance of the savings account drops below the minimum balance of Rs.1000.

3. Design an *Employee Management System* with the following database : 35

Employee (*EId*, EName, BirthDate, DeptNo, Super EId)

Department (*DeptNo*, DName)

Dependent (*EId, Name*, Date of Birth, Relationship)

(i) Find names of employees who do not have any dependents.

(ii) Find the names of employees as well as the names of the departments of these employees who are directly supervised by Amit Mitra'.

(iii) Find the name, date of birth and number of dependents of all employees who are above 40 years of age.

Create the above relations through SQL commands specifying the integrity constraints. Insert at least six tuples in each table such that the queries yield some results. Then answer the above queries using SQL commands.

Now, create a user interface for the above application. Incorporate the following in your design.

(a) Input, view, modify and delete data in each of the tables through use of seperate forms.

(b) Incorporate checks so that names of employees and dependents does not have any numeric values in them. Show appropriate error messages if otherwise.

(c) Input date of births using calender control.

(d) View details of all employees in a data grid.

4. Design a *Parts supply system* with the following database : 35

Supplier (*SupId*, SupName, SupCity)

Parts (*PartId*, PartName, Color)

Transaction (*SupId, PartId*, Date, Cost)

Create the above relations using SQL commands, specifying the integrity constraints. Insert sufficient data in the tables so that the queries yield some results.

Write SQL queries to do the following :

(i) Find the names and cities of suppliers who supply either some red or some blue or some green part.

(ii) Change the colour of all 'Aluminium Sheets' to 'silvery'.

(iii) Find the supplier name and address who has done the most costly transaction in the year 2013.

Create a user interface for the above application. Incorporate the following in your design.

(a) Make a start-up form to login to the system.

(b) Input, view, modify and delete data of each table in a separate form.

(c) Use options buttons to select names of supplier city. Include at least 6 cities in your design.

(d) In the login form include a command button whose caption changes from Enable to Disable on clicking. If it is enabled, login is allowed; otherwise login is not allowed.

5. Design a sailors database with the following tables :

Sailors (*Sid*, Sname, age, marital-status)

Reserved (*Sid, bid*, day)

Boats (*bid*, bname, colour)

Create the following relations using SQL specifying the integrity constraints. Insert sufficient tuples in the tables so that the queries yield some results. Marital status is unmarried and married.

Write SQL commands for the following :

(a) List the details of the unmarried sailors who have reserved red boats on Tuesday.

(b) List the names of the boats reserved on Sunday by S. Maji.

(c) Give the name of oldest sailor who reserved a blue boat on Monday.

Create a user interface for the above application. Incorporate the following in your design.

(i) Use radio buttons to choose whether a boat is reserved in a particular date or not.

(ii) Use dropdown list boxes to accept sid and bid so that they match with those in the corresponding tables.

(iii) Insert checks for accepting the colour of the boats to be only red, black, blue and green.

(iv) The age of the sailor must be between 20 years and 50 years. Show appropriate error messages in case of violation.

2014

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Seventh Paper

Group – B

Full Marks – 50

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

Batch – I

Answer ***any one*** question

Marks Distribution

Marks in Assignments	:	5
Marks in Viva-voce	:	10
Marks in Experiment	:	35
Table Creation	:	6
Integrity Constraints	:	3
Tuple Insertion through SQL	:	3
Queries through SQL	:	9 (3×3)
User Interface Design	:	4
Connection with Backend	:	2
Front end functions as per question	:	8 (2×4)

1. Design a *Library Management System* with the following database :

Book (*Book Id*, Book Name, Title, Author, Subject, Availability, Price)

Borrower (*BId*, BName, City, Phone)

Borrows (*Book Id, BId*, Data of Issue, Data Of Return)

Create the above relations through SQL commands specifying the integrity constraints. Insert at least six tuples in each table such that the queries yield some results. Answer the following through SQL commands.

(i) Find all books which have not been borrowed in February, 2014.

(ii) Find the total number of times, the costliest book on 'Computer Science' has been borrowed.

(iii) Find all borrowers living in 'Kolkata' who have borrowed at least one book on 'Mathematics'.

Create a user interface for the above application. Perform the following in your interface design :

(a) Input, view, modify and delete 'Book' and 'Borrower' data in separate forms.

(b) Design a form for 'Issue' of books. Use combo boxes to accept BookId and BId. Include routines to ensure that a borrower can buy books only when it is available.

(c) Design a form for 'Return' of books. Change availability of books when a book is issued or returned.

(d) In the 'Return' form, put a command button with caption 'Calculate Fine' on clicking which, the fine is displayed in a message box. Fine is charged according to the following rule : A book must be returned within 14 days from the date of issue. Henceforth, fine or Rs.1/day is charged.

2. Design a *Boat Reservation System* with the following database :

Boat (*BId*, BName, Colour, Price)

Sailor (SId, SName, Age)

Reserves (*BId, SId*, Date)

Create the above relations through SQL commands specifying the integrity constraints. Insert at least six tuples in each table such that the queries yield some results. Answer the following through SQL commands.

(i) Find the names of all boats which has been booked at least once in the last 15 days.

(ii) Find all sailors who are more than 40 years old and who have not reserved either a red coloured or a green coloured boat.

(iii) Find all boats whose cost is more than the maximum cost of a red coloured boat.

Create a user interface for the above application. Incorporate the following in your design.

(a) Input, view, modify and delete data in each of the tables in seperate forms, so that all the integrity constraints are maintained.

(b) Input data in 'Reserves' table using calendar control.

(c) Input 'age' using a vertical scorebar so that age is between 18 and 50.

(d) View details of all reservations i.e. the 'Reserve' table, using a data grid.

3. Design a Shipment Management System with the following database : 35

Vehicle (*VNo*, Drivername)

Customer (*Cid*, Cname, Caddress, CRevenue)

Shipment (*Sno*, Cid, Vno, City, Weight, Sdate)

Create the following relations using SQL specifying the integrity constraints. Insert sufficient data in the tables so that the queries yield some results. Write SQL queries to do the following :

(a) Set the driver 'Om Prakash' for making shipments for the highest revenue generating customer in the month of March 2013.

(b) Find the city where the minimum number of shipments has been delivered.

(c) Find the customer details for whom the driver 'Laksman Singh' have never made any shipments.

Create a user interface for the above application. Incorporate the following in your design.

(i) Login to the system. You can create additional table in SQL for this.

(ii) Input, view, modify and delete each of the tables in separate forms, so that all integrity constraints are maintained. Include checks so that the weight is not more that 12 tons.

(iii) View details of all shipments in a data grid when user inputs the date of shipments.

4. Design a system for sales management that maintains the following databases: 35

Client (*C_no*, name, address1, address2, city, balancedue)

Sales_Product (*p_no*, c_no, s_no, desc, qty-in-hand, reorder, sale-price, cost_price)

Salesman (*S_no*, name, address1, address2, city, sale amt, target_amt, remarks)

Create the following relations using SQL specifying the integrity constraints. Insert at least six tuples in the tables so that the queries yield some results.

(a) Add a column called telephone of data type number and size 10 to the client table.

(b) List the names of all salesman, having 'a' as the second letter in their names.

(c) Find the clients who have placed orders for the products whose selling price is more than Rs.500 but less than or equal to Rs.750 supplied by the salesman living in 'Bangalore'.

Create a user interface for the above application. Incorporate the following in your design :

(i) Login to the system.

(ii) Input, view, modify and delete each of the tables in separate forms, so that all the integrity constraints are maintained.

(iii) Use dropdown menu for the city field of the client and salesman tables.

(iv) Check whether qty-in-hand is more than reorder value and send appropriate messages.