Anjuman Khairul Islam˶s

POONA COLLEGE OF ARTS, SCIENCE AND COMMERCE

Camp, Pune

Affiliated to Savitribai Phule Pune University

Bachelor of Vocation (B. Voc.)

Practical Slips

(As per UGC guidelines for implementing B. Voc. program)

For

SOFTWARE DEVELOPMENT

(Choice Based Credit System)

F.Y.B.Voc. Semester – I

Programming in C and DBMS

2020-2021

Lab Course: **(SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.**

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to accept dimensions of a cylinder and display the surface area and volume of cylinder.   **[20 Marks]**

Q2. Create a structure employee (id, name, salary). Accept details of n employees and write a menu driven program to perform the following operations.   **[20 Marks]**
> a) Search employee by id
> b) Display all employees

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints. Emp(eno ,ename ,designation ,salary, Date_Of_Joining) Dept(dno,dname ,loc)   **[20 Marks]**

   The relationship between Dept & Emp is one-to-many.
   Constraints: - Primary Key, ename should not be NULL, salary must be greater than 0.

   Consider the above tables and Execute the following queries:
   1. Add column phone_No into Emp table with data type int.
   2. Delete the details of Employee whose designation is 'Manager'.

Q4. Consider the above database and execute the following queries: **[20 Marks]**
   1. Display the count of employees department wise.
   2. Display the name of employee who is 'Manager' of "Account Department".
   3. Display the name of department whose location is "Pune" and "Mr. Advait" is working in it.
   4. Display the names of employees whose salary is greater than 50000 and department is "Quality".
   5. Update Dateofjoining of employee to '20/06/2019' whose department is 'computer science' and name is "Mr. Roy".

Q5. Viva / Oral   **[20 Marks]**

F.Y.B.Voc. Semester - I Practical Examination. 2020-2021
Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to accept radius of a circle and display the area and circumference
of a circle.   **[20 Marks]**

Q2. Write a program to calculate sum of following series up to n terms.   **[20 Marks]**
$$Sum = X + X^2/2! + X^3/3! + \ldots$$
(Note: Write separate user defined function to calculate power and factorial)

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with
appropriate data types and Constraints. **[20 Marks]** Sales_order (ordNo, ordDate)

Client (clientNo, ClientName, addr)

The relationship between Client & Sales_order is one-to-many.
Constraints: - Primary Key, ordDate should not be NULL.

Consider the above tables and execute the following queries:
1. Add column amount into Sales_order table with data type int.
2. Delete the details of the clients whose names start with 'A' character.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

1. Delete sales order details of client whose name is "Patil" and order date is
   "09/08/2019".
2. Change order date of client_No 'CN001' to '18/03/2019'.
3. Delete all sales_record having order date is before '10 /02/2018'.
4. Display date wise sales_order given by clients.
5. Update the address of client to "Pimpri" whose name is 'Mr. Roy'.

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to accept temperatures in Fahrenheit (F) and display it in Celsius(C)
    and Kelvin (K) (Hint: C=5.0/9(F-32), K = C + 273.20)   **[20 Marks]**

Q2. Write a menu driven program to perform the following operations on strings using standard
    library functions: **[20 Marks]**
        1. Length of String 2. Copy String   3. Connect Two Strings   4. Compare two strings

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with
    appropriate data types and Constraints.   **[20 Marks]**

        Hospital (hno ,hname , city, Est_year, addr)
        Doctor (dno , dname , addr, Speciality)

    The relationship between Hospital and Doctor is one - to – Many
     Constraints: - Primary Key, Est_year should be greater than 1990.

    Consider the above tables and execute the following queries:
        1. Delete addr column from Hospital table.
        2. Display doctor name, Hospital name and specialty of doctors from "Pune City" .

Q4. Consider the above tables and execute the following queries: **[20 Marks]**
        1. Display the names of the hospitals which are located at "Pimpri" city.
        2. Display the names of doctors who are working in "Birla" Hospital and
            city name is "Chinchwad".
        3. Display the specialty of the doctors who are working in "Ruby" hospital.
        4. Give the count of doctor's hospital wise which are located at "Pimple Gurav".
        5. Update an address of Doctor to "Pimpri" whose hospital is "Ruby clinic".

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to accept two numbers and print arithmetic and harmonic mean of the two numbers (Hint: AM= (a+b)/2 ,HM = ab/(a+b))   **[20 Marks]**

Q2. Create a structure Student (id, name, marks). Accept details of n students and write a menu driven program to perform the following operations.   **[20 Marks]**
   a) Search student by id
   b) Display all students

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints. **[20 Marks]** Patient (PCode, Name, Addr, Disease)

         Bed (Bed_No, RoomNo, loc)

Relationship: - There is one-one relationship between patient and bed.
Constraints: - Primary key, RoomNo must be greater than Bed_No, Addr should not be null.

Consider the above tables and execute the following queries:
   1. Display the details of patients who are from "Pimple Gurav".
   2. Delete the details of patient whose Bed_No is 1 and RoomNo is 105.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

   1. Display the count of patient room wise.
   2. Display the names of patients who are admitted in room no 101.
   3. Display the disease of patient whose bed_No is 1.
   4. Display the room_no and bed_no of patient whose name is "Mr Roy".
   5. Give the details of Patient who is admitted on 2nd flr in roomno 102.

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours] [Marks: - 100

Q1. Write a C program to accept dimensions length (l), breadth(b) and height(h) of a cuboids and display surface area and volume (Hint : surface area=2(lb+lh+bh), volume=lbh) **[20 Marks]**

Q2.Write a program which accepts a sentence from the user and alters it as follows: Every space is replaced by *, case of all alphabets is reversed, digits are replaced by ? **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints. **[20 Marks]**

        Customer (cust_no, cust_name, address, city)
        Loan (loan_no, loan_amt)

The relationship between Customer and Loan is Many to Many

Constraint: Primary key, loan_amt should be > 0.

Consider the above tables and execute the following queries:
1. Add Phone_No column in customer table with data type int.
2. Delete the details of customer whose loan_amt<1000.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

1. Find details of all customers whose loan_amt is greater than 10 lakh.
2. List all customers whose name starts with 'D' character.
3. List the names of customer in descending order who has taken a loan from Pimpri city.
4. Display customer details having maximum loan amount.
5. Update the address of customer whose name is "Mr. Patil" and loan_amt is greater than 100000.

Q5. Viva / Oral **[20 Marks]**

Q1. Write a C Program to accept a character from the keyboard and display its previous and next character in order. Ex. If character entered is 'd', display "The previous character is c", "The next character is e". **[20 Marks]**

Q2. Write a program to accept a string and then count the occurrences of a specific character of a string. **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints. **[20 Marks]** Project (pno, pname, start_date, budget, status)

Department (dno, dname, HOD, loc)

The relationship between Project and Department is Many to One.
Constraint: Primary key.
Project Status Constraints: C – Completed,
                                          P - Progressive,
                                          I - Incomplete

Consider the above tables and execute the following queries:
   1. Drop loc column from department table.
   2. Display the details of project whose start_date is before one month and status is "Progressive"

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

   1. Display the names of project and department who are worked on projects whose status is 'Completed'.
   2. Display total budget of each department.
   3. Display incomplete project of each department.
   4. Display all project working under 'Mr.Desai'.
   5. Display department wise HOD.

Q5. Viva / Oral **[20 Marks]**

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to accept the x and y coordinates of two points and compute the distance between the two points.   **[20 Marks]**

Q2. Write a program to calculate Multiplication of two matrices of order m*n.

[20 Marks]

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints. **[20 Marks]** Room (roomno, desc, rate)

Guest (gno, gname, no_of_days)
The relationship between Room and Guest is One to One.
Constraint: Primary key, no of days should be > 0.

Consider the above tables and execute the following queries:
1. Update the rate of room to 5000 whose type is "AC".
2. Display the name of guest who is staying 2 days in roomno 101.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**
1. Display room details according to its rates in ascending order.
2. Display the roomno in which "Mr. Advait" is staying for 7 days.
3. Find no. of AC rooms.
4. Find names of guest with maximum room charges.
5. Display guest wise halt days.

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. A cashier has currency notes of denomination 1, 5 and 10. Write a C program to accept the withdrawal amount from the user and display the total number of currency notes of each denomination the cashier will have to give.   **[20 Marks]**

Q2. Write a menu driven program to perform the following operation on m*n

Matrix   **[20 Marks]**

      1. Calculate sum of upper triangular matrix elements

      2. Calculate sum of diagonal elements

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints.   **[20 Marks]**

      Book (Book_no, title, author, price, year_published)
      Customer (cid, cname, addr)
   Relation between Book and Customer is Many to Many with quantity
  as descriptive attribute.

  Constraint: Primary key, price should be >0.

 Consider the above tables and execute the following queries:

      1. Display the name of book whose author is "Mr. Gadhave".
      2. Add column EMailId into customer table.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

      1. Display customer details from 'Mumbai'.
      2. Display author wise details of book.
      3. Display customer name that has purchased more than 3 books.
      4. Display book names having price between 100 and 200 and published year is 2019.
      5. Update the title of book to "DBMS" whose author is "Mr. Shabeena Khan".

Q5. Viva / Oral   **[20 Marks]**

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to accept a character from the user and check whether the character
   is a vowel or consonant.   **[20 Marks]**

Q2. Write a program to accept two numbers as range and display multiplication table

   of all numbers within that range.   **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with
   appropriate data types and Constraints. **[20 Marks]** Property (pno, desc, area, rate)

          Owner (owner_name, addr, phno)

   The relationship between owner and Property is One to Many.
   Constraint: Primary key, rate should be > 0

   Consider the above tables and execute the following queries:
      1. Display area of property whose rate is less than 100000.
      2. Give the details of owner whose property is at "Pune" .

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

      1. Display area wise property details.
      2. Display property owned by 'Mr.Patil' having minimum rate.
      3. Delete all properties from "pune" owned by "Mr. Joshi".
      4. Update the phone Number of "Mr. Joshi" to 9922112233 who is
         having property at "Uruli Kanchan".
      5. Delete column address from Owner table.

Q5. Viva / Oral   **[20 Marks]**

Time: - 3 Hours] [Marks: - 100

Q1. Write a C program to accept the x and y coordinate of a point and find the quadrant in which the point lies. **[20 Marks]**

Q2. Write a program, which accepts a number n and displays each digit in words.

Example: 6702 Output = Six-Seven-Zero-Two **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints. **[20 Marks]**

Employee (emp_no, name, skill, payrate)
Position (posting_no, skill)

The relationship between Employee and Position is Many to Many with day and shift as descriptive attribute.

Constraint: Primary key, payrate should be > 0.
Consider the above tables and execute the following queries:
1. Display skill of employees name wise.
2. Update the posting of employee to 220 whose skill is "Manager".

Q4. Consider the above tables and execute the following queries: **[20 Marks]**
1. Find the names and rate of pay of all employees who has allocated a duty.
2. Give employee number who is working at posting_no. 201, but don't have the skill of waiter.
3. Display a list of names of employees who have skill of chef and who has assigned a duty.
4. Display shift wise employee details.
5. Update payrate of employees to 20000 whose skill is waiter.

Q5. Viva / Oral **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to accept the cost price and selling price from the user. Find out if the seller has made a profit or loss and display how much profit or loss has been made.

[20 Marks]

Q2. Accept radius from the user and write a program having menu with the following options and corresponding actions   **[20 Marks]**

Options	Actions
1. Area of Circle	Compute area of circle and print
2. Circumference of Circle	Compute Circumference of circle and print
3. Volume of Sphere	Compute Volume of Sphere and print

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints.   **[20 Marks]**

Bill (billno, day, tableno, total)
Menu (dish_no, dish_desc, price)

The relationship between Bill and Menu is Many to Many with quantity as descriptive attribute.

Constraint: Primary key, price should be > 0.
Consider the above tables and execute the following queries:
1. Display the tableno whose dish_desc is "Veg".
2. Display the special menu of Monday.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**
1. Display receipt which includes bill_no with Dish description, price, quantity and total amount of each menu.
2. Find total amount collected by hotel on date 09/07/2019.
3. Count number of menus of billno 301.
4. Display menu details having price between 100 and 500.
5. Display the tableno and day whose bill amount is zero.

Q5. Viva / Oral   **[20 Marks]**

11

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to calculate sum of digits of a given input number. **[20 Marks]**

Q2. Accept two numbers from user and write a menu driven program to perform

   the following operations   **[20 Marks]**

1. swap the values of two variables

2. calculate arithmetic mean and harmonic mean of two numbers

Q3 Consider the following entities and their relationships. Create a RDB in 3 NF with
   appropriate data types and Constraints.   **[20 Marks]**

   Movies (M_name, release_year, budget)
   Actor (A_name, role, charges, A_address)
   Producer (producer_id, name, P_address)

   Relationship:- Each actor has acted in one or more movie. Each producer has produced
   many movies but each movie can be produced by more than one producers. Each movie
   has one or more actors acting in it, in different roles.

   Constraint: Primary key, release_year > 2000, A_address and P_address should not
               be same.
   Consider the above tables and execute the following queries:
   1.   List the names of movies with the highest budget.
   2. Display the details of producer who have produced more than one movie in a year.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

1.   List the names of movies with the second highest budget
2.   List the names of actors who have acted in the maximum number of
          movies.
3.   List the names of movies, produced by more than one producer.
4. List the names of actors who are given with the maximum charges for their movie.
5.   List the names of actors who have acted in at least one movie, in
                 which 'Akshay'
      has acted.

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours] [Marks: - 100

Q1. Write a C program to accept the value of n and display sum of all odd numbers
up to n. **[20 Marks]**

Q2. Write a program to accept a decimal number and convert it to binary, octal and
hexadecimal number. **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with
appropriate data types and Constraints. **[20 Marks]**

   Driver (driver_id, driver_name, address)
   Car (license_no, model, year)

   Relation between Driver and Car is Many to Many with date and time
   as descriptive attribute.

   Constraint: Primary key, driver_name should not be null.
   Consider the above tables and execute the following queries:
      1. Display the name of driver whose license no is "DPU123".
      2. Delete the details of car whose model is "swift".

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

      1. Display details of all persons who are driving 'Alto' car.
      2. Update model of car to "SUV300" whose manufactured year is 2019.
      3. Display car details manufactured before year 2000.
      4. In which day 'Mr. Ram' drives maximum number of cars.
      5. Display total number of drivers who drives car in each year.

Q5. Viva / Oral **[20 Marks]**

Q1. Write a C program to check whether a input number is Armstrong number or not.
[20 Marks]

Q2. Write a program to accept a number and count number of even, odd and zero digits
within that number.   **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with
appropriate data types and Constraints.   **[20 Marks]**

Student (stud_reg_no, stud_name, class)
Competition (cno, cname, ctype)

Relation between Student and Competition is Many to Many
with rank and year as descriptive attribute.

Constraint: Primary key, class must be("FY,SY,TY").

Consider the above tables and execute the following queries:
1. Count total no students class wise.
2. Delete the details of student who has participated in "Mehandi" competation.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

1. Display students from class 'FY' and participated in 'E-Rangoli ' Competition.
2. Find the number of student for programming competition.
3. Display the names of first three winners of each competition.
4. Display average number of students participating in each competition.
5. Display total number of competition held in the year 2014.

Q5. Viva / Oral   **[20 Marks]**

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to check whether a input number is perfect number of not.

[20 Marks]

Q2. Write a program having a menu with the following options and corresponding actions

[20 Marks]

Options	Actions
1. Area of square	Accept length ,Compute area of square and print
2. Area of Rectangle	Accept length and breadth, Compute area of rectangle and print
3. Area of triangle	Accept base and height , Compute area of triangle and print

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with
appropriate data types and Constraints.   **[20 Marks]**

> Plan (plan_no, plan_name, nooffreecalls, freecalltime, fix_amt)
> Customer (cust_no, cust_name, mobile_no)

Relation between Plan and Customer is One to Many.
Constraint: Primary key, fix_amt should be greater than 0.

Consider the above tables and execute the following queries:
  1.   Display the details of plan who has taken by "Mr. Patil".
  2.   Update the mobile No of customer to 7020079536 whose name is "Mr
Roy" and plan is
    "Go Max".

Q4. Consider the above tables and execute the following queries: **[20 Marks]**
  1. Display the plan having minimum response.
  2. Display customer details starting their mobile number with 98.
  3. Display the customer details that are getting less number of free calls than that
     of the plan 'Let's Rock'.
  4. Delete the details of 'John' who has stopped 'Go Max' plan.
  5. Find the plan whose fixed amount is greater than 5000.

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to calculate x^y without using standard library function .

[20 Marks]

Q2. Write a program to display union and intersection of two 1D array.   **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints.   **[20 Marks]**

Employee (emp_id, emp_name, address)
Investment (inv_no, inv_name, inv_date, inv_amount)

Relation between Employee and Investment is One to Many.
Constraint: Primary key, inv_amount should be > 0.

Consider the above tables and execute the following queries:

1. Display the details of employee who has invested amount in "Mutual Fund".
2. Add column Phone_No in Employee table.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

1. Display employee details who have invested more than 100000.
2. Display employee wise total investment amount.
3. Display the employee names who invest on date 2nd Jan 2013.
4. Display employee whose investment are more than 3.
5. Find average investment of employees of Pune.

Q5. Viva / Oral   **[20 Marks]**

Time: - 3 Hours] [Marks: - 100

Q1. Write a C program to display multiplication table of a given input number **[20 Marks]**

Q2. Write a menu driven program to perform the following operation on m*n

Matrix **[20 Marks]**

    1. Display transpose of a matrix

    2. Calculate sum of all odd elements of matrix

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints. **[20 Marks]** Politicians (pno, pname, telephone_no)

    Party (party_code, party_name)

Relation between Politicians and Party is Many to One.
Constraint: Primary key, party_name should not be null.

Consider the above tables and execute the following queries:
    1.   Display the name of party whose politician is "Mr. Patil".
    2.   Update party name of politician whose name is "Mr.Pawar".

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

    1. Display party names in ascending order.
    2. Find the party who is having less number of members than 'Congress' party.
    3. Display party wise politician name with details.
    4. Display the party name with the details of politicians whose name include "Rao".
    5. Which party has maximum politicians

Q5. Viva / Oral **[20 Marks]**

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to generate following triangle up to n lines.   **[20 Marks]**

   1

   1   2

   1   2   3

Q2. Write a program to calculate sum of following series up to n terms.   **[20 Marks]**

$$Sum = X - X^2/2! + X^3/3! - \ldots\ldots$$

(Note: Write separate user defined function to calculate power and factorial)

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints.   **[20 Marks]**

      Game (game_name, no_of_players, coach_name)
      Player (pid, pname, address, club_name)

Relation between Game and Player is Many to Many.
Constraint: Primary key, no_of_players should be > 0.

Consider the above tables and execute the following queries:
    1. Display the name of club whose coach is "Mr. Sehwag".
    2. Update the game name of player to cricket whose name is "Mr Rahane".

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

    1. Display players from 'Delhi'.
    2. List all games which require more than 4 players.
    3. Find the total number of cricket players of 'sports club".
    4. Display games having more number of players than that of football.
    5. Display coach wise player details.

Q5. Viva / Oral   **[20 Marks]**

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to generate following triangle up to n lines.   **[20 Marks]**

```
*     *     *     *

*     *     *

*     *

*
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Q2. Write a menu driven program to perform the following operation on m*n

Matrix   **[20 Marks]**

      1. Find sum of diagonal elements of matrix

      2. Find sum of all even numbers of matrix

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints. **[20 Marks]** Item (item_no, item_name, quantity)

      Suppliers (sup_no, sup_name, address, city, phone_no)

Relation between Item and Supplier is Many to Many with rate
and discount as descriptive attribute.

Constraint: Primary key, phone_no must be 10 digits.

Consider the above tables and execute the following queries:
      1. Display item wise quantity.
      2. Display Suppliers whose names are starting with 's' character.
3.
Q4. Consider the above tables and execute the following queries: **[20 Marks]**
      1. Delete items having quantity less than 2.
      2. Display total number of suppliers who are supplying 'Refrigerator'.
      3. Display all suppliers supplying 'Washing Machine' with minimum cost.
      4. Give supplier details who give maximum discount on each item.
      5. List suppliers supplying maximum number of item.

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to generate following triangle up to n lines.   **[20 Marks]**

   1

   2 3

  4 5   6

Q2. Write a program to calculate addition of two matrices   **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with
appropriate data types and Constraints.   **[20 Marks]**

       Wholesaler (w_no, w_name, address, city)
       Product (product_no, product_name, rate)

Relation between Wholesaler and Product is Many to
Many with quantity as descriptive attribute.

Constraint: Primary key, rate should be > 0.

Consider the above tables and execute the following queries:
    1. Update product_name to "Monitor" whose supplier is "Mr. Patil".
    2. Display product wise rate.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

    1. Display wholesaler from 'Pune' city and supplying 'Monitor'.
    2. Display total number of wholesaler of each product.
    3. Display all wholesalers who are supplying 'Keyboard' with maximum price.
    4. Display total quantity of each product sold by 'Mr. Khabia'.
    5. Decrement rate of all products by 5% supplied by wholesaler from 'Pune ' city.

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to generate following triangle up to n lines.   **[20 Marks]**

    A

    A   B

    A   B   C

Q2. Create a structure employee (eno, ename, salary). Accept details of n employees and write a menu driven program to perform the following operations options.   **[20 Marks]**

        1. Display all employees having salary > 5000
        2. Display all employees

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints.   **[20 Marks]**

        Client (client_no, client_name, address, birthdate)
        Policy_info (policy_no, desc, maturity_amt, prem_amt, date)

    Relation between Client and Policy_info is Many to Many Constraint:
    Primary key, prem_amt and maturity_amt should be > 0.

    Consider the above tables and execute the following queries:
        1. Display premium amount paid by "Mr. Mahandule" since 1 Jan 2018.
        2. Display the details of client who have taken policy "Jeevan Raksha".

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

        1. Display Policy details having maturity amount >500000.
        2. Find total number of policies purchased on 12th January 2019.
        3. Find clients who have more than 3 policies.
        4. Find all policies whose number of clients is same as that of policy 'Jeevan Raksha'.
        5. Display policy wise client details.

Q5. Viva / Oral   **[20 Marks]**

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to generate following triangle up to n lines.   **[20 Marks]**

    A   B   C

    A   B

    A

Q2. Write a menu driven program to perform the following operation on m*n

Matrix   **[20 Marks]**

1. Find sum of non diagonal elements of matrix

2. Find sum of all odd numbers of matrix

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints.   **[20 Marks]**

       Train (train_no, train_name, depart_time, arrival_time,source_stn, dest_stn)
       Passenger (p_id,p_name,address,age, gender)
Relation between Train and Passenger is Many to Many with seat_no, amount and date as descriptive attribute.
Constraint: Primary key, seat_no should not be null.

Consider the above tables and execute the following queries:

1. Display passenger names and their seat no's of train "sahyadri express".
2. Display details of train in which "Mr. Roy" is travelling from "Pune" to "Uruli Kanchan".

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

1. Display passenger details having age>50
2. Display total amount collected for "Kokan Express" on 5^{th} January 2019.
3. Find total number of passenger of "Pune to Mumbai" route.
4. Cancel all the trains of 21^{st} January 2019.
5. Calculate total number of male passenger in "Shatabdi Express".

Q5. Viva / Oral   **[20 Marks]**

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to accept n elements of 1D array and then display sum of

   all elements of array.   **[20 Marks]**

Q2. Accept n integers in an array. Copy only the non-zero elements to another array
    (allocated using dynamic memory allocation). Calculate the sum and average of
    non-zero elements.   **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with
    appropriate data types and Constraints.   **[20 Marks]**

        Student (rno,sname,address,class)
         Subject (subno,subname)

   Relationship: - Student and Subject are related with many-to-many relationship with attribute
    marks and status.
    Constraints: - Primary Key, class must be fy,sy,ty.

   Consider the above tables and execute the following queries:
        1.   List the names of student class wise.
        2.   Display the marks of students subject wise.

 Q4. Consider the above tables and execute the following queries: **[20 Marks]**

        1.   List the distinct names of students who have either Electronics, or Statistics or both
             subjects.
        2.   List the names of students who are either passed or failed.
        3.   List the students who have "Database" subject and they are not in "TY" class.
        4.   List the names of students who are not failed in any subject.
        5.   List the names of students not staying at "Uruli Kanchan".

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to find maximum elements of 1D array   **[20 Marks]**

Q2. Create a structure Book (Bno, Bname, Price). Accept details of n Books and write a menu driven program to perform the following operations options.   **[20 Marks]**

1. Display all Books having price > 500
2. Display Book having maximum price

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints.   **[20 Marks]**

Bus(bus_no, capacity, depo_name)

Route(Route_no, source, destination, no_of_stations)

Relation between Bus and Route is Many to One.
Constraint: Bus capacity should be greater than 0, depo_name should not be null.

Consider the above tables and execute the following queries:
1. List all buses at depo "kothrud".
2. Delete bus details whose number is "MH12HL7812".

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

1. List all buses on route no 41.
2. List the route details having number of stations > 10.
3. Delete all buses having capacity < 20.
4. Find the maximum number of stations.
5. List all routes starting from "station".

Q5. Viva / Oral   **[20 Marks]**

Q1. Write a C program to calculate sum of all even elements of a matrix. **[20 Marks]**

Q2. Write a menu driven program for the following option **[20 Marks]**

      1. Check input number is Armstrong or not
      2. Check input number is Perfect or not

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with appropriate data types and Constraints. **[20 Marks]**

      College (code, college_name, address)
      Teacher (teacher_id, teacher_name, Qualification, specialization, salary, Desg)

Relation between Teacher and College is Many to One.
Constraint: Primary Key, qualification should not be null.

Consider the above tables and execute the following queries:
    1. List the name of staff having qualification is "SET-NET".
    2. Update the salary of teacher to 50000 whose qualification is "PhD".

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

    1. List the college wise staff.
    2. Display the details of Teachers who are working in Dr. D Y Patil College and their specialization is "Computer".
    3. Display the designation of teacher whose name is "Mr Patil" and he is working in DPU college.
    4. Display teacher wise salary.
    5. Update an address of college to "Sant TukaramNagar" whose name is "MD College".

Q5. Viva / Oral **[20 Marks]**

Time: - 3 Hours] [Marks: - 100

Q1. Write a C program to calculate length of string without using standard functions.

[20 Marks]

Q2. Write a program to display the elements of an array containing n integers in the
   Reverse order using a pointer to the array. **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with
   appropriate data types and Constraints. **[20 Marks]**

        Gym (Name, city, charges, scheme)
        Member (ID, Name, phoneNo, address)
   Relation between Gym and member is one to many.
   Constraint: Primary Key, charges must be greater than 0.

   Consider the above tables and execute the following queries:
        1. Display the scheme details of "Gold Gym".
        2. List out all the gym of "Pimpri" city.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

        1. Give the details of scheme to which "Mr. Patil" is admitted.
        2. List out gym wise members.
        3. List out scheme wise charges.
        4. Display all the members from pune city who have paid Gym charges more than
           10000.
        5. Drop column address from Member table.

Q5. Viva / Oral **[20 Marks]**

F.Y.B.Voc. Semester - I Practical Examination. 2020-2021
Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on
Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a program to count the occurrences of vowel from a input string.   **[20 Marks]**

Q2. Create a structure Item (Ino, Iname, Price). Accept details of n Items and write a

   menu driven program to perform the following operations options.   **[20 Marks]**

   1. Display all Items having price > 800
   2. Display Item record with Ino=2

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with

   appropriate data types and Constraints.   **[20 Marks]**

            Student (rollno, sname, class, timetable)
            Lab (LabNo, LabName, capacity, equipment)

   Relation between Student and Lab is Many to One.
   Constraint: Primary Key, capacity should not be null.

   Consider the above tables and execute the following queries:
      1. Add column Phone_No with data type int in Student table.
      2. Display lab wise capacity.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

      1. Display practical time table of class 'FYBBA(CA)'.
      2. Display the LabName in which 'Mr Advait' is doing practical.
      3. List out class wise students.
      4. Delete the column equipment from Lab table.
      5. Update capacity of Lab to 100 whose Number is 1.

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a program to accept a string and then count the occurrences of a specific

   character of a string.   **[20 Marks]**

Q2. Write a program to accept two numbers as range and display multiplication table

   of all numbers within that range.   **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with

   appropriate data types and Constraints.   **[20 Marks]**

Blood (blood_id, blood_group, cholesterol_level, storage)
Donar (donar_id, name, address, gender, phone_no)

Relation between Blood and Donar is Many to one.
Constraint: Primary Key , Blood_group should not be null.

Consider the above tables and execute the following queries:
   1. List out Donar wise Blood_group.
   2. Display cholesterol_level of blood which is given by 'Mr. Mahandule'.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

   1. Display the stock of blood whose group is "O+ve".
   2. Delete gender column from Donar table.
   3. Update storage of blood to 100 bottles whose blood_group is "B+ve".
   4. Display blood group having maximum storage.
   5. Display the details of donar in ascending order of donar_name.

Q5. Viva / Oral   **[20 Marks]**

Time: - 3 Hours]   [Marks: - 100

Q1. Write a C program to calculate factorial of a number using user defined function.

[20 Marks]

Q2. Write a program, which accepts a number n and displays each digit separated by tabs.

Example: 6702 Output = 6   7   0   2   **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with
    appropriate data types and Constraints.   **[20 Marks]**

Country (CId, CName , no_of_states, area, location, population)

Citizen(Id, Name, mother_toung, state_name)

Relation between Country and Citizen is one to many.
Constraint: Primary key, area should not be null.

Consider the above tables and execute the following queries:
    1. List out country wise number of states.
    2. Display the name of country having minimum population.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

    1. Display citizens whose mother_tounge is 'marathi'.
    2. Update the population of India to 10000000.
    3. Display citizen details in descending order by state_name.
    4. Display country details having population more than 1000000.
    5. Display Country details where 'Ms Reshma' is staying.

Q5. Viva / Oral   **[20 Marks]**

Lab Course: (SW-105 (P) and (SW-106 (P)) Computer Lab Based on Programming in C and DBMS.

Time: - 3 Hours]   [Marks: - 100

Q1. Write a program to find sum of digits of a given input number using user defined

Function   **[20 Marks]**

Q2. Write a program to accept a number and count number of even, odd and zero digits

within that number.   **[20 Marks]**

Q3. Consider the following entities and their relationships. Create a RDB in 3 NF with

appropriate data types and Constraints.   **[20 Marks]**

Library(Lno, Lname, Location, Librarian, no_of_books)
Book(Bid, Bname, Author_Name, Price, publication)

Relation between Library and Book is one to many.
Constraint: Primary key, Price should not be null.

Consider the above tables and execute the following queries:
1. Display library details having number of books greater than 10000.
2. Display the list of books of 'BPB' publication.

Q4. Consider the above tables and execute the following queries: **[20 Marks]**

1. Display publication wise number of books.
2. Display total price of books of 'Nirali' publication.
3. Delete the book details of Vision publication from 'DPU' Library.
4. Display all books of author whose initial character of name is 'A'.
5. Update number of books of success publication to 1000 from DYP library.

Q5. Viva / Oral   **[20 Marks]**