# LAB MANUAL ----OOP using C++

# Session- Jan to June 2019 (B.TECH 4th sem)

**********

## OOP ( CLASS AND OBJECT )

1) WAP in C++ using class to find the percentage of marks of two subjects and percentage of attendance of a student.
2) WAP in C++ using a class to add two given time (in hours and minutes) by passing objects as function arguments **(pass by value**).
3) WAP in C++ using a class to add two given weights (in kg and grams) by passing objects as function arguments using **pass by reference** method.
4) WAP in C++ using a class to add the marks scored by a student by passing objects as function arguments using **pass by reference** method.
5) WAP in C++ using a class to add the marks scored by a student by using **function returning objects**.
6) WAP in C++ using a class to find the sum of two complex numbers (objects) by using **function returning objects.**
7) WAP in C++ to show electricity bill.
8) WAP in C++ using a class to display the larger of 2 numbers using **nesting of member functions.**
9) WAP in C++ using a **friend function** to access a function which is declared outside two classes to calculate the larger between two numbers.
10) WAP in C++ to use a common **friend function** to exchange the private values of two classes. The function is called by reference.
11) WAP using a **friend function** to display the perimeter of a cuboid which is calculated in a function that is outside the class.

## ARRAY OF OBJECTS

12) WAP in C++ using array of objects, to display the details of 3 Employees of a bank.
13) WAP in C++ using array of objects to display a Library information system. Calculate the remaining books after borrowing from library and also after returning of the books.

## POINTERS

14) WAP to find the maximum of a set of numbers. The numbers are taken from user. The program will print a pointer that points to the maximum value.

15) WAP to pass two parameters and display the addition and subtraction using **'this' pointer.**

## CONSTRUCTOR

16) WAP in C++ using default constructor which initializes details of a volleyball match. Create the variable, score of the player dynamically and for that score create an array for the number of matches. Display the player name ,player-id of the players ,number of matches in the tournament, and score.

17) Write a C++ program to create a class fixed deposit account which contains members (fixed deposit no, name of account, amount, interest rate, maturity amount and number of months (duration)). Write a parameterized constructor for the class. Calculate maturity amount using interest and display all the details of a customer.

18) WAP in C++ using overloading of constructors to find the cost of painting the area of a house @ of Rs.50 per square feet.

19) WAP in C++ to display the roll no. and marks of a student using copy constructor (shallow copy).

20) WAP in C++ to copy the dynamically allocated memory of a variable using copy constructor (deep copy).

21) WAP in C++ to de-allocate the dynamically allocated memory of a variable using a destructor.

## ARRAY --1D and 2D

22) WAP in C++ to add marks of 7 subjects of a student using 1D array.

23) WAP in C++ using a class to find the addition of two matrices.

24) WAP in C++ using a class to search an element in a matrix in row wise and column wise sorted matrix.

25) WAP in C++ using a class to find the intersection of two matrices.

26) WAP in C++ using a class to swap elements of row with column.

27) WAP in C++ using a class to rotate a matrix by 90 degree.

28) WAP in C++ using a class to find the maximum number in a matrix.

29) WAP in C++ to find the maximum number element in each of the rows of a matrix.

30) WAP in C++ to find the maximum number element in each of the columns of a matrix.

31) WAP in C++ using a class to find the smallest number in a matrix.

32) WAP in C++ using a class to find the largest number in a matrix.

## INHERITANCE

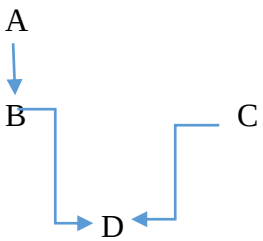
33) WAP in C++ to display the roll no and name of a student to show single inheritance.
34) WAP in C++ to define a class that displays the total bill of items and the details. The customer purchases ' n ' items. Derive a class from the base class that calculates a discount on the bill provided to the customer.

35) WAP in C++ to show multilevel inheritance

36) WAP in C++ to show multiple inheritance.

37) WAP in C++ to show hierarchical inheritance

38) Design the classes using the following hybrid inheritance.




39) WAP in C++ to resolve the diamond problem.

## POLYMORPHISM

40) WAP in c++ to show compile time polymorphism.
41) WAP in c++ to show run-time polymorphism.

## OPERATOR OVERLOADING

42) WAP in c++ to show unary operator overloading for increment and decrement operator.

43) WAP in c++ to show unary operator overloading for – (minus) operator.

44) WAP in c++ to show binary operator overloading to subtract two complex numbers.

## EXCEPTION HANDLING

45) WAP in C++ to handle a division by zero exception.

## TEMPLATE

46) WAP in c++ using template function to show swapping of two numbers for int and float type.

---