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| Faculty: BSc.CSIT |  | Semester: Second |
| Subject: OOP |  | Year : First |

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| **S.N.** | **Title** | **Date of Submission** | **Sign** |
| 1. | Writing Simple Programs in C++   1. WAP to display the message "Hello World" using C++. 2. WAP to input a number and display Even or Odd using C++. 3. WAP to input a number and display its table upto 10 terms using C++. 4. WAP to input two numbers and display their sum, difference, product and division. | 2081/04/ |  |
| 2. | Writing C++ programs using Classes and objects.   1. Define a class Person with private members for the person's name and age. Write methods to set and get these values. 2. Create a class Point that represents a point in a 2D space with x and y coordinates. Write methods to set and get the coordinates. 3. Define a class Circle with a member for the radius. Write methods to calculate the circumference and area of the circle. 4. Implement a class Book with members for the title, author, price and number of pages. Include methods to set and get these values. 5. Create a class BankAccount with members for the account number and balance. Write methods to deposit and withdraw money, and to check the balance. 6. Write a class Date that represents a date with day, month, and year members. Include methods to set and display the date. 7. Create a class Complex Number and write methods to set and get the number. | 2081/04/ |  |
| 3. | To illustrate the concept of different types of constructors (default, parameterized and copy) in C++.   1. Write a class Person with a constructor that initializes the name and age of the person. 2. Write a program to demonstrate the use of different types of constructors in C++ . | 2081/04/ |  |
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| 4. | To Demonstrate the Friend Functions in C++.   1. Define a Rectangle class with private data members length and width. Create a friend function getArea that calculates and returns the area of the rectangle. 2. Define a person class to include a friend function compareAge that compares the ages of two person objects and prints which one has a greater age. 3. Create classes Circle and Rectangle. Define a friend function compareArea outside both classes that compares the area of a Circle and a Rectangle object and prints the larger one. 4. Design a class BankAccount with private data members balance and ownerName. Implement a friend function transferFunds that allows transferring funds between two BankAccount objects. | 2081/05/\_\_ |  |
| 5. | Passing object as a function argument and returning object from a function in C++.   1. WAP to create a rectangle class with data members length, breadth and color. Initialize length and breadth from constructor. Create a none member function paint that takes rectangle object and a color as arguments and returns the colored rectangle. 2. Create Car and Driver classes and necessary data members. Write a drive function in car class so that when a driver object is passed as argument, it displays the information about the car condition according to driver skill. 3. Create a ComplexNumber class and necessary members. Also create a member function add, that adds two complex numbers and returns a new complex number as a sum of two. 4. Create a class Point with necessary data members. Write a function that takes two points as arguments and returns the mid point. | 2081/05/\_\_ |  |
| 6. | To illustrate the concept of function overloading in C++.   1. WAP to overload a function sum() that can add two integers, two floats and two strings. 2. WAP to overload constructor using any class of your choice. | 2081/05/\_\_ |  |
| 7. | To illustrate the concept of unary and binary operator overloading in C++.   1. WAP to overload the operator ++. 2. WAP to overload the operator < to compare two person based on their age. | 2081/05/\_\_ |  |
| 8. | To illustrate the concept of inheritance and its types in C++.  (WAP of your choice) | 2081/04/25 |  |
| 9. | To illustrate the concept of public, protected and private keyword in inheritance.  (WAP of your choice) | 2081/04/25 |  |
| 10. | To illustrate the concept of pure virtual functions and abstract classes in C++.  (WAP of your choice) | 2081/04/25 |  |
| 11. | To illustrate the concept of runtime polymorphism in C++.  (WAP of your choice) | 2081/04/25 |  |
| 12. | Lab 12: To study the stream classes and File Handling in C++.   1. Write a program to demonstrate the stream operators (insertion and extraction) overloading. 2. Write a C++ program to enter the names of any five person and store in a text file named “person.txt”. 3. Write a C++ program to display the content of “person.txt” file on the console. 4. Write a C++ program to add more new records in the file “person.txt”. 5. Write a C++ program to copy the contents of one text file to another. The program should read from “source.txt” and write the content to “destination.txt”. 6. Write a C++ program that searches for a specific word in a text file and counts the number of times it appears. The program should be case-insensitive. 7. Write a C++ program to encrypt the content of a file using a simple algorithm (e.g., Caesar cipher) and write the encrypted content to another file. Then, write a function to decrypt the file and display the original content. | 2081/04/25 |  |
| 13. | Development of a Simple Console Based App using C++. | 2081/04/25 |  |