OOP C++ (Assignment#1) **Deadline 2075/8/17**

1. Explain the characteristics of OOP. Write a program to create class "time" with data members hours, minute and second. Then add two "time" objects by taking object as argument and also returning object as argument.
2. Write the program to find prime numbers in procedural and object oriented ways.
3. What are the advantages and disadvantages of object oriented programming over procedural programming? Briefly describe the features of C++.
4. Explain character set and tokens in C++ with example.
5. Define Dynamic memory allocation. How do you use it in C++? Explain reference variable with suitable example. Write a program to swap two numbers using pass by reference concept.
6. Why don't you use an object to call the Static Member Function, explain with example?
7. Write down the significance of reference variable with suitable example. Define default argument. Write a program to show the relation between default argument and function overloading.
8. When inline function may not work? What do you understand by Default Arguments? Write syntax of-Default Arguments . Write a program to display N number of characters by using default arguments for both parameters. Assume that the function takes two arguments one character to be printed and other number of characters to be printed.
9. Write a program to find the transpose of given Matrix using the concept of Object Oriented Programming.
10. Explain how default argument supports the function overloading with suitable example. Define namespace with its significance.
11. Define constructor. Why constructor is needed for a class? Explain about different types of constructor with a suitable program. Why do you need to use a reference in the argument to the copy constructor? Write a program to calculate the Perimeter of Triangle using Default and Parameterized constructors.
12. List down the difference between constructor and destructor. Write a class that can store Department ID and Department name with constructors to initialize its members. Write destructor member in the same class and display message ”object goes out of scope”. Your program should be made such that it should show the order of constructor and destructor invocation.
13. Define ‘this pointer’ with its applications. Explain the order in which constructor and destructor are invoked with suitable example.
14. Explain the relation between constant object and constant function with example. When do we use static data member and static function? Give example.
15. Write a program to perform addition of two metric distances which takes object as argument an also returns object as argument.
16. What is literals and identifiers? What is function overloading? Write a program to find the area of circle, rectangle and square using function overloading.
17. What is data abstraction and encapsulation? Explain them with example.
18. What do you understand by friend functions and classes? Explain with examples. Write a program to add members of objects of two different classes.
19. Use **new** and **delete** operators to store n numbers dynamically and find their average using casting operator.
20. Do friends violate encapsulation? Write a program to illustrate use of keyword **const** and enumerations.