**53 (IT 401) OOPD**

# 2017

## OBJECT ORIENTED
## PROGRAMMING & DESIGN

Paper : IT-401

*Full Marks : 100*

Time : Three hours

### *The figures in the margin indicate full marks for the questions.*

*Answer **any five** questions.*

1. *(a)* Does C++ allow users to have two functions with same name while one function is a class member and another an external function ? Justify your answer.     5

   *(b)* Can we have a constructor with all default arguments ? Justify your answer.     5

   *(c)* Write function template to swap the position of the largest and the smallest element in the array.     10

2. (a) Is there any way to access class private members without its objects ? Justify your answer. 5

(b) What are the techniques of invoking a copy constructor ? 5

(c) Write a C++ program to count the number of characters and number of lines in a file. 10

3. Write a program to add two numbers of a class. Use friend function, pointer to data members, pointer to member function, and pointer to the object. 20

4. (a) Why does friend function take two objects and a member function take just one object in an overloaded binary operator function ? Explain with example. 10

(b) Can a generic function be overloaded ? Justify your answer with an example. 10

5. Write a program using constructors to concatenate two strings. The memory for the string must be allocated dynamically. 20

6. *(a)* Can we overload << and >> operators by using a member function of the class ? Justify your answer. 10

   *(b)* What is the order of calling the constructors in multiple inheritance ? Explain with a sample code. 10

7. *(a)* What is a virtual table ? How is it related to virtual pointer ? 10

   *(b)* Can try block be nested inside another try block ? Give a suitable example to illustrate your answer. 10

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