

Third Semester B.E. Degree Examination, January 2013
Object Oriented Programming with C++

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
atleast TWO questions from each part.**

PART – A

- 1 a. Explain the following OOP features :
 - i) Class ii) Encapsulation iii) Polymorphism iv) Inheritance. (08 Marks)
 - b. Define inline function. Explain with an example program. What are the conditions, where inline functions can not be expanded? (06 Marks)
 - c. Define function overloading. Demonstrate with C++ program. (06 Marks)
- 2 a. Write a C++ program to keep track of the number of objects created by a particular class without, using extern variable. (06 Marks)
- b. Determine the output for the following snippets and comment. (06 Marks)

```
i) class A
{ int x = 10 ;
void display( )
{
cout <<"The value of x = " <<x ;
}
}
void main()
{
A obj ;
obj. display( );
}
```

```
ii) class A
{ int pvt ;
Public ; int * ptr – pub ;
A( ) {
pvt = 25 ;
pvt_pub = &pvt ;
}
void print_private( )
{
cont << pvt <<endl ;n
}
};
void main( )
{
A objA ;
* objA. ptr_pub = 10 ;
objA. print_private( )
}.
```

- c. Demonstrate with C++ program for
 - i) Passing objects to functions
 - ii) Returning objects. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

- 3 a. Define friend function. Explain with a C++ program to add 2 complex numbers. (08 Marks)
b. Write a C++ program to overload pre – increment and post – increment operators. (08 Marks)
c. State the advantages of Generic functions and classes and give the syntax for both.(04 Marks)
- 4 a. Write bubble sort program in C++ to sort int and double data type elements. using template function. (08 Marks)
b. List out the impacts on public, protected and private data members of base class, when the base class is derived by
i) public
ii) protected
iii) private access specifies. Demonstrate it by writing separate C++ program for each. (12 Marks)

PART – B

- 5 a. What ambiguities arise when multiple base class are inherited. How do you resolve them? Explain with a C++ program. (08 Marks)
b. Explain with a C++ program how to pass parameters to base – class constructor. (08 Marks)
c. Discuss the order of invocation of constructor and destructor. (04 Marks)
- 6 a. Show that in C++, virtual functions are hierarchical. (06 Marks)
b. What is an abstract class? Write a C++ program to implement the abstract class. (10 Marks)
c. Write a short note on early v/s late binding. (04 Marks)
- 7 a. With examples, list and explain any four I/O manipulators in C++. (06 Marks)
b. Demonstrate the random access to files in C++, using relevant stream class functions. (06 Marks)
c. What is the necessity of exception handling? Show how multiple catch statements are used. (08 Marks)
- 8 Write short note on the following
a. Copy constructor
b. New and delete
c. Lists
d. Vectors. (20 Marks)

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