

III Semester B.Tech. Examination, Feb./March 2010
OBJECT ORIENTED PROGRAMMING WITH C++

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) Answer *all* questions in Part A, 6 out of 8 questions in Part B and 3 out of 5 questions in Part C.
- 2) Part A : Questions from 1 to 8 carry 1 mark *each* and 9 to 14 carry 2 marks *each*.
- 3) Part B : *Each* question carries 5 marks.
- 4) Part C : *Each* question carries 10 marks.

PART – A

1. What is compile time ?
2. What are the differences between the function prototype and the function definition ?
3. Can member data be public ?
4. The fields in a class of a C++ program are by default _____
5. Should you pass exceptions by value or by reference ?
6. What is the difference between public and private data members ?
7. Where must the declaration of a friend function appear ?
8. What is the difference between strcpy() and strncpy() ?
9. What is a friend function ?
10. What is encapsulation ?

P.T.O.

11. Predict the output or error(s) for the following:

```
class base
{
    public:
        virtual void baseFun(){ cout<<"from base"<<endl;}
};
class deri:public base
{
    public:
        void baseFun(){ cout<<"from derived"<<endl;}
};
void SomeFunc(base *baseObj)
{
    baseObj->baseFun();
}
int main()
{
    base baseObject;
    SomeFunc(&baseObject);
    deri deriObject;
    SomeFunc(*deriObject);
}
```

12. State clearly the syntax of a structure with an example.

13. What is multiple inheritance ?

14. What is a function template ?

PART – B

1. Explain the insertion and extraction operator and their cascading, taking suitable example.
2. Explain the scope of resolution operator with an example.
3. What are constructors? Explain the different types of constructors.
4. Describe the new and delete operators with examples.

5. Write a function using reference variables as arguments to swap the values of a pair of integers.
6. Explain the importance of static data member function.
7. Explain with the help of an example the use of 'this' pointer.
8. Write a C++ program to read a text from keyboard and display the following information. i) Number of lines ii) Number of words.

PART – C

1. What is object oriented programming ? Explain the features of OOP.
2. Write a C++ program to add two complex numbers by overloading the + operator.
3. Write down a program to show the inheritance concept in programming and discuss the relevant features.
4. Explain with examples virtual functions and abstract classes.
5. Electricity over charges the following rates to domestic users.

For first 100 units – Rs. 3/unit

For the next 200 units – Rs. 4/unit

Beyond 300 units – Rs. 5/unit

All users are charged a minimum of Rs. 150. If the total amount is more than Rs. 500 then an additional surcharge of 10% is added. Write a C program to read the names and number of units consumed and print out the charges with names.
