

Registration No. :

|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|

Total number of printed pages – 2

B. Tech  
BECS 2212

**Third Semester Examination – 2013**

**C++ AND OBJECT ORIENTED PROGRAMMING**

**BRANCH : MINING, MINERAL, FAT, MM, PLASTIC, MME, CHEM, BIOMED,  
TEXTILE, FASHION. CIVIL, ENV, BIOTECH, ELECTRICAL, EEE**

**QUESTION CODE : C-479**

**Full Marks – 70**

**Time : 3 Hours**

*Answer Question No. 1 which is compulsory and any **five** from the rest.*

*The figures in the right-hand margin indicate marks.*

1. Answer the following questions : 2×10
- (a) What are the basic concepts of OOP ?
  - (b) What is an Abstract Class ?
  - (c) Define Base class and Derived class.
  - (d) What is a modifier ?
  - (e) What is an Iterator class ?
  - (f) What is the output of the following code :  

```
char symbol[3]={'a','b','c'};  
for (int index=0; index<3; index++)  
cout << symbol [index];
```
  - (g) What are the two operators used for Dynamic Memory management in C++ ?
  - (h) How are binary files different from text files in C++ ?
  - (i) Name the streams generally used for file I/O.
  - (j) Write down the Try and Catch construct.

**P.T.O.**

2. (a) What are the major differences between Object Oriented Programming and Procedural Programming ? 5  
(b) What is a constructor ? What are its features ? 5
3. (a) What are the different forms of inheritance in C++? 5  
(b) What are the various ways of handling exceptions ? 5
4. Write a program to overload the operator '+' for complex numbers. 10
5. (a) What is friend function ? Explain the characteristics with a suitable example. 5  
(b) What do you mean by static class members ? Explain the characteristics of static class members with suitable examples. 5
6. (a) How are template functions overloaded ? Explain with a suitable example. 5  
(b) Write a program to overload the unary minus operator using friend function. 5
7. Create a class Patient that stores the patient name (a string) and the disease (a string) of the patient. From this class derive two classes : In\_patient which has a data member room\_rent (type float) and Out\_patient which has a data member OPD\_charges (float). Each of these three classes should have a nondefault constructor and a putdata() function to display its data. Write a main() program to test In\_patient and Out\_patient classes by creating instances of them and then displaying the data with putdata(). 10
8. Write short notes any **two** of the following : 5×2  
(a) Function Prototyping  
(b) Late Binding  
(c) Object Slicing  
(d) Namespace.