

**Third Semester Special Examination, 2012**  
**OBJECT ORIENTED PROGRAMMING USING C++**

**Full Marks: 70**

**Time: 3 Hours**

Answer six questions including question No.1 which is compulsory  
Figures in the right hand margin indicate marks

1. Answer the following questions: [2 × 10]

- (i) What is the difference between a C++ structure and a C++ class?
- (ii) What are the benefits of operator overloading?
- (iii) What is the output of the following segment of C++ code :

```
int a=10, b;  
b = ++a + a--;  
cout << b;
```
- (iv) What is a "pure virtual" member function?
- (v) What is containership in C++?
- (vi) What do you meant by dynamic binding?
- (vii) When somebody throw "this" object, how many times it will be copied?  
Justify your answer.
- (viii) State True or False with justification:  
Two pointers that point to different arrays cannot be compared meaningfully.
- (ix) How can you use the concept of object slicing in a C++ program?
- (x) State the importance of Namespace.

2. (a) Explain the features of OOP with example. 5

(b) A palindrome is a number or a text phrase that reads the same backward as forward. For example, each of the following five-digit integers is a palindrome: 12321, 55555, 45554 and 11611. Write a C++ program that reads in a five-digit integer and determines whether it's a palindrome. 5

3. (a) Distinguish between the following two segments: 5

```
time T2(T1);  
time T2 = T1;
```

T1 and T2 are objects of time class.

- (b) Derive a class Manager from Employee. Add a data field, named department, of type string. Supply a function print that prints the manager's name, department, and salary. Derive a class Executive from Manager. Supply a function print that prints the string Executive, followed by the information stored in the Manager base object. 5
4. (a) Write a C++ program by using function template to check whether a given number is prime or not. 5
- (b) Write a C++ program using class to reverse a string. 5
5. (a) How you will initialize a pointer? 5  
State the differences among  
char const \*p;  
char \*const p;  
const char \* const p;
- (b) Define inheritance. State its use. 5  
Briefly explain the different types of inheritance associated with C++.
6. (a) Write a program in C++ to convert a given decimal number to corresponding binary equivalent using function. 5
- (b) Write a C++ program to overload the addition operator so that it can be used to concatenate two input strings. 5
7. (a) Mention the class hierarchy associated with iostreams. 5
- (b) Write a C++ program that creates a text file "BPUT.text" and then writes an input string to it. 5
8. Write short notes on any two: [5 × 2]
- (a) Exception handling
- (b) Virtual function
- (c) Abstraction mechanisms
- (d) Iterators vs. Hashes