LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **STATISTICS**

FIFTH SEMESTER – NOVEMBER 2007

ST 5401 - C AND C ++

BB 19

Date : 06/11/2007
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

SECTION – A

Answer all question   **10 x 2 =20**

1. What are preprocessor directives?
2. Give the syntax and use of 'sizeof ' operator.
3. Let X be an integer variable with value 10. What will be the value of $X<<1$?
4. What are control statements?
5. Mention the use of scope resolution operator.
6. What is meant by data encapsulation?
7. Write a program in C++ to display all the even numbers between 1 and 100.
8. What will be the output of the following program?

```
#include<iostream.h>
void main ( )
{
  cout << " Welcome" << endl;
  main ( ) ;
}
```

9. How many key words are available in C++? Mention any two of them that are not available in C.
10. Mention the difference between library functions and user defined functions.

SECTION - B

Answer any FIVE questions   **5 x 8 =40**

11. Explain why 'C' language is referred to as a structured programming language.
12. Write a program to display all the prime numbers between 1 and 100.
13. Explain the concept of one dimensional and two dimensional arrays.
14. Write a program to perform the operations of a basic calculator namely '+' for addition , '-' for subtraction , 'x' for multiplication and '/' for division of 2 integers using switch-case statement.
15. Write a program to accept a matrix of order n x n and display its transpose and trace.
16. Explain the concept of 'inline' function with an example.
17. Write a program in C++ to create a class by name 'test' that contains two private integer data members a and b. The class should contain a member function getdata ( ) to accept values for the data members. Use a friend function by name 'average' to display the average value of a and b.
18. Explain the concept of copy constructor with an example.

SECTION- C

Answer any TWO questions   **2 x 20 = 40**

19. a) Explain the concept of jumping, branching and looping with examples
    b) Write a C program to find the roots of the quadratic equation $ax^2+bx+c=0$
                                                                    $(10 + 10)$
20. a) Write a C program to accept 'n' integers and display them in descending order.
    b) Write a C program to accept an integer and display it in reverse order.   (Your program should not use arrays and string functions). $(10 + 10)$
21. a) What are Constructors and Destructors? Mention the differences between them.
    b) Explain the concept of operator over loading. Write a C++ program to add two objects using the binary operator '+'. $(8 + 12)$
22. a) Define: Single, Multiple, Hierarchical and Multilevel Inheritance.
    b) Write a C++ program that uses the concept of single inheritance. $(8 + 12)$