FACULTY OF ENGINEERING & INFORMATICS

B.E. I Year (New) (Common to all Branches) (Main) Examination, June 2011

Programming in C & C++

Time: 3 Hours  [ Max. Marks: 75

Note: Answer all questions from Part A, answer any five questions from Part B.

PART - A (25 Marks)

1. Define function. Explain characteristics of function.
2. Differentiate between local & global variable.
3. Define Array.
4. Write a program to calculate cube of a number by using pointers.
5. What are the various pre-processor commands?
6. What is copy constructor?
7. Explain the meaning of base class and derived class.
8. What is the output of the following?

```c
#include <stdio.h>
main ()
{
unsigned int x, y;
x = 128, y = 32;
x = x>>1;
printf ("After right shifting by 1 x=%d", x);
y = y<<2;
}
printf ("After left shifting by 2 y=%d", y);
```
9. Explain string handling Library functions.
10. Define friend function.

PART - B (50 Marks)

11. (a) Explain the various loops with simple program.
11. (b) Write a program to find the sum of the following:
\[
\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \ldots
\]

12. (a) Explain with a program the different parameter passing techniques.
12. (b) Write a program for binary search using function.

(This paper contains 2 pages)
13. (a) List the operations performed on pointer variables.  
(b) Write a program to find the matrix multiplication using pointers.

14. (a) Create a structure to specify data of customers in a bank. The data to be stored is: Account number, Name, Balance in account. Assume maximum of 50 customers in the bank. (a) Write a function to print account number and name of each customer with balance below Rs. 1000.  
(b) Differentiate between structure and union.

15. (a) Explain the advantages of object oriented programming.  
(b) Explain constructor with a program.

16. (a) Write a program to overload ‘T’ operator. 
(b) Explain various types of inheritances.

17. Write short notes on the following: 
(a) Function templates  
(b) Virtual function  
(c) Stream.