6006   *Your Roll No.* ....

B.Sc. (H) ELECTRONICS / III Sem.   B

Paper – CS-1

Fundamentals of Programming

(Admissions of 2010 and onwards)

Time : 3 Hours   *Maximum Marks :* 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt all questions.

1. Attempt any **10** :

   (a) What is the difference between an object and a class ?

   (b) What is a scope resolution operator ?

   (c) How do we declare pure virtual functions in C++ ?

   (d) When are constructor and destructor functions invoked ?

   (e) Do you think OOP is more closer to real world problems ? Why ?

   (f) How are static members different from non-static members of a class ?

   (g) How does a class enforce data-hiding and encapsulation ?

(h) Define multilevel and multiple inheritance in context of OOP.

(i) Explain how a pointer to a function can be declared ?

(j) What are explicit inline functions ?

(k) Give the syntax of switch statement.

(l) What do we mean by precedence of operators ?

$(2 \times 10 = 20)$

2. Differentiate between the following :– Do any **four**

(a) Structure and class

(b) Early Binding and Late binding

(c) Function Prototype and Function Defination

(d) float * fn(float) and float(*fn)(float)

(e) Break and Continue $(2.5 \times 4 = 10)$

3. Give the output of the following :–

(a) void main( )
```
{
        int i = -20;
        do {
                i + = 4;
                cout << i <<endl;
        } while (i > 0);
}
```

(b) int x = 5, y, z;
```
    y = x ++;
    z = ++x;
    cout << z << endl <<y;
```

(c) void f(int & pa, int b)
```
    {
            a + = 5;
            b - = 5;
    }
    void main( )
    {
        int a = 10, b = 20;
        f(a, b);
        cout <<"a = " << a << endl;
        cout <<"b = " << b << endl;
    }                                    (3×3=9)
```

4. Find Errors if any in the following :—

(a) # include (iostream)
```
    void main( )
    {
        cin <<"Hello World";
        return;
    }
```

(b) class Fun {
```
        private :
            int a;
        public :
            int Fun (int x);
    }                                    (2×2=4)
```

5. What do you mean by actual parameters and formal parameters ? What do you understand by default arguments. Explain these with the help of examples. (8)

6. Write a program to perform various operations on a string class without using language supported built-in string functions, (defined in string.h). The operations on a class are :–

   (i) Input a string

   (ii) Reverse the string (5)

7. Define and explain all the features of Object Oriented Programming ? (8)

8. Write a program to copy the contents of one text file onto another .text file. (5)

9. Write a C++ program to :

   (a) Define a class 'number' with two integer data members.

   (b) Define a member function setvalue( ) to assign value to these data members.

   (c) Define a friend function sum( ) which returns the sum of the data members of this class. (6)