



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.Tech(O-II)/SEM-3-(Pre-requisite)/CS-301/2012-13  
2012**

**PRINCIPLES OF PROGRAMMING LANGUAGE**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following :

10 × 1 = 10

- i) The && and || operators
  - a) compare two numeric values
  - b) combine two numeric values
  - c) compare two Boolean values
  - d) combine two Boolean values.
- ii) Protected members are not accessible outside the
  - a) base class
  - b) desired class
  - c) all of these
  - d) none of these.
- iii) The library function exit ( ) causes an exit from
  - a) the loop in which it occurs
  - b) the block in which it occurs
  - c) the function in which it occurs
  - d) the program in which it occurs.



- iv) The scope resolution operator usually
- a) resolves ambiguity
  - b) specifies a particular class
  - c) tells what base class a class is derived from
  - d) limits the visibility of variables to a certain function.
- v) The minimum numbers of temporary variables needed to swap the contents of two variables is
- a) 1
  - b) 2
  - c) 3
  - d) 0.
- vi) `int ( * m ) [ 5 ]` is a declaration of
- a) pointer to an array
  - b) array of pointers
  - c) pointer to a function
  - d) function returning a pointer.
- vii) What is the output of the following code ?
- ```
main ()
{
    printf("%d",sum(5));
}

int sum(int n)
{
    if(n<1) return n;
    else
        return(n+sum(n-1));
}
```
- a) 13
  - b) 14
  - c) 15
  - d) 16.

```
int main ()
{
    int x,y=10,z=10;
    x=(y==z);
    cout<<x;
    return 0;
}
```

- GROUP – B**

Answer any *three* of the following.  $3 \times 5 = 15$

- 3401 ( O-II (PRE-REQUISITE) )



4. a) Why do we get error message “L value required” and “R value required” in function main ( ) ? 3  
b) Why do we use void pointer ? 2
5. a) What is c preprocessor ? 2  
b) When we should follow recursion and when we should avoid it ? Explain. 3

### GROUP - C

#### ( Long Answer Type Questions )

Answer any *three* of the following.  $3 \times 15 = 45$

6. a) Write a C program to multiply two 2 2 matrix. 6  
b) Compare and contrast among inline, macro and function. 4  
c) Write a C program to calculate the g.c.d. of two numbers using recursion. 5
7. a) Explain the concept of operator overloading and function overloading in C++ language. Give examples.  $4\frac{1}{2} + 4\frac{1}{2}$   
b) Explain private, public, protected access specifier in the context of oops. 6
8. a) Write a function xstrcat ( ) which will concatenate one string with another string. The prototype of the function would be char xstrcat(char \*target, char \*source). The function should return a pointer to target string & and source string should be concatenated at the end of the target string. 6  
b) Discuss the different types of file permission modes in C language. 4  
c) What is the use of library function fseek( ) ? Write a C program using fseek( ) function. 5
9. Write short notes on any *three* of the following :  $3 \times 5$ 
  - a) Polymorphism
  - b) Virtual base class
  - c) Friend function
  - d) Dynamic memory allocation.