COMPUTER · programming
29/12/10
GT-7812

Con. 6231-10.   FE/Sem-I / Computer Prog. -I

(3 Hours)
[Total Marks : 100

N.B. : (1) Question No. **1** is **compulsory**.
    (2) Attempt any **four** questions out of remaining **six** questions.
    (3) **Figures** to the **right** indicates **full** marks.

20

1. Find o/p of the following programs (**5 marks each**)

    (a)
```
void main ()
{
 int a=1,b=2,c=3,d=4.75,x;
 x=++a + b++ * ++c%d++;
 cout<<a<<" "<<b<," "<<c<<" "<<d<<" "<<x<<endl;
}
```

    (b)
```
Void main ()
{
 int x=1;
 cout<<x<<(x=x+2)<< (x<<2),,endl;
 x<<2;
 cout<<++x<<x++<<++x<<endl;
}
```

    (c)
```
int x;
voidf1()
{
 ++x;
}
vpid main()
{
 int x=10;
f1();
x=::x+10;
cout<<x<" "<<::x<<endl;
}
```

    (d)
```
class Teat
{
public:
Test()
{
cout<<"constructor"<<endl;
}
~Test()
{
cout<<"destructor"<<endl;
}
void main()
Test t1:
{
Test t2, t3;
}
Test t4;
}
```

2. (a) Write a program to print following pattern :—

```
        1
       21A
      321AB
     4321ABC
    54321ABCD
```

10

    (b) x=1! + 3! + 5! + (2*n-1)!

10

3. (a) What is recursion ? Write a recursive function to find n^{th} Fibonacci term. Use **10**
this function to generate n terms of the Fibonacci series.
(b) What is function overloading ? Overload function add to add two integers, two **10**
float and two arrays.

4. (a) What is operator overloading ? Overload operators +, +=, ++ on complex **10**
number.++ should increment real and imaginary parts by 1.
(b) Find o/p **5**

```
void f()
{
  extern int n3;
  static int n1;
  int n2=20;
  n1=n1+10;
  n2=n1+n2;
  n3=n1+n2;
cout<<n1<<" "<<n2<<" "<<n3<<endl
}
int n3;
void main()
{
  register int I;
for(i=1; i <=3; i++)f1();
}
```

(c) Write a program to count blank spaces, digits, vowels and consonants in the **5**
string.

5. (a) Write a program to create singly linked list of 10 student nodes. The student **10**
node contain roll no and percentage. Read information and print this information
in the linked list.
(b) Write a program using pointer to allocate memory for 10 integers. Read and **10**
print these integers. Find average of these integers.

6. (a) What is function overriding. Give example. **10**
(b) Explain Inheritance visibility. **5**
(c) Create class Circular with data member radius and member functions to read **5**
radius, print radius and calculate radius. Derive class cylinder from class circle.
Class Cylinder should have data member height and inherited radius from circle
and member functions to read height and radius and calculate area.

7. (a) Explain virtual function with example. **5**
(b) Explain pure virtual function with example. **5**
(c) Write pure virtual function convert to convert liters to milliliters, grams to kilograms, **10**
dollar to rupee. Assume 1 dollar is 45 rupes.