Page No.
Date

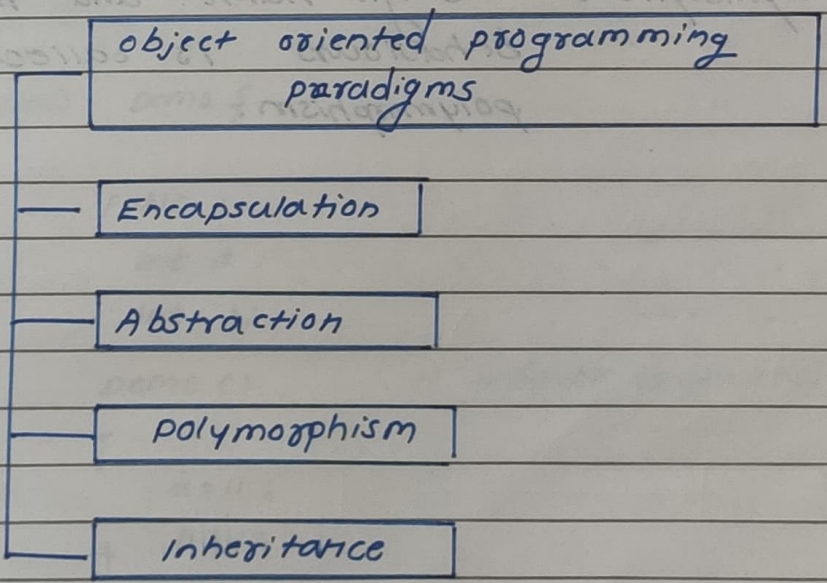
Assignment No. - 11

Q.1. What are characteristics of c++ programming language?

→
1. It is Native programming language
2. It is high level programming language
3. It is compiled programming language
4. It is an object oriented programming language.
5. It supports procedural as well as object oriented approch.
6. It is block structured language.
7. It supports static data typing concept.

Q.2. Explain object oriented programming paradigms.

→



1. Encapsulation - Binding characteristics and behaviour together is called as Encapsulation.

- To achieve encapsulation we create class.

2. Abstraction - Hiding something from outside world is called abstraction.

- To achieve this we use private access specifier.

3. Inheritance - one class can inherit properties of another class is called as Inheritance.

- In simple words reusability.

4. Polymorphism - single name and multiple behaviours is called as polymorphism.

Q.3. Explain concept of constructor and its types.

--> • Constructor is a special functions.

- constructor is function which gets automatically called when we create object of a class.

- compiler will call call constructor before allocating memory for object.

• There are three types of constructors.

1. Default constructor
2. parameterized constructor
3. copy constructor

• Example -

```
class Demo {

    public :
        int a ;
        int b;
        Demo ()          // Default constructor
        {
            a = 11 ;
            b = 12 ;
        }
        Demo (int A , int B)     // Parameterized constructor
        {   a = A;
            b = B;
        }
        Demo (Demo &ref)     // copy constructor
        {   a = ref.a ;
            b = ref.b ; } ;
```

Q.4. What is mean by Access Specifier?

→ The concept of access specifier used to specify which part of a class can be accessed by outsider and which part cannot be accessed.

- There are three types of access specifiers:

1. public
2. Private
3. Protected

- In java Default gets added.

1. public - If we want to allow everyone to access without any restriction, then it should be written under public class.

2. Private - If we want to hide something from outside world then we use private.

3. Protected - If the class wants to provide the access to its child class then its should written under protected access specifier.

Q.5. What are contents of class?

—> • class is defined as userdefined datatype.

- class is userdefined data type which contains two things in it:

1. characteristics [Data Members]
2. Behaviours [functions of class]

Q.6. What is the use of constructor & Destructor?

—> • constructor is used to initialize the characteristics as well as as used to allocate resources.

• constructor is not used to allocate the memory for object.

• Destructor is used to deallocate the resources which was allocated inside the constructor.

• Destructor gets automatically called before deallocating a memory of an object.

Q.7. Write a program to find max. of two numbers using procedural approach (c) & object oriented approach (c++).

→ procedural

```
#include <stdio.h>

int main()
{
    int num1, num2;
    int Ans;

    printf("Enter two integer Numbers:");
    scanf("%d %d", &num1, &num2);

    if (num1 > num2)
    {
        printf("%d Greater", num1);
    }
    else
    {
        printf("%d Greater", num2);
    }

    return 0;
}
```

Page No.
Date

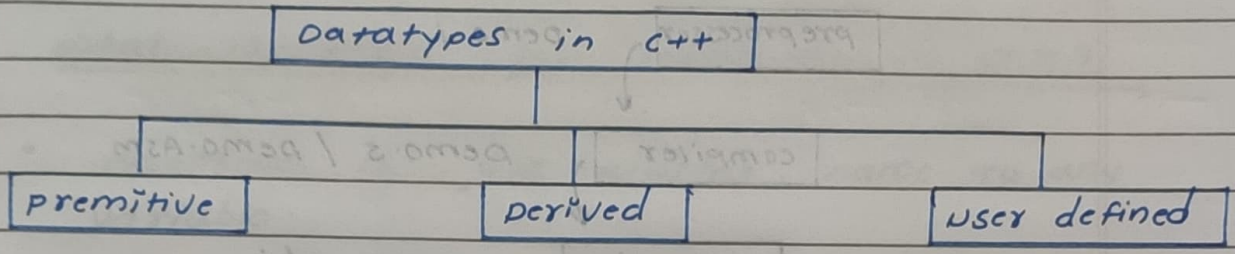
object oriented approach

```
# include <iostream>
using namespace std;

class Maximum
{
    public :
    int value1 , value2 ;

    maximum ( int No1 , int No2 )
    {
        value1 = No1 ;
        value2 = No2 ;
    }

    void maximum1 ()
    {
        if ( value1 > value2 )
        {
            cout << value1 << " Greater" ;
        }
        else if ( value1 < value2 )
        {
            cout << value2 << "Greater" ;
        }
        else if ( value1 = = value2 )
        {
            cout << " Both are some value" ;
        }
        else {
            cout << " Enter valid value" ;
        }
```

```
int main (){

    int a = 0;
    int b = 0;

cout << " Enter first Number: " <<endl;
cin >> a;

cout << " Enter second Number : " <<endl;
cin >> b;
    maximum obj ( a , b )
    obj. maximum1 ();

    return 0;

}
```

Q.8. What are the data types in c++ ?

—>



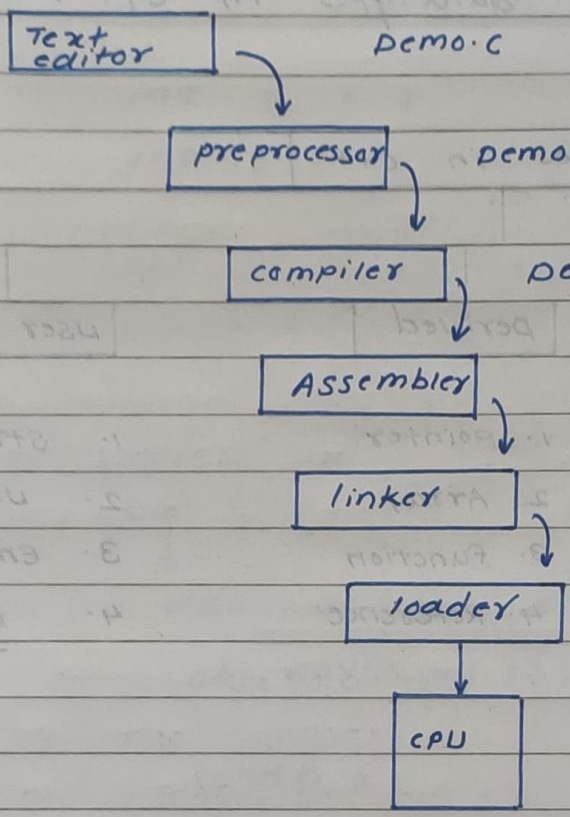
premitive	derived	User defined
1. boolean	1. pointer	1. structure
2. char	2. Array	2. Union
3. int	3. function	3. Enumeration
4. float	4. Reference	4. class
5. double		

Q.9. Explain toolchain of c++ program ?

- The toolchain of c++ program is same as we dicussed in previous Assignment.
- The toolchan of c and c++ is same, as the c++ program internally converted into c program.

- Toolchain of c++ contains :

1. text editor
2. preprocessor
3. compiler
4. Assembler
5. linker
6. Loader



- Explanation same as C

Q.10 What is the use of Abstraction.

—> • To provide the security to the data

• By using abstraction concept we can give more privcy privacy to our data.

• To achieve abstraction we use 'private' access specifier.