CHAPTER – 16 – INHERITANCE

I. Answer in brief(2 marks)

1. What is inheritance?

2. What is a base class?

3. Why derived class is called power packed class?

4. In what multilevel and multiple inheritance differ though both contains many base class?

5. What is the difference between public and private visibility mode?

II. Answer in a brief(3 marks)

1. What are the points to be noted while deriving a new class?

2. What is difference between the members present in the private visibility mode and the members present in the public visibility mode?

3. What is the difference between polymorphism and inheritance though are used for reusability of code?

4. What do you mean by overriding?

5. Write some facts about the execution of constructors and destructors in inheritance

III. Answer in a paragraph (5 marks)

1. Explain the different types of inheritance
2. Explain the different visibility mode through pictorial representation
3. **Consider the following c++ code and answer the questions**

```
class Personal
{
int Class,Rno;
char Section;
protected:
char Name[20];
public:
personal();
void pentry();
void Pdisplay(); };
class Marks:private Personal
{ float M{5};
protected:
char Grade[5];
public:
Marks();
void Mentry();
void Mdisplay(); };
class Result:public Marks
{
```

float Total,Agg;
public:
char FinalGrade, Commence[20];
Result();
void Rcalculate();
void Rdisplay();
};
3.1. Which type of Inheritance is shown in the program?

3.2. Specify the visibility mode of base classes.

3.3 Give the sequence of Constructor/Destructor Invocation when object of class Result is created.

3.4. Name the base class(/es) and derived class (/es).

3.5 Give number of bytes to be occupied by the object of the following class:

(a) Personal (b) Marks (c) Result

3.6. Write the names of data members accessible from the object of class Result.

3.7. Write the names of all member functions accessible from the object of class Result.

3.8 Write the names of all members accessible from member functions of class Result.

4. Write the output of the following program

```
#include<iostream>
using namespace std;
class A
{ protected:
int x;
public:
void show()
{cout<<"x = "<<x<<endl;}
A()
{ cout<<endl<<" I am class A "<<endl;}
~A()
{ cout<<endl<<" Bye ";} };
class B : public A
{protected:
int y;
public:
B(int x1, int y1)
{ x = x1;

    y = y1; }
    B()
    { cout<<endl<<" I am class B "<<endl; }
    ~B()
    { cout<<endl<<" Bye "; }
    void show()
    { cout<<"x = "<<x<<endl;
    cout<<"y = "<<y<<endl; } };
    int main()
    {A objA;
    B objB(30, 20);
    objB.show();
```

return 0; }

5. Debug the following program

```
%include(iostream.h)
#include<conio.h>
class A()
{ public;
int a1,a2:a3;
void getdata[]
{ a1=15; a2=13; a3=13; } }
class B:: public A()
{ PUBLIC
voidfunc()
{ int b1:b2:b3;
A::getdata[];
b1=a1;
b2=a2;
a3=a3;
cout<<b1<<'\t'<<b2<<'t\'<<b3; }
void main()
{ B der;

der1:func(); }
```

IV. **Additional Questions**

1. List the advantages of Inheritance?
2. Write the general form to define derived class?
3. What is the use of this pointer ? give example.
4. What is visibility? What is the difference between visibility modes and access specifiers?