

STD: XI

NOVEMBER MONTHLY TEST

Lesson: 14 to 18

Time Allowed: 3.00 Hrs.

COMPUTER SCIENCE

Maximum Marks: 70

I. Choose the best answer:

PART - I

15 X 1 = 15

1. The variable declared inside the class are known as
  - a) Data
  - b) Inline
  - c) Method
  - d) attributes
2. Which of the following access specifier protects data from inadvertent modifications?
  - a) private
  - b) Protected
  - c) Public
  - d) Global
3. State whether the following statements about the constructor are true or false.
  - i. constructor should be declared in the private section.
  - ii. constructor are invoked automatically when the objects are created.
  - a) true, true
  - b) true, false
  - c) false, true
  - d) false, false
4. which of the following reduces the number of comparisons in a program?
  - a) Operator overloading
  - b) Operations overloading
  - c) Function Overloading
  - d) Member overloading
5. Which of the following is not true with respect to function overloading?
  - a) The overloaded functions must differ in their signature.
  - b) The return type is also considered for overloading a function.
  - c) The default arguments of overloaded functions are not considered for overloading
  - d) destructor function cannot be overloaded.
6. The type of inheritance that reflects the transitive nature is
  - a) Single Inheritance
  - b) Multiple Inheritance
  - c) Multilevel inheritance
  - d) Hybrid Inheritance
7. Inheritance is a process of creating new class from
  - a) Base class
  - b) abstract
  - c) derived class
  - d) Function
8. Which of the following is true with respect to inheritance?
  - a) Private members of base class are inherited to the derived class with private
  - b) Private members of base class with private accessibility
  - c) Public members of base class are inherited but not visible to the derived class
  - d) Protected members of base class are inherited but not visible to the outside class.
9. The member function that is inherited as public by Class Bus
  - a) input\_data() , output\_data()
  - b) read\_data() , write\_data()
  - c) fetch\_data() , display\_data()
  - d) none of these.

10. Which one of the following are self-repeating and do not require a computer program to attach themselves?

- a) viruses                      b) worms                      c) spyware                      d) Trojans

11. Which of the following is not a malicious program on computer system?

- a) worms                      b) trojans                      c) spyware                      d) cookies

12. Legal recognition for transactions are carried out by

- a) Electronic data interchange                      b) Electronic data exchange  
c) Electronic data transfer                      d) Electrical data interchange.

13. The constructors and destructor is they are \_\_\_\_\_ with any data type.

- a) Associated                      b) Not associated                      c) Not executed                      d) Join

14. Find the odd one out .

- a) ++                      b) +=                      c) \*                      d) <

15. A Declaring a class x { }; X occupies \_\_\_\_\_ bytes.

- a) 1                      b) Null                      c) Junk                      d) unknown values

### PART - II

**Note: Answer any six questions. Question No. 24 is compulsory.**

**6 X 2 = 12**

16. What is called members?

17. List the operators that cannot be overloaded.

18. Why derived class is called power packed class?

19. Write a short note on cracking.

20. List the search engine supported by Tamil Language.

21. Write about Tamilzpori.

22. Draw the diagram of Working of proxy server.

23. Write short note about Constructors and Destructors with an example.

24. Write the rules for function overloading .

### PART - III

**Note: Answer any six questions. Question No. 33 is compulsory.**

**6 X 3 = 18**

25. Rewrite the following program after removing the syntax errors if any and underline the errors

```
#include <iostream>
```

```
$include<stdio>
```

```
Class mystud
```

```
{
```

```
Int studid = 1001;
```

```
Char name[20];
```

```
Public
```

```
mystud() { }
```



```

Void register( )
{cin>> stdid;
Gets(name);}
Void display( )
{
Cout<<studid<<":"<<name<<endl;}
}
Int main( )
{ mystud MS;
register.MS( );
Ms.display( );
}

```

26. What is operator overloading ? Give some examples of operators which can be overloaded.
27. Explain the different visibility mode through pictorial representation.
28. What are the point should be follow the protect the information.(Ackers)
29. What are the guidelines to be followed by any computer user?
30. Write about i)TSCII                      ii)Tamil Virtual Academy.
31. List out the some of the e-services with an example website.
32. What are the points should be observed for defining the derived class.
33. How can you creating object and it methods.

#### PART - IV

**Note: Answer all the questions:**

**5 X 5= 25**

34. a) Write the out put of the following program

```

#include<iostream>
using namespace std;
class student
{
int rno, marks;
public:
student(int r, int m)
{ cout <<"constructor" << endl;
rno=r
marks=m;
}
void print det( )
{ marks =marks+30;
cout <<"Name: Bharathi"<<endl;
cout<<"Roll no: "<<rno<<"\n";
cout<<"Marks:"<<marks<<endl;
}
};

```

```
int main( )
{
student s(14,70);
s.printdet( );
cout<<"Back To Main";
return 0;
}
```

[OR]

b) What are the rules for operator overloading.

35. a) 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; der: func( );}
```

[OR]

b).What are the various crimes happening using computer?

36. a) Write short note about: i)Software piracy ii)Phishing iii)proxy server.

[OR]

b) Define the terms: i)Inheritance path ii)Visibility mode iii)Ethics

37. a) List out the some of the common ethical issues.

[OR]

b) Explain detail about the types of constructors with an example.

38. a) Define an object and how can you create an object and its methods with an example.

[OR]

b) Write the C++ program for the following output.

```
Constructor of base class...
Constructor of derived...
Constructor of derived1...
Destructor of derived...
Destructor of base class...
```

## MOUNT CARMEL MISSION MATRIC HR. SEC. SCHOOL – KALLAKURICHI

STD: XI

NOVEMBER MONTHLY TEST

LESSON: 14 – 18

TIME: 3 : 00 Hrs

COMPUTER SCIENCE

MARK: 70

## Part – I

## I. CHOOSE THE CORRECT ANSWER:

15 X 1 = 15

1. d) attributes
2. a) private
3. c) false, true
4. c) function overloading
5. b) The return type is also considered for overloading a function
6. c) Multilevel inheritance
7. a) Base class
8. b) Private members of base class with private accessibility
9. d) none of these
10. b) worms
11. b) worms
12. a) Electronic data interchange
13. b) not associated
14. d) <
15. d) unknown values

## Part – II

## II. ANSWER ANY SIX QUESTIONS Q. No: 24 IS COMPULSORY:

6 X 2 = 12

## 16. What is called members?

**Ans:** class comprises of members. Members are classified as Data Members and Member Functions. Data Members are the data variables that represent the features or properties of a class. Member functions are the functions that perform specific tasks in a class. Member functions are called as method, and data members are also called as attributes.

**Example:**

```
class example
{
public:
int x,y;
};
```

## 17. List the operators that cannot be overloaded.

**Ans:** Operators that cannot be overloaded are

- i. Scope operator ( :: )
- ii. Sizeof()
- iii. Member selector ( . )
- iv. Member pointer selector ( \* )
- v. Ternary operator ( ?: )

## 18. Why derived class is called power packed class?

**Ans:** The derived class is a power packed class, as it can add additional attributes and methods and thus enhance its functionality.

**19. Write a short note on cracking.**

**Ans:** - Cracking means trying to get into computer systems in order to steal, corrupt, or illegitimately view data.

- Software cracking is the most often used type of cracking which is nothing but removing the enclosed copy protection.

- Password cracking: This is mainly used to crack the passwords. Password cracking can be performed either by using an automated program or can be manually realized.

**20. List the search engine supported by Tamil Language.**

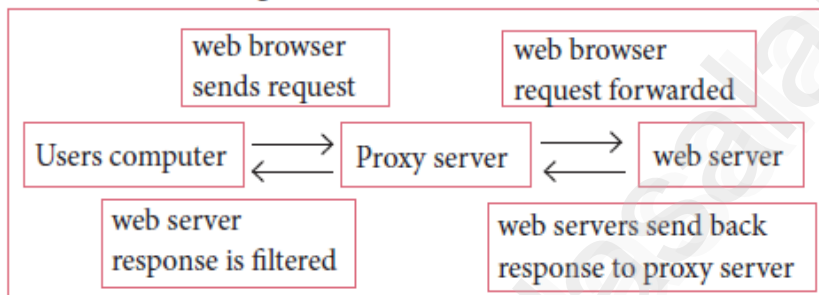
**Ans:** Google and Bing provide searching facilities in Tamil, which means you can search everything through Tamil. A Google search engine gives you an inbuilt Tamil Virtual Keyboard.

**21. Write about Tamilzpori.**

**Ans:** Thamizpori ( தாமிழ்பரி ) is a Tamil translation application having more than 30000 Tamil words equalent to English words.

**22. Draw the diagram of working of proxy server.**

**Ans:**

**23. Write short note about Constructors and Destructors with an example.**

**Ans: Constructor:** When an instance of a class comes into scope, a special function called the constructor gets executed. The constructor function name has the same name as the class name. The constructors return nothing. They are not associated with any data type. It can be defined either inside class definition or outside the class definition.

**Example:**

```

#include<iostream>
using namespace std;
class Sample
{
    int i,j;
    public :
    int k;
    Sample()
    {
        i=j=k=0; //constructor defined inside the class
    }
};
  
```

**Destructor:** A destructor is a special member function that is called when the lifetime of an object ends and destroys the object constructed by the constructor. When a class object goes out of scope, a special function called the destructor gets executed. The destructor has the same name as the class tag but prefixed with a ~ (tilde). Destructor function return nothing and it does not associated with any data type.

**Example:**

```
#include<iostream>
using namespace std;
class simple
{
private:
int a, b;
public:
simple()
{
a= 0 ;
b= 0;
cout<<"\n Constructor of class-simple ";
}
void getdata()
{
cout<<"\n Enter values for a and b ";
cin>>a>>b;
}
void putdata()
{
cout<<"\nThe two integers are .. ";
cout<<<<a<<"\t"<< b<<endl;
cout<<"\n The sum = "<<a+b;
}
~simple()
{ cout<<"\n Destructor is executed ";}
};
int main()
{
simple s;
s.getdata();
s.putdata();
return 0;
}
```

**Output:**  
 Constructor of class-simple  
 Enter values for a and b 6 7  
 The two integers are .. 6 7  
 The sum = 13  
 Destructor is executed

#### 24. Write the rules for function overloading.

**Ans:** i. The overloaded function must differ in the number of its arguments or data types.

ii. The return type of overloaded functions are not considered for overloading same data type.

iii. The default arguments of overloaded functions are not considered as part of the parameter list in function overloading.



## Part – III

## III. ANSWER ANY SIX QUESTIONS Q. No: 33 IS COMPULSORY:

6 X 3 = 18

25. Rewrite the following program after removing the syntax errors if any and underline the errors.

Ans:

Error Program	Errors removed program
<pre>#include&lt;iostream&gt; #include&lt;stdio&gt; Class mystud { Int studid = 1001; Char name[20]; Public mystud() { } Void register() { cin&gt;&gt;stdid; Gets(name); } Void display() { cin&gt;&gt;stdid; Gets(name); } Void display() { Cout&lt;&lt;studid&lt;&lt;": "&lt;&lt;name&lt;&lt;endl;} } Int main() { mystud MS; Register.MS(); MS.display();</pre>	<pre>#include&lt;iostream&gt; #include&lt;stdio.h&gt; using namespace std; class mystud { int studid; char name[20]; public:     mystud() { }     void register1()     {         cin&gt;&gt;studid;         gets(name);     }     void display()     {         cout&lt;&lt;studid&lt;&lt;": "&lt;&lt;name&lt;&lt;endl;}     }; int main() {     mystud MS;     MS.register1();     MS.display(); }</pre>

26. What is operator overloading? Give some examples of operators which can be overloaded.

**Ans:** The term operator overloading, refers to giving additional functionality to the normal C++ operators like +, ++, -, --, +=, -=, \*, <, >. It is also a type of polymorphism in which an operator is overloaded to give user defined meaning to it.

**For example:** '+' operator can be overloaded to perform addition on various data types, like for integers, strings(concatenation) etc.



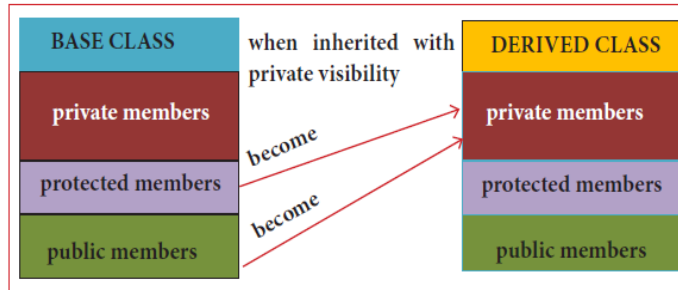
## 27. Explain the different visibility mode through pictorial representation.

**Ans:** The accessibility of base class by the derived class is controlled by visibility modes. The three visibility modes are,

- i. Private                      ii. Protected and                      iii. Public

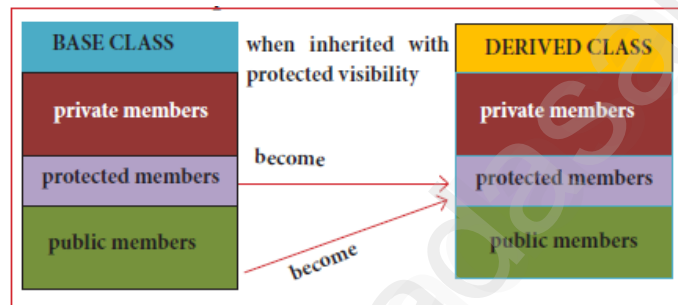
### i. Private:

When a base class is inherited with private visibility mode the public and protected members of the base class become 'private' members of the derived class.



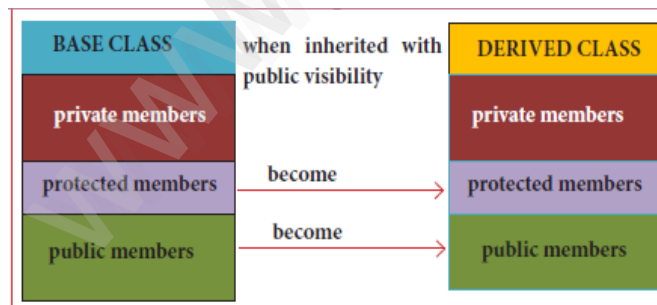
### ii. Protected:

When a base class is inherited with protected visibility mode the protected and public members of the base class become 'protected' members of the derived class.



### iii. Public:

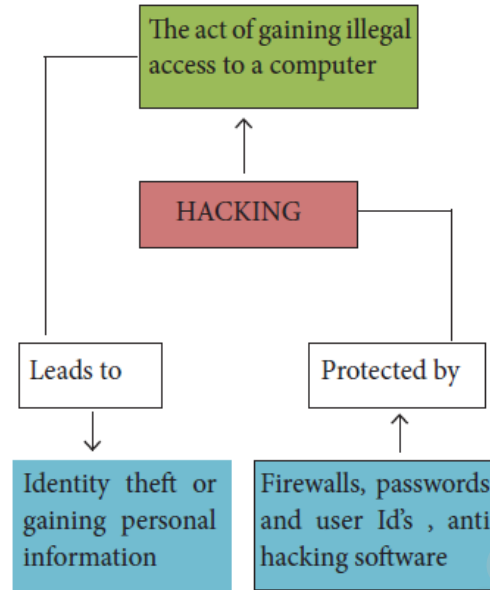
When a base class is inherited with public visibility mode, the protected members of the base class will be inherited as protected members of the derived class and the public members of the base class will be inherited as public members of the derived class.



## 28. What are the point should be follow to protect the information. (Hackers)

**Ans:** Hacking is intruding into a computer system to steal personal data without the owner's permission or knowledge (like to steal a password). It is also gaining unauthorized access to a computer system, and altering its contents. It may be done in pursuit of a criminal activity or it may be a hobby. Hacking may be harmless if the hacker is only enjoying the challenge of breaking systems' defenses, but such ethical hacking should be practiced only as controlled experiments.

### Diagrammatic representation of Hacking



## 29. What are the guidelines to be followed by any computer user?

**Ans:** Generally, the following guidelines should be observed by computer users:

- i. Honesty: Users should be truthful while using the internet.
- ii. Confidentiality: Users should not share any important information with unauthorized people.
- iii. Respect: Each user should respect the privacy of other users.
- iv. Obey the Law: Users should strictly obey the cyber law in computer usage.
- v. Responsibility: Each user should take ownership and responsibility for their actions.

## 30. Write about i) TSCII ii) Tamil Virtual Academy.

**Ans:** i) TSCII:

- Encoding system type.
- TSCII means 'Tamil Script Code for Information Interchange'.
- TSCII is the first coding system to handle our Tamil language in an analysis of an encoding scheme that is easily handled in electronics devices, including non-English computers.
- This encoding scheme was registered in IANA (Internet Assigned Numbers Authority) unit of ICANN.

31. List out the some of the e-services with an example website.

Ans:

E-Governance through Tamil	Web Address
Official Website of Govt. of Tamilnadu	<a href="http://www.tn.gov.in/ta">http://www.tn.gov.in/ta</a>
Department of Agricultural Engineering	<a href="http://www.aed.tn.gov.in/">http://www.aed.tn.gov.in/</a>
Department of Environment	<a href="http://www.environment.tn.nic.in/">http://www.environment.tn.nic.in/</a>
Directorate of Govt. Examinations	<a href="http://www.dge.tn.nic.in/">http://www.dge.tn.nic.in/</a>
Tamilnadu Health Department	<a href="http://www.tnhealth.org/">http://www.tnhealth.org/</a>
Tamilnadu Micro, Small and Medium Enterprises Department	<a href="http://www.msmeonline.tn.gov.in/">http://www.msmeonline.tn.gov.in/</a>
Rural Development and Panchayat Raj Department	<a href="http://www.tnrd.gov.in/">http://www.tnrd.gov.in/</a>
Backward, Most Backward and Minorities Welfare Department	<a href="http://www.bcmbcmw.tn.gov.in/">http://www.bcmbcmw.tn.gov.in/</a>
Tamilnadu Forest Department	<a href="https://www.forests.tn.gov.in/">https://www.forests.tn.gov.in/</a>
Hindu Religious and Charitable Endowments Department.	<a href="http://www.tnhrc.org/">http://www.tnhrc.org/</a>
Tamil Nadu Public Service Commission (TNPSC)	<a href="http://www.tnpsc.gov.in/tamilversion/index.html">http://www.tnpsc.gov.in/tamilversion/index.html</a>
Official Website of Govt. of Srilanka	<a href="https://www.gov.lk/index.php">https://www.gov.lk/index.php</a>

32. What are the points should be observed for defining the derived class.

Ans: i. The keyword class has to be used.

ii. The name of the derived class is to be given after the keyword class

iii. A single colon

iv. The type of derivation (the visibility mode, namely private, public or protected. If no visibility mode is specified, then by default the visibility mode is considered as private.

v. The name of the base class (parent class), if more than one base class, then it can be given separated by comma.

```
class derived_class_name : visibility_mode base_class_name
{ // members of derived class };
```

**Example:**

```
class example
{
public:
int m3;
};
class derived_example : public example
{
int n;
};
```

### 33. How can you creating object and it methods.

**Ans:** A class specification just defines the properties of a class. To make use of a class, the variables of that class type have to be declared. The class variables are called *object*. Objects are also called as *instance* of class.

**For example**

**student s;**

In the above statement **s** is an instance of the class **student**.

Objects can be created in two methods,

(1) Global object

(2) Local object

#### **(1) Global Object:**

If an object is declared outside all the function bodies or by placing their names immediately after the closing brace of the class declaration then it is called as *Global object*. These objects can be used by any function in the program.

**Example:**

```
// declaring outside all the function bodies
class global
{
public:
int a,b;
}
x, y;
global m,n;
int main()
{
.....
}
```

#### **(2) Local Object:**

If an object is declared with in a function then it is called *local object*. It cannot be accessed from outside the function.

**Example:**

```
class local
{
public:
int a, b;
};
int main()
{
local x,y;
}
```

x and y are local objects to main()



## Part – IV

## III. ANSWER ALL THE QUESTIONS:

5 X 5 = 25

34. a) Write the output of the following:

```
#include<iostream>
using namespace std;
class student
{
    int rno, marks;
public:
    student(int r,int m)
    { cout<<"Constructor "<<endl;
      rno=r;
      marks=m;
    }
    void printdet()
    {
        marks=marks+30;
        cout<<"Name: Bharathi"<<endl;
        cout<<"Roll no : "<<rno<<"\n";
        cout<<"Marks : "<<marks<<endl;
    }
};
int main()
{
    student s(14,70);
    s.printdet();
    cout<<"Back to Main";
    return 0;
}
```

**Ans: OUTPUT:**

Constructor  
Name: Bharathi  
Roll no: 14  
Marks: 100  
Back to main

**[ OR ]****b) What are the rules for operator overloading.****Ans:** - Precedence and Associativity of an operator cannot be changed.

- No new operators can be created, only existing operators can be overloaded.

- Cannot redefine the meaning of an operator's procedure. Only additional functions can be given to an operator.

- Overloaded operators cannot have default arguments.

- When binary operators are overloaded, the left hand object must be an object of the relevant class.

35. a) Debug the following

```
%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(); }
```

Ans:

```
#include<iostream>
#include<conio.h>
using namespace std;
class A
{
public:
int a1, a2, a3;
void getdata()
{
a1=15;
a2=13;
a3=13;
};
};
class B:public A
{
public:
void fun()
{
int b1, b2, b3;
A::getdata();
b1=a1;
b2=a2;
a3=a3;
cout<<b1<<'t'<<b2<<'t'<<b3;
};
};
int main()
{ B der;
der.fun(); }
```

[ OR ]

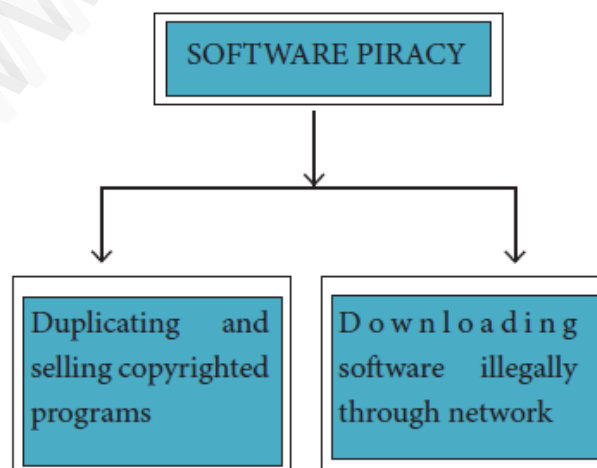
b) What are the various crimes happening using computer?

Ans:

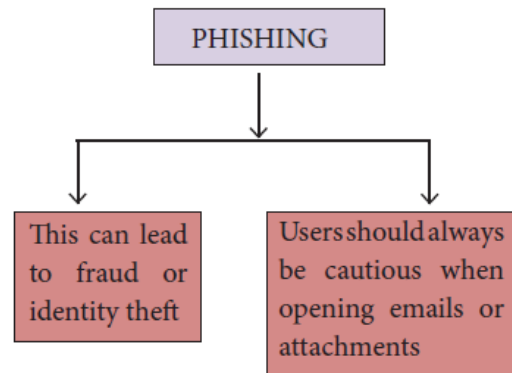
Crime	Function
Cyber Terrorism	Hacking, threats, and blackmailing towards a business or a person.
Cyber stalking	Harassing through online.
Malware	Malicious programs that can perform a variety of functions including stealing, encrypting or deleting sensitive data, altering or hijacking core computing functions and monitoring user's computer activity without their permission.
Denial of service attack	Overloading a system with fake requests so that it cannot serve normal legitimate requests.
Fraud	Manipulating data, for example changing the banking records to transfer money to an unauthorized account.
Harvesting	A person or program collects login and password information from a legitimate user to illegally gain access to others' account(s).
Identity theft	It is a crime where the criminals impersonate individuals, usually for financial gain.
Intellectual property theft	Stealing practical or conceptual information developed by another person or company.
Salami slicing	Stealing tiny amounts of money from each transaction.
Scam	Tricking people into believing something that is not true.
Spam	Distribute unwanted e-mail to a large number of internet users.
Spoofing	It is a malicious practice in which communication is sent from unknown source disguised as a source known to the receiver.

36. a) Write short note about: i) Software piracy ii) Phishing iii) proxy server

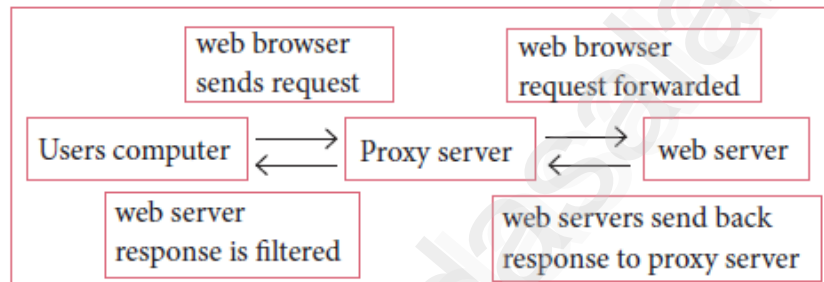
Ans: i) **Software Piracy** is about the copyright violation of software created originally by an individual or an institution. It includes stealing of codes / programs and other information illegally and creating duplicate copies by unauthorized means and utilizing this data either for one's own benefit or for commercial profit.



ii) **Phishing** is a type of computer crime used to attack, steal user data, including login name, password and credit card numbers. It occurs when an attacker targets a victim into opening an e-mail or an instant text message. The attacker uses phishing to distribute malicious links or attachments that can perform a variety of functions, including the extraction of sensitive login credentials from victims.



iii) **proxy server** acts as an intermediary between the end users and a web server. A client connects to the proxy server, requesting some service, such as a file, connection, web page, or other resources available from a different server. The proxy server examines the request, checks authenticity and grants the request based on that. Proxy servers typically keep the frequently visited site addresses in its cache which leads to improved response time.



[ OR ]

b) Define the terms: i) Inheritance path      ii) visibility mode      iii) ethics

Ans:

i) **Inheritance path:**

There are different types of inheritance viz., Single Inheritance, Multiple inheritance, Multilevel inheritance, hybrid inheritance and hierarchical inheritance.

### 1. Single Inheritance

When a derived class inherits only from one base class, it is known as single inheritance

### 2. Multiple Inheritance

When a derived class inherits from multiple base classes it is known as multiple inheritance

### 3. Hierarchical inheritance

When more than one derived classes are created from a single base class, it is known as Hierarchical inheritance.

### 4. Multilevel Inheritance

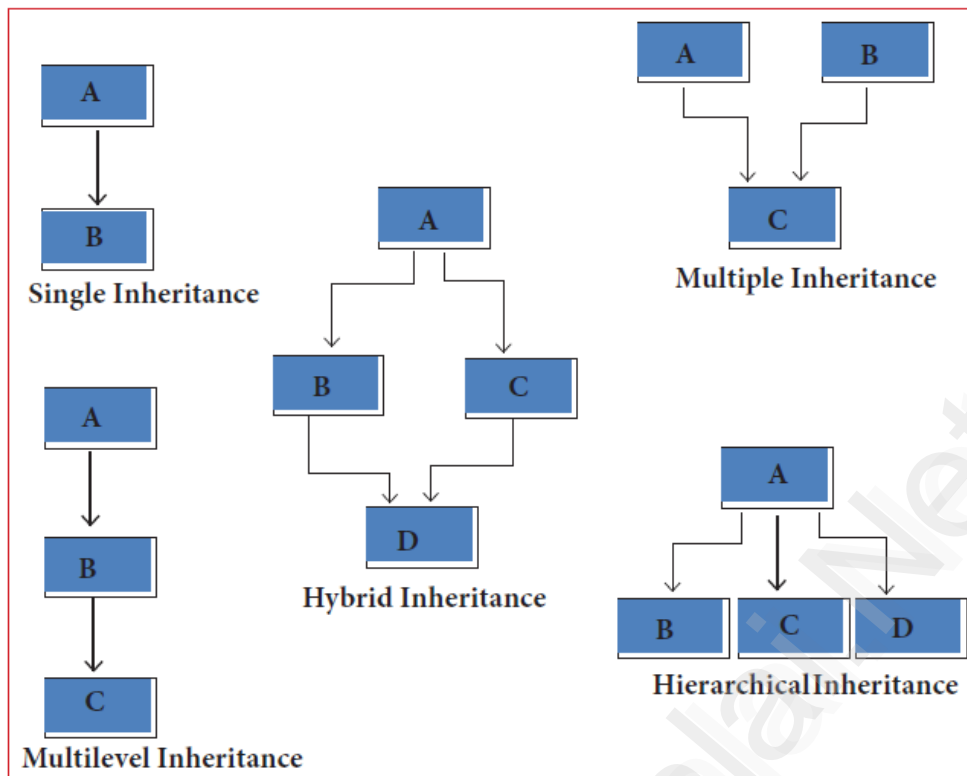
The transitive nature of inheritance is reflected by this form of inheritance. When a class is derived from a class which is a derived class – then it is referred to as multilevel inheritance.

### 5. Hybrid inheritance

When there is a combination of more than one type of inheritance, it is known as hybrid inheritance. Hence, it may be a combination of Multilevel and Multiple inheritance or Hierarchical and Multilevel inheritance or Hierarchical, Multilevel and Multiple inheritance.



The following diagram represents the different types of inheritance

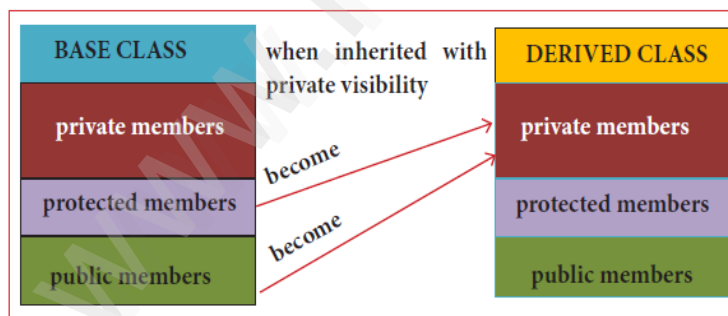


**ii) Visibility mode:** An important feature of Inheritance is to know which member of the base class will be acquired by the derived class. This is done by using visibility modes.

The accessibility of base class by the derived class is controlled by visibility modes. The three visibility modes are private, protected and public. The default visibility mode is private. Though visibility modes and access specifiers look similar, the main difference between them is Access specifiers control the accessibility of the members with in the class where as visibility modes control the access of inherited members with in the class.

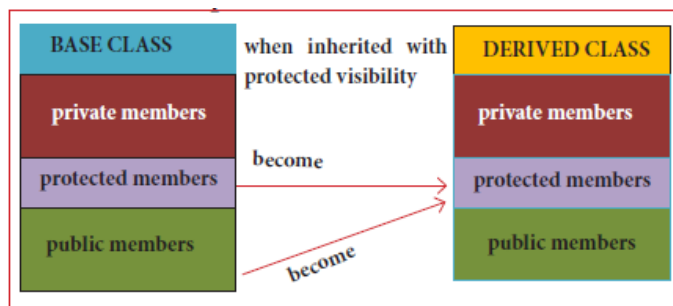
#### i. Private visibility:

When a base class is inherited with private visibility mode the public and protected members of the base class become 'private' members of the derived class.



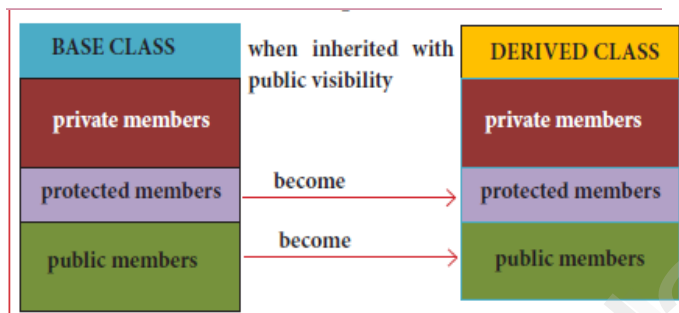
#### ii. Protected:

When a base class is inherited with protected visibility mode the protected and public members of the base class become 'protected' members of the derived class.



### iii. Public:

When a base class is inherited with public visibility mode, the protected members of the base class will be inherited as protected members of the derived class and the public members of the base class will be inherited as public members of the derived class.



### iii) Ethics:

Ethics means “What is wrong and What is Right”. It is a set of moral principles that rule the behavior of individuals who use computers. An individual gains knowledge to follow the right behavior, using morals that are also known as ethics. Morals refer to the generally accepted standards of right and wrong in the society. Similarly, in cyber-world, there are certain standards such as

- Do not use pirated software
- Do not use unauthorized user accounts
- Do not steal others' passwords
- Do not hack

The core issues in computer ethics are based on the scenarios arising from the use of internet such as privacy, publication of copyrighted content, unauthorized distribution of digital content and user interaction with web sites, software and related services.

### 37. a) List out the some of the common ethical issues.

**Ans:** i. Cyber crime

ii. Software Piracy

iii. Unauthorized Access

iv. Hacking

v. Use of computers to commit fraud

vi. Sabotage in the form of viruses

vii. Making false claims using computers

[ OR ]

### b) Explain detail about the types of constructors with an example.

**Ans:**

There are different types of constructors.

#### Default Constructors

A constructor that accepts no parameter is called default constructor. For example in the class Data, Data ::Data() is the default constructor . Using this constructor Objects are created similar to the way the variables of other data types are created. If a class does not contain an explicit constructor (user defined constructor) the compiler automatically generate a default constructor.

## Parameterized Constructors

A constructor which can take arguments is called parameterized constructor. This type of constructor helps to create objects with different initial values. This is achieved by passing parameters to the function.

### Example:

```
Data :: Data(int,int);
```

## Copy Constructors

A constructor having a reference to an already existing object of its own class is called copy constructor. It is usually of the form `Data (Data&)`, where `Data` is the class name.

A copy constructor can be called in many ways:

- 1) When an object is passed as a parameter to any of the member functions

**Example:** `void Data::putdata(Data x);`

- 2) When a member function returns an object

**Example:** `Data getdata() { }`

- 3) When an object is passed by reference to an instance of its own class

**For example:** `Data d1, d2 (d1); // d2(d1) calls copy constructor`

### Example for types of constructor:

```
#include<iostream>
using namespace std;
class Data
{
    int i, j;
public:
    int k;
    Data()
    {
        cout<<"Non Parametrerized constructor";
        i=0;
        j=0;
    }
    Data(int a,int b)
    {
        cout<<"Parametrerized constructor";
        i=a;
        j=b;
    }
    Data(Data &a)
    {
        cout<<"Copy constructor";
        i=a.i;
        j=b.j;
    }

    void display()          //member function
    {
        cout<< i<<j;
    }
};

int main()
{
    Data d1,d2(10,20),d3(d2);
    d1.display();
    d2.display();
    d3.display();
    return 0;
}
```

**38. a) Define an object and how can you create an object and its methods with an example.**

**Ans: :** A class specification just defines the properties of a class. To make use of a class, the variables of that class type have to be declared. The class variables are called **object**. Objects are also called as **instance** of class.

**For example****student s;**

In the above statement **s** is an instance of the class **student**.

Objects can be created in two methods,

(1) Global object

(2) Local object

**(1) Global Object:**

If an object is declared outside all the function bodies or by placing their names immediately after the closing brace of the class declaration then it is called as *Global object*. These objects can be used by any function in the program.

**Example:**

```
// declaring outside all the function bodies
class global
{
    public:
    int a,b;
}
x, y;
global m,n;
int main()
{
    .....
}
```

**(2) Local Object:**

If an object is declared with in a function then it is called *local object*. It cannot be accessed from outside the function.

**Example:**

```
class local
{
    public:
    int a, b;
};
int main()
{
    local x,y;
}
```

x and y are local objects to main()



[ OR ]

b) Write the C++ program for the following output.

Constructor of base class...

Constructor of derived...

Constructor of derived1...

Destructor of derived...

Destructor of base class...

Ans:

```
#include<iostream>
using namespace std;
class base
{
public:
base()
{ cout<<"\nConstructor of base class..."; }
~base()
{ cout<<"\nDestructor of base class.... "; }
};
class derived:public base
{
public :
derived()
{ cout << "\nConstructor of derived ..."; }
~derived()
{ cout << "\nDestructor of derived ..."; };
};
class derived1 :public derived
{
public :
derived1()
{ cout << "\nConstructor of derived1 ..."; }
~derived1()
{ cout << "\nDestructor of derived1 ..."; }
};
int main()
{
derived1 x;
return 0;
}
```

**Output:**

Constructor of base class...

Constructor of derived ...

Constructor of derived1 ...

Destructor of derived1 ...

Destructor of derived ...

Destructor of base class....

– Prepared By

*S.Vinoth Kumar,**B.Sc.(CS)., MCA., B.Ed.,**Mobile Number: (+91)9786845143,**PG.Asst.in Computer Science Dept.,***Mount Carmel Mission Matriculation  
Higher Secondary School,****Kallakurichi – 606 202.**