

Question # 1 of 10 (Start time: 01:18:50 PM, 02 January 2025)

In Private Inheritance the public members of base class become _____ in derived class.

Select the correct option

☐	Protected
☐	None of the given options.
☒	Private
☐	Public

Question # 10 of 10 (Start time: 11:20:59 AM, 06 January 2025)

Which of the following is known as Dereference operator in C++?

Select the correct option

☒	*
☐	=
☐	+
☐	&

Question # 6 of 10 (Start time: 11:15:30 AM, 06 January 2025)

In C++ generic programming is done using_____

Select the correct option

☐	None of given
☐	Packages
☒	Templates
☐	Procedures

Question # 7 of 10 (Start time: 11:16:30 AM, 06 January 2025)

A template argument is preceded by the keyword _____.

type name

Select the correct option

☐	type*	
☐	class	
☐	vector	
☒	template	

Question # 9 of 10 (Start time: 11:19:11 AM, 06 January 2025)

Consider the following class 'phone' which is inheriting from 'Transmit' and 'Receiver'. Which of the following line of code will produce error.

Class phone: public Transmit, public Receiver

{};

1. int main()

2. {

3. phone obj;

4. Transmit* obj1 = &obj;

5. Receiver obj2 = &obj;

6. }

Select the correct option

☐

4th line will produce error

☒

5th line will produce error

☐

3rd and 4th line will produce error.

☐

3rd line will produce error

Question # 5 of 10 (Start time: 11:14:50 AM, 06 January 2025)

Each _____ of a template class by default becomes function template.

Select the correct option

☐	Type parameter
☒	Member function
☐	Data member
☐	Object

Question # 4 of 10 (Start time: 11:14:12 AM, 06 January 2025)

Which will be the Primary task or tasks of generic programming?

Select the correct option

☐	Categorize the abstractions in a domain into concepts
☐	Build concrete models of the concepts
☐	Implement generic algorithms based on the concepts
☒	All of given

Question # 10 of 10 (Start time: 01:29:58 PM, 02 January 2025)

Suppose Person is a user defined class. In statement "Person * pPtr", static type of pPtr is _____

Select the correct option



None of the given



pPtr



Pointer



Person

Question # 1 of 10 (Start time: 11:10:45 AM, 06 January 2025)

In order to define a class template the first line of definition must be:

Select the correct option



template <typename T>



Class <Template T>



Template Class <ClassName>



typename <template T>

Question # 2 of 10 (Start time: 11:12:01 AM, 06 January 2025)

Which of the following represents partial specialization?

Select the correct option



template< typename T, class W >



template< class T, type T>



template< int , char >



template< class T, class U, int >

Question # 3 of 10 (Start time: 11:13:17 AM, 06 January 2025)

----- class is a single class that provides functionality to operate on different types of data.

Select the correct option

☐	Friend
☐	Ordinary
☐	None of the given options
☒	Template

Question # 9 of 10 (Start time: 01:29:07 PM, 02 January 2025)

In which of the following way(s), we can inherit a class from another class in C++?

Select the correct option

☐	Public
☐	Private
☐	Protected
☒	All of the given options

Question # 8 of 10 (Start time: 01:27:34 PM, 02 January 2025)

A parent class can call constructor of its child class through,

Select the correct option

☐	Both from its constructor initialization list or body
☐	Its constructor body
☐	Its constructor initialization list
☐	Can not call the constructor of its child class

Question # 7 of 10 (Start time: 01:26:02 PM, 02 January 2025)

Suppose you have following C++ statements:

```
int oldValue=10;
```

```
int newValue = ++ oldValue;
```

What will be the value of `oldValue` and `newValue` after executing above statements?

Select the correct option

☐

`oldValue= 10 , newValue=11`

☐

`oldValue= 10 , newValue=10`

☐

`oldValue= 11 , newValue=10`

☒

`oldValue= 11 , newValue=11`

Question # 4 of 10 (Start time: 01:22:23 PM, 02 January 2025)

Consider the code below:

```
class class1
{
private: int i;
};

class class2 : private class1
{
};
```

Then int member i of class1 is _____ in class2.

Select the correct option

☐	none of the given options
☒	private/hidden
☐	protected
☐	public

Question # 5 of 10 (Start time: 01:23:55 PM, 02 January 2025)

In case of private inheritance, protected members of base class will be _____ in derived class?

Select the correct option

☐	protected
☒	private
☐	hidden
☐	public

Question # 6 of 10 (Start time: 01:25:05 PM, 02 January 2025)

In c++, compiler can generate which of the following operators' code,

Select the correct option

☐	&&&
☐	&
☒	=
☐	==

Question # 3 of 10 (Start time: 01:21:30 PM, 02 January 2025)

Outside world can access only _____ members of a class using its object.

Select the correct option

☐	Protected
☒	Public
☐	Private
☐	No member is accessible.

Question # 2 of 10 (Start time: 01:19:57 PM, 02 January 2025)

Consider the code below,

```
class class1{  
protected:  
void func1();  
};  
class class2 : public class1 {  
};
```

Select the correct option

☒	protected
☐	none of the given options
☐	public
☐	private

Question # 1 of 10 (Start time: 01:18:50 PM, 02 January 2025)

In Private Inheritance the public members of base class become _____ in derived class.

Select the correct option

☐	Protected
☐	None of the given options.
☒	Private
☐	Public

Example

```
int main(){
    Phone obj;
    obj.Transmit(); // method of Transmitter class
    obj.Receive(); // method of Receiver class
    return 0;
}
```

Multiple Inheritance

When using public multiple inheritance, the object of derived classes can replace the objects of all the base classes

Example

```
int main(){
    Phone obj;
    Transmitter * tPtr = &obj;
    Receiver * rPtr = &obj;
    return 0;
}
```

23.4.Static Type

The type that is used to declare a reference or pointer is called its static type

1. In `Person * pPtr = 0;`

The static type of **pPtr** is `Person *` (Person pointer).

2. `Student s;`

The static type of **s** is `Student`.

Member Access

As the static type of **pPtr** is `Person` so following call is erroneous

pPtr->GetRollNo();

- Increment operator (++) as we are incrementing value in this container
- Dereference operator (*) as we are getting value from container for comparison by dereferencing

Although this template function will now work for all containers in same way but it has one limitation that we will need to pass container pointers in this function this is against the concept of generic programming so we simply remove pointer notation from our code,

```
template< typename P, typename T >
P find( P start, P beyond, const T& x ) {
    while ( start != beyond && *start != x )
        start++;
    return start;
}
```

class Child: **public** Parent {...};

Member access in	
Base Class	Derived Class
Public	Public
Protected	Protected
Private	Hidden

b. **Protected Inheritance**

class Child: **protected** Parent {...};

Member access in	
Base Class	Derived Class
Public	Protected
Protected	Protected
Private	Hidden

c. **Private Inheritance**

class Child: **private** Parent {...};

Member access in	
Base Class	Derived Class
Public	Private
Protected	Private
Private	Hidden

17.1. Overloading Assignment operator

As we know compiler can generate the following three functions for a class if required on its own,

- Default Constructor (in case we have not written any other constructor for a class)
- Copy Constructor
- Assignment Operator

Question No. 01

Which of the following are the Techniques for Error Handling?

- A. Abnormal termination
- B. Graceful termination
- C. Return the illegal value
- D. All of the given**

Techniques for Error Handling

a. Abnormal termination

We do nothing and our program is terminated abnormally by operating system.

b. Graceful termination

If error is not Abnormal than Graceful occur it causes the wastage of resources, program performs clean up tasks.

c. Return the illegal value

The clean-up tasks are of local nature only; there remains the possibility of information loss.

d. Return error code from a function

Programmer has avoided the system crash but the program is now in an inconsistent state.

e. Exception handling

It enables separation of main logic and error handling code.

Question No. 02

Default constructor is such constructor which either has no _____ or if it has some parameters these have _____ values

- A. Parameter, temporary
- B. Null, Parameter
- C. Parameter, default
- D. None of the given

Definition of Some Terms:

Default constructor: Default constructor is such constructor which either has no parameter or if it has some parameters these have default values. The benefit of default constructor is that it can be used to create class object without passing any argument.

Implicit Default constructor: Compiler generates implicit default constructor for any class in case we have not given any constructor for the class.

Explicit Default constructor: If user has given constructor for any class without any arguments or with all arguments with default parameters then it is also default constructor according to definition but it is explicit default constructor.

Non-Default constructor: Now if a base class has only non-default constructor (implicit or explicit), then when we will create object of any class derived from this base class compiler will not be able to call base class constructor as base class has no default constructor.

Question No. 03

Which of the following components of STL – Standard Template Library?

- A. Containers
- B. Iterators
- C. Algorithms
- D. All of the given

STL - Standard Template Library Containers

STL is designed to operate efficiently across many different applications.

STL consists of three key components

1. Containers
2. Iterators
3. Algorithms

STL Containers

1. Sequence Containers

- vector
- deque
- list

2. Associative Containers

- set
- multiset
- map
- multimap

3. Container Adapters

- stack
- queue
- priority_queue

First Class Container: Sequence and Associative

Second Class Container: Adapter

Question No. 04

In C++ generic programming is done through _____.

- A. Classes
- B. Templates**
- C. Arrays
- D. Functions

Templates

In C++ generic programming is done using templates.

There are two main kinds of Templates:

Kinds of Templates:

1. **Function Templates** (in case we want to write general function like printArray)
2. **Class Templates** (in case we want to write general class like Array class)

Question No. 05

Like template functions, a class template may not handle all the types successfully.

- A. True
- B. False

Template Function

Like template functions, a class template may not handle all the types successfully.

Question No. 06

In Private _____ only member functions and friend classes or functions of a derived class can convert pointer or reference of derived object to that of parent object.

- A. Private Inheritance
- B. Public Inheritance
- C. Protected Inheritance
- D. All of the above

Public and Private Inheritance

In **Private Inheritance** only member functions and friend classes or functions of a derived class can convert pointer or reference of derived object to that of parent object

As was in the case of **Public Inheritance** child class object has an anonymous object of parent class.

Question No. 09

_____ is a sequence of steps to solve a problem.

- A. Containers
- B. Iterators
- C. Algorithms
- D. None of the above

Algorithms

Algorithms is a sequence of steps to solve a problem.

- ☐ STL includes 70 standard algorithms
- ☐ These algorithms may use Iterators to manipulate containers
- ☐ STL algorithms also work for ordinary pointers and data structures
- ☐ An algorithm works with a particular container only if that container supports a particular Iterator category
- ☐ A multi-pass algorithm for example, requires bidirectional Iterator(s) at least

Question No. 10

It is sometimes useful to specify a class from which no objects will ever be created.

- A. True
- B. False

Object Creation

It is sometimes useful to specify a class from which no objects will ever be created.

Question No. 11

Which of the following Techniques for Error Handling in which program is terminated abnormally by operating system?

- A. **Abnormal termination**
- B. Graceful termination
- C. Return the illegal value
- D. All of the given

Techniques for Error Handling

a. Abnormal termination

We do nothing and our program is terminated abnormally by operating system.

b. Graceful termination

If error is not Abnormal than Graceful occur it causes the wastage of resources, program performs clean up tasks.

c. Return the illegal value

The clean-up tasks are of local nature only; there remains the possibility of information loss.

d. Return error code from a function

Programmer has avoided the system crash but the program is now in an inconsistent state.

e. Exception handling

It enables separation of main logic and error handling code.

Question No. 12

The compiler generates _____ for any class in case we have not given any constructor for the class.

- A. Default constructor
- B. **Implicit Default constructor**
- C. Explicit Default constructor
- D. None of the given

Definition of Some Terms:

Default constructor: Default constructor is such constructor which either has no parameter or if it has some parameters these have default values. The benefit of default constructor is that it can be used to create class object without passing any argument.

Implicit Default constructor: Compiler generates implicit default constructor for any class in case we have not given any constructor for the class.

Explicit Default constructor: If user has given constructor for any class without any arguments or with all arguments with default parameters then it is also default constructor according to definition but it is explicit default constructor.

Non-Default constructor: Now if a base class has only non-default constructor (implicit or explicit), then when we will create object of any class derived from this base class compiler will not be able to call base class constructor as base class has no default constructor.

Question No. 13

In which type of the programming containing generic abstractions?

- A. Object Oriented Programming
- B. Programming
- C. **Generic Programming**
- D. None of the given

Generic Programming

Generic programming refers to programs containing generic abstractions (general code that is same in logic for all data types like printArray function), then we instantiate that generic program abstraction (function, class) for a particular data type, such abstractions can work with many different types of data.

Advantages:

Major benefits of this approach are:

- a. **Reusability:** Code can work for all data types.
- b. **Writability:** Code takes lesser time to write.
- c. **Maintainability:** Code is easy to maintain as changes are needed to be made in a single function or class instead of many functions or classes.

Question No. 15

Two important STL associative containers are _____ and _____.

- A. **set, map**
- B. stack, queue
- C. vector, list
- D. None of the above

STL - Standard Template Library Containers

STL is designed to operate efficiently across many different applications.

STL consists of three key components

- 1. Containers 2. Iterators 3. Algorithms

STL Containers

1. Sequence Containers

- vector - deque - list

2. Associative Containers

- set - multiset - map - multimap

3. Container Adapters

- stack - queue - priority_queue

First Class Container: Sequence and Associative

Second Class Container: Adapter

Question No. 16

A pointer to a base class can point to objects of a derived class.

- A. True
- B. False

Pointer

A pointer to a base class can point to objects of a derived class.

Question No. 17

When an element is inserted into a container, a copy of that element is made using:

- A. Copy Constructor
- B. Assignment Operator
- C. Destructor
- D. Both A and B

Copy Constructor and Assignment Operator

When an element is inserted into a container, a copy of that element is made using,

- o Copy Constructor
- o Assignment Operator

Associative containers and many algorithms compare elements so the elements that are added to associative containers should have this functionality,

- o Operator ==
- o Operator <

Question No. 19

A template argument is preceded by the keyword _____.

- A. Vector
- B. Class**
- C. Template
- D. Object

Template Argument

A template argument is preceded by the keyword `class`.

Question No. 20

A function template can not be overloaded by another function template.

- A. True
- B. False

Function Template

A function template can not be overloaded by another function template.

Question No. 21

Which of the following Techniques for Error Handling in which resources are waste, program performs clean up task?

- A. Abnormal termination
- B. Graceful termination**
- C. Return the illegal value
- D. All of the given

Techniques for Error Handling

a. Abnormal termination

We do nothing and our program is terminated abnormally by operating system.

b. Graceful termination

If error is not Abnormal than Graceful occur it causes the wastage of resources, program performs clean up tasks.

c. Return the illegal value

The clean-up tasks are of local nature only; there remains the possibility of information loss.

d. Return error code from a function

Programmer has avoided the system crash but the program is now in an inconsistent state.

e. Exception handling

It enables separation of main logic and error handling code.

Question No. 23

In C++ generic programming the kinds of templates is _____.

- A. Function Templates
- B. Class Templates
- C. Both A and B
- D. All of the above

Templates

In C++ generic programming is done using templates.

There are two main kinds of Templates:

Kinds of Templates:

1. **Function Templates** (in case we want to write general function like printArray)
2. **Class Templates** (in case we want to write general class like Array class)

Question No. 24

Two important STL adapters containers are _____ and _____.

- A. set, map
- B. stack, queue**
- C. vector, list
- D. None of the above

STL - Standard Template Library Containers

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STL Containers

1. Sequence Containers

- vector - deque - list

2. Associative Containers

- set - multiset - map - multimap

3. Container Adapters

- stack - queue - priority_queue

First Class Container: Sequence and Associative

Second Class Container: Adapter

Question No. 26

Describe the way to declare a template class as a friend of any class.

- A. True
- B. False

Template Class

Describe the way to declare a template class as a friend of any class.

Question No. 27

Each try block can have _____ no. of catch blocks.

- A. 1
- B. 2
- C. 3
- D. As many as necessary

Try Block

Each try block can have as many as need no. of catch blocks.

Question No. 28

Vectors contain contiguous elements stored as a[an] _____.

- A. Variable
- B. Array**
- C. Function
- D. Datatype

Array

Vectors contain contiguous elements stored as a[an] Array.

Question No. 29

By default the vector data items are initialized to _____.

- A. 0
- B. 1
- C. 0.0
- D. NULL

By Default Vector

By default the vector data items are initialized to ZERO

Question No. 30

One purpose of an iterator in the STL is to connect algorithms and containers.

- A. True
- B. False

STL

One purpose of an iterator in the STL is to connect algorithms and containers.



Question No. 31

Which of the following Techniques for Error Handling in which information is lost?

- A. Abnormal termination
- B. Graceful termination
- C. Return the illegal value**
- D. All of the given

Techniques for Error Handling

a. Abnormal termination

We do nothing and our program is terminated abnormally by operating system.

b. Graceful termination

If error is not Abnormal than Graceful occur it causes the wastage of resources, program performs clean up tasks.

c. Return the illegal value

The clean-up tasks are of local nature only; there remains the possibility of information loss.

d. Return error code from a function

Programmer has avoided the system crash but the program is now in an inconsistent state.

e. Exception handling

It enables separation of main logic and error handling code.

Question No. 32

Which of the following is/are advantage[s] of generic programming?

- A. Reusability
- B. Maintainability
- C. Writability
- D. All of the above**

Generic Programming

Generic programming refers to programs containing generic abstractions (general code that is same in logic for all data types like printArray function), then we instantiate that generic program abstraction (function, class) for a particular data type, such abstractions can work with many different types of data.

Advantages:

Major benefits of this approach are:

- a. **Reusability:** Code can work for all data types.
- b. **Writability:** Code takes lesser time to write.
- c. **Maintainability:** Code is easy to maintain as changes are needed to be made in a single function or class instead of many functions



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Question No. 33

Two important STL sequence containers are _____ and _____.

- A. set, map
- B. stack, queue
- C. vector, list
- D. None of the above

STL - Standard Template Library Containers

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STL consists of three key components

- 1. Containers 2. Iterators 3. Algorithms

STL Containers

1. Sequence Containers

- vector - deque - list

2. Associative Containers

- set - multiset - map - multimap

3. Container Adapters

- stack - queue - priority_queue

First Class Container: Sequence and Associative

Second Class Container: Adapter

Question No. 34

Associative containers and many algorithms compare elements so the elements that are added to associative containers should have this functionality:

- A. Operator ==
- B. Operator <
- C. Operator =
- D. Both A and B

Copy Constructor and Assignment Operator

When an element is inserted into a container, a copy of that element is made using,

- o Copy Constructor
- o Assignment Operator

Associative containers and many algorithms compare elements so the elements that are added to associative containers should have this functionality,

- o Operator ==
- o Operator <

Question No. 36

Algorithms is used for:

- A. Containers
- B. Iterators
- C. Both A and B
- D. None of the above

Algorithms

Algorithms is a sequence of steps to solve a problem.

- ☐ STL includes 70 standard algorithms
- ☐ These algorithms may use Iterators to manipulate containers
- ☐ STL algorithms also work for ordinary pointers and data structures
- ☐ An algorithm works with a particular container only if that container supports a particular Iterator category
- ☐ A multi-pass algorithm for example, requires bidirectional Iterator(s) at least

Question No. 39

The type that is used to declare a reference or pointer is called its _____,

- A. Default Type
- B. Static Type**
- C. Abstract Type
- D. Reference Type

Static Type

The type that is used to declare a reference or pointer is called its Static Type.

Question No. 38

In _____, a base class can be replaced by its derived class,

- A. Sub-typing
- B. Super-typing
- C. Multiple-typing
- D. Restricted-typing

Sub-Typing

In Sub-Typing a base class can be replaced by its derived class,

Question No. 37

Multiple inheritance can be of type:

- A. Public
- B. Private
- C. Protected
- D. All of the above**

Multiple Inheritance

Multiple inheritance can be of type

- ▶ Public
- ▶ Private
- ▶ Protected

Question No. 39

A pointer does not point to current object of any class,

- A. True
- B. False**

Pointer

A pointer does not point to current object of any class,

Question No. 41

_____ Techniques for Error Handling that enables separation of main logic and error handling code?

- A. Abnormal termination
- B. Graceful termination
- C. Return the illegal value
- D. Exception handling**

Techniques for Error Handling

a. Abnormal termination

We do nothing and our program is terminated abnormally by operating system.

b. Graceful termination

If error is not Abnormal than Graceful occur it causes the wastage of resources, program performs clean up tasks.

c. Return the illegal value

The clean-up tasks are of local nature only; there remains the possibility of information loss.

d. Return error code from a function

Programmer has avoided the system crash but the program is now in an inconsistent state.

e. Exception handling

It enables separation of main logic and error handling code.

Question No. 42

As was in the case of _____ child class object has an anonymous object of parent class.

- A. Private Inheritance
- B. Public Inheritance**
- C. Protected Inheritance
- D. All of the above

Public and Private Inheritance

In **Private Inheritance** only member functions and friend classes or functions of a derived class can convert pointer or reference of derived object to that of parent object

As was in the case of **Public Inheritance** child class object has an anonymous object of parent class.

Question No. 47

Which of the following operator(s) take(s) one or no argument if overloaded?

- A. ++
- B. -
- C. +
- D. All of the given

Sub-Typing

The Plus Plus ('+ +')operator(s) take(s) one or no argument if overloaded?

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Question No. 46

STL algorithms also work for ordinary _____
and _____.

- A. Pointers
- B. Data Structures
- C. Both A and B
- D. None of the above

Algorithms

Algorithms is a sequence of steps to solve a problem.

- ☐ STL includes 70 standard algorithms
- ☐ These algorithms may use Iterators to manipulate containers
- ☐ STL algorithms also work for ordinary pointers and data structures
- ☐ An algorithm works with a particular container only if that container supports a particular Iterator category
- ☐ A multi-pass algorithm for example, requires bidirectional Iterator(s) at least

Question No. 48

The life of sub object is dependant on the life of master class in _____.

- A. Separation
- B. Composition
- C. Aggregation
- D. None of the given

Composition

The life of sub object is dependant on the life of master class in Composition.

Question No. 49

Which operator can not be overloaded?

- A. The relation operator ($\geq$)
- B. Assignment operator ($=$)
- C. Script operator ($[]$)
- D. Conditional operator ($?:$)

Overloading

Which operator can be overloaded?

$\geq$

$=$

$[]$

Which operator can not be overloaded?

$?:$

Question No. 49

Which operator can not be overloaded?

- A. `template < class T, class U>`
- B. `template <typename U>`
- C. **`Class<template T>`**
- D. `template<class T>`

Syntax of Template Class

When we write a class template the first line must be:

`Class<template T>`

Question No. 18

How many algorithms include in Standard Template Library.

A. 50

B. 60

C. 70

D. 80

Algorithms

Algorithms is a sequence of steps to solve a problem.

- ☐ STL includes 70 standard algorithms
- ☐ These algorithms may use Iterators to manipulate containers
- ☐ STL algorithms also work for ordinary pointers and data structures
- ☐ An algorithm works with a particular container only if that container supports a particular Iterator category
- ☐ A multi-pass algorithm for example, requires bidirectional Iterator(s) at least

Question No. 22

The default constructor is also known as _____.

- A. Default constructor
- B. Implicit Default constructor
- C. Non-Default constructor
- D. None of the given

Definition of Some Terms:

Default constructor: Default constructor is such constructor which either has no parameter or if it has some parameters these have default values. The benefit of default constructor is that it can be used to create class object without passing any argument.

Implicit Default constructor: Compiler generates implicit default constructor for any class in case we have not given any constructor for the class.

Explicit Default constructor: If user has given constructor for any class without any arguments or with all arguments with default parameters then it is also default constructor according to definition but it is explicit default constructor.

Non-Default constructor: Now if a base class has only non-default constructor (implicit or explicit), then when we will create object of any class derived from this base class compiler will not be able to call base class constructor as base class has no default constructor.

Question No. 08

Which of the following used to traverse Containers?

- A. Containers
- B. Iterators**
- C. Algorithms
- D. All of the given

STL - Standard Template Library Iterators

Iterators used to traverse Containers. efficiently without accessing internal details, now we see Iterators provided to us in standard template library, STL Iterators provide pointer operations such as * and ++

STL Iterator

1. Input Iterators
2. Output Iterators
3. Forward Iterators
4. Bidirectional Iterators
5. Random-access Iterators



Question No. 25

Which of the following operator is used for iterators in Standard Template Library Iterators?

- A. *
- B. ++
- C. + *
- D. Both A and B

STL - Standard Template Library Iterators

Iterators used to traverse Containers. efficiently without accessing internal details, now we see Iterators provided to us in standard template library, STL Iterators provide pointer operations such as * and ++

STL Iterator

1. Input Iterators
2. Output Iterators
3. Forward Iterators
4. Bidirectional Iterators
5. Random-access Iterators



Question No. 14

How many categories of Iterator in Standard Template Library

- A. 2
- B. 3
- C. 4
- D. 5

STL - Standard Template Library Iterators

Iterators used to traverse Containers. efficiently without accessing internal details, now we see Iterators provided to us in standard template library, STL Iterators provide pointer operations such as * and ++

STL Iterator

1. Input Iterators
2. Output Iterators
3. Forward Iterators
4. Bidirectional Iterators
5. Random-access Iterators



Question No. 07

Private data members will NOT be accessible in any derived class or in main function.

- A. True
- B. False

Comparison of Public, Protected and Private Inheritance:

Public Inheritance		Protected Inheritance		Private Inheritance	
Base Class		Base Class		Base Class	
Accessibility		Accessibility		Accessibility	
Derived 1	Yes ✓	Derived 1	Yes ✓	Derived 1	Yes ✓
Derived 2 Derived 3	Yes ✓	Derived 2 Derived 3	Yes ✓	Derived 2 Derived 3	No ✗
Main (Outside world)	Yes ✓	Main (Outside world)	No ✗	Main (Outside world)	No ✗

- ☐ Private data members will NOT be accessible in any derived class or in main function.
- ☐ Protected data members will become private data members in case of private inheritance and protected data members of derived class in case of protected inheritance.

Question No. 44

Protected data members will become private data members in case of private inheritance and protected data members of derived class in case of protected inheritance.

- A. True
- B. False

Comparison of Public, Protected and Private Inheritance:

Public Inheritance	Protected Inheritance	Private Inheritance
Base Class	Base Class	Base Class
Accessibility	Accessibility	Accessibility
Derived 1 Yes ✓	Derived 1 Yes ✓	Derived 1 Yes ✓
Derived 2 Derived 3 Yes ✓	Derived 2 Derived 3 Yes ✓	Derived 2 Derived 3 No ✗
Main (Outside world) Yes ✓	Main (Outside world) No ✗	Main (Outside world) No ✗

- ☐ Private data members will NOT be accessible in any derived class or in main function.
- ☐ Protected data members will become private data members in case of private inheritance and protected data members of derived class in case of protected inheritance.

Question No : 4 of 52

A copy constructor is invoked when

Answer (Please select your correct option)

☐

a function do not returns by value.



☒

an argument is passed by value.



Correct answer
email : usman
Cell : 03228

☐

a function returns by reference.

☐

an argument is passed by reference.

03228

Question No : 2 of 52

Assume a class Derv that is privately derived from class Base. An object of class Derv located in main() can access

Answer (Please select your correct option)

- ☒ public members of Derv.
- ☐ protected members of Derv.
- ☐ private members of Derv.
- ☐ protected members of Base.



Correct
email :
Cell :

Vu

me

Question No : 39 of 52

Which is not the Advantage of inheritance?

Answer (Please select your correct option)

☒

providing class growth through natural selection.



☐

facilitating class libraries.

☐

avoiding the rewriting of code.

☐

providing a useful conceptual framework.

Ma

Question No : 36 of 52

Suppose you create an uninitialized vector as follows:

```
vector<int> evec;  
After adding the statment,  
evec.push_back(21);  
what will happen?
```

Answer (Please select your correct option)

☐

It will add an element to the start of evec and will initialize it with 21.



☐

It will add an element to the center of evec and will reinitialize it with 21.

☐

It will delete an element to the end (the back) of evec and will reinitialize it with 21.

☒

It will add an element to the end (the back) of evec and initialize it with 21.



Ma

Question No : 37 of 52

A static function

Answer (Please select your correct option)

☐

should be called when an object is destroyed.



☐

is closely connected to an individual object of a class.

☐

can be called using the class name followed by function name.



☐

is used when a dummy object must be created.

Ma

Question No : 38 of 52

Default constructor either has no _____ or parameters with _____ values.

Answer (Please select your correct option)

☐

Parameters, temporary



☐

Parameters, null

☒

Parameters, default



☐

Parameters, zero

Ma

Question No : 34 of 52

_____ ensure that the correct function is called for an object, regardless of the expression used to make the function call.

Answer (Please select your correct option)

☐

Static functions



☒

Virtual functions



☐

Friend functions

☐

Inline functions

Ma

Question No : 33 of 52

C2+C1 is equivalent to _____, when plus operator is overloaded, and C2, C1 are objects.

Answer (Please select your correct option)

☐

C1.operator + (C2)



☐

C1.operator + (C1)

☐

C2.operator + (C1)



☐

C2.operator + (C2)

Correct a
email : us
Cell : 03

Ma

Question No : 28 of 52

The copy() algorithm returns an iterator to

Answer (Please select your correct option)

☐

the last element copied from.



☐

the last element copied to.

☐

the element one past the last element copied from.

☐

the element one past the last element copied to.

Correct answer solved by hadi
email : usmanraj20@gmail.com
Cell : 03228043306

Ma

Question No : 22 of 52

Consider the following definition

```
template < class T > class Xyz ( ... );
```

Answer (Please select your correct option)

☐

it defines a class template for integers only



☒

it defines a class template for any data type

Correct
email : v
Cell : 0

☐

class templates are not defined in this way

☐

it defines template functions

Ma

Question No : 25 of 52

Vectors contain contiguous elements stored as a[an] _____.

Answer (Please select your correct option)

☐

variable



☒

array



☐

function

☐

datatype

Ma

Question No : 29 of 52

Using catch blocks in **incorrect order** is _____ error.

Answer (Please select your correct option)

☐

Syntax



☒

Logical



Correct answer
email : usma
Cell : 032286

☐

Grammatical

☐

Runtime

Ma

Question No : 26 of 52

An STL algorithm is

Answer (Please select your correct option)

☒

A standalone function that operates on containers.



☐

A link between member functions and containers.

☐

A friend function of appropriate container classes.

☐

A member function of appropriate container classes.

Ma

Question No : 31 of 52

"This" pointer returns:

Answer (Please select your correct option)

☒ Reference of previous object



☐ Reference of preceded object

☐ Reference of current object

☐ Reference of next object

Ma

Question No : 35 of 52

In abnormal termination our program is terminated _____.

Answer (Please select your correct option)

☐

Manually



☐

Normally

☒

Abnormally



☐

Routinely

Corre
email
Cell

Ma

Question No : 15 of 52

In _____, a pointer or reference to an object is created inside a class.

Answer (Please select your correct option)

- ☒ Aggregation
- ☐ Composition
- ☐ Separation
- ☐ Association

Question No : 11 of 52

The main function of scope resolution operator (::) is,

Answer (Please select your correct option)

☐

To define an object



☐

To define a data member

☒

To link the definition of an identifier to its declaration



☐

To make a class private

Ma

Question No : 8 of 52

Suppose we have two derived classes from a single class, can we write a method with same name in both these derived classes ? Choose the best option.

Answer (Please select your correct option)

VuAnsw



☐

No

☐

Only if the two classes have the same name



☐

Only if the main program does not declare both kinds

☐

Yes

Made by:

Question No : 5 of 52

A class template _____

Answer (Please select your correct option)

☒ Facilitates reuse of class ✓



☐ Does not facilitate reuse of class

☐ Does not support generic methods

☐ Does not support static members

Ma

Question No : 6 of 52

Virtual functions allow you to

Answer (Please select your correct option)

☐

create an array of type pointer-to-base class that can hold pointers to derived classes.



☐

create functions that can never be accessed.

☐

group objects of different classes so they can all be accessed by the same function code.

☐

use the same function call to execute member functions of objects from different classes



Vu

Ma

Question No : 9 of 52

An abstract class is useful when,

Answer (Please select your correct option)

☐

We do not derive any class from it.



☐

There are multiple paths from one derived class to another.

☐

We do not want to instantiate its object.



☐

You want to defer the declaration of the class.

Ma

Question No : 13 of 52

Which of the following ensures that data and behaviour are tightly coupled within an object?

Answer (Please select your correct option)

- ☐ Inheritance
- ☐ Abstraction
- ☐ Polymorphism
- ☒ Encapsulation



Correct answer solved by hadi
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Ma

Question No : 18 of 52

A base class member or method that is alternatively defined in derived class is known as _____.

Answer (Please select your correct option)

☐ Overloaded



☐ Copy riding

☐ Overwriting

☐ Overriding

Ma

In Private _____ only member functions and friend classes or functions of a derived class can convert pointer or reference of derived object to that of parent object.

Answer (Please select your correct option)

VuAnswers.com

☐ specialization



☒ inheritance



☐ abstraction

☐ composition

Made by: Wa

Question No : 14 of 52

Which one of the following is not an object association?

Answer (Please select your correct option)

- ☐ Simple Association
- ☒ Inheritance
- ☐ Aggregation
- ☐ Composition

Question No : 10 of 52

Considering the resolution order in which compiler search for functions in a program; the first priority is given to,

Answer (Please select your correct option)

☐

general template



☐

partial specialization

☐

complete specialization

☐

ordinary function



Ma

Question No : 7 of 52

A pure virtual function is a virtual function that

Answer (Please select your correct option)

☐

causes its class to be abstract.

☐

returns nothing.

☐

is used in a derived class.

☐

takes no arguments

Vu

Ma

Question No : 2 of 52

Which of the following is the best approach if it is required to have more than one functions having exactly same functionality and implemented on different data types?

Answer (Please select your correct option)

VuAnswers.com



☒

Templates



☐

Overloading

☐

Data hiding

☐

Encapsulation

Made by: W

Question No : 39 of 52

```
class DocElement
{
public:
    virtual void Print() { cout << "Generic element"; }
};
class Heading : public DocElement
```

Answer (Please select your correct option)

☐ Generic element

☐ Heading element

☒ Paragraph element

☐ Nothing will be printed.



Ma

Question No : 36 of 52

We change the evaluation precedence of operators through operator overloading.

Answer (Please select your correct option)

- ☐ Can
- ☐ Can not  **doubt**
- ☐ Only
- ☐ Just

Question No : 33 of 52

Which of the following is Not an example of error handling techniques?

Answer (Please select your correct option)

☐

Abnormal Termination



☐

Graceful Termination

☐

Return the illegal value

☐

Returning a value

Correct answer solved by hadi
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Ma

Question No : 34 of 52

_____ remain in memory even when all objects of a class have been destroyed.

Answer (Please select your correct option)

☒

Static variables



☐

Instance variable

☐

Primitive variables

☐

Dynamic Variables

Ma

Question No : 37 of 52

In a de-queue, (chosed the best option)

Answer (Please select your correct option)

☐ Data can be quickly inserted or deleted at any arbitrary location.



☐ Data can be relatively slowly inserted or deleted at any arbitrary location.



☐ Data can not be quickly inserted or deleted at either end.

☐ Data can be relatively slowly inserted or deleted at either end.

Ma

Question No : 40 of 52

Each try block can have _____ no. of catch blocks.

Answer (Please select your correct option)

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ As many as necessary. ✓



Correct answer solved by hadi
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Ma

Question No : 3 of 52

Which of the following is the best approach to implement generic algorithms with minimum number of coding lines?

Answer (Please select your correct option)

- ☐ Templates
- ☐ Overloading
- ☐ Overriding
- ☐ Friend function/class



Vu

Ma

Question No : 4 of 52

Identify the correct way of declaring an object of user defined template class **A** for char type members?

Answer (Please select your correct option)

☒ A< char > obj;



☐ <char>A obj;

☐ A obj<char>;

☐ Obj <char> A;

Ma

Question No : 1 of 52

Target function for a call is selected at compile time in case of

Answer (Please select your correct option)

☒ Static binding

☐ Polymorphism

☐ Encapsulation

☐ Dynamic binding



Correct
email :
Cell : 0

Ma

Question No : 38 of 52

Suppose you create an uninitialized vector as follows:

```
vector<int> evec;  
After adding the statment,  
evec.push_back(21);  
what will happen?
```

Answer (Please select your correct option)

☐

It will add an element to the start of evec and will initialize it with 21.



☐

It will add an element to the center of evec and will reinitialize it with 21.

☐

It will delete an element to the end (the back) of evec and will reinitialize it with 21.

☐

It will add an element to the end (the back) of evec and initialize it with 21.

Ma

Question No : 35 of 52

Assume that a user wants to count, how many objects are created for a particular class, which one will be most suitable to perform this task:

Answer (Please select your correct option)

- ☐ Const data member
- ☐ Non static data member
- ☐ Static data member
- ☐ Global data member

Question No : 32 of 52

A range is often supplied to an algorithm by two _____ values.

Answer (Please select your correct option)

☐

italic



☒

iteration



☐

iterator

☐

container

Ma

Question No : 31 of 52

The find() algorithm

Answer (Please select your correct option)

☐

Finds matching sequences of elements in two containers.



☐

Finds a container that matches a specified container.

☐

Takes iterators as its first two arguments.



☐

Takes container elements as its first two arguments.

Question No : 30 of 52

A vector is an appropriate container if you

Answer (Please select your correct option)

☐

want to insert lots of new elements at arbitrary locations in the vector.



☐

want to insert new elements, but always at the front of the container.

☐

are given an index number in order to quickly access the corresponding element.



☐

are given an element key value in order to quickly access the corresponding element.

Ma

Question No : 27 of 52

Which one of the following is example of complete specialization,

Answer (Please select your correct option)

☐ `template <typename T> class Vector { };`



☐ `template <typename T> class Vector<T*> { };`

☒ `template<> class Vector <char*> { };` ✓

☐ `template <class T> class Vector< T *> { };`

Ma

Question No : 24 of 52

Consider the following statements:

- 1) `int iArray[5];`
- 2) `int *pArr = iArray;`

Answer (Please select your correct option)

☐

Error in first statement



☐

Error in second statement

☐

Error in both statements

☐

No error in both statements

Correct answer solved by hadi
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Ma

Question No : 21 of 52

Marks: 1 (Budgeted Time: 1m)

When a virtual function is called by referencing a specific object by name and using the dot member selection operator (e.g., squareObject.draw()), the reference is resolved at _____.

VuAnswers.com

Answer (Please select your correct option)

☒	Run time
☐	Compile time
☐	Processing time
☐	Execution time



Made by: Waqar S

Question No : 22 of 52

Which of the following causes a compile time error?

Answer (Please select your correct option)

☐

Declaring object of a concrete class in the definition of main function



☐

Writing output statement in constructor's definition

☒

Declaring object of a class having atleast one pure virtual function



☐

Declaring object of a class having all virtual functions

Ma

Question No : 28 of 52

Template functions use _____ than ordinary functions.

Answer (Please select your correct option)

☐ More Memory



☒ Less Memory



☐ Same Memory

☐ Different Memory

Ma

Question No : 29 of 52

An STL algorithm is

Answer (Please select your correct option)

☒

A standalone function that operates on containers.



☐

A link between member functions and containers.

☐

A friend function of appropriate container classes.

☐

A member function of appropriate container classes.

Ma

Question No : 26 of 52

Which of the following is NOT an advantage of generic programming?

Answer (Please select your correct option)

☐ Reusability



☐ Writability

☐ Maintainability

☐ Efficient memory usage

Correct answer solved by hadi
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Ma

Question No : 25 of 52

```
template<> class Vector<void*> {  
    void** p;  
    //....  
    void*& operator[] ((int i);  
};
```

Answer (Please select your correct option)

☐

This specialization can be used as the common implementation for all Vectors of pointers.



☐

This specialization can then be used as the implementation for all types of classes.

☐

This specialization can then be used for double type pointers.

☐

This specialization should be used for Vectors of int types.

Question No : 23 of 52

Multiple inheritance can be of type

Answer (Please select your correct option)

☐

Public, Private



☐

Private, Protected

☐

Protected, Public

☐

Public, Protected, Private

Ma

Question No : 18 of 52

The operations of copy constructor must define by:

Answer (Please select your correct option)

- ☐ System
- ☒ User
- ☐ System and User
- ☐ Administrator

Question No : 15 of 52

If you do not initialize static variable of int type then it is automatically initialized with _____.

Answer (Please select your correct option)

- ☒ 0
- ☐ 1
- ☐ -1
- ☐ Null

Question No : 12 of 52

In OOP's, advantage of inheritance include all of the given below except,

Answer (Please select your correct option)

☐ Provide a useful conceptual framwork



☐ Reusing the code

☐ Dealing with real world entities

☐ Decrease maintainability

Correct answer solved by hadi
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Cell : 03228043306

Ma

A virtual member function ding() in base and derived class, and pointer p to base class object contains the address of derived class object, then the statement p->ding() will execute ding() member function in _____ class.

VuAnswers.com

Answer (Please select your correct option)

☐	Base
☒	Derived
☐	Virtual
☐	Implemented



Correct answer solved by hadi
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Cell : 03228043306

Made by: Waqar Siddh

Question No : 10 of 52

By default, which access level is assigned to members of a class?

Answer (Please select your correct option)

☐

Public



☒

Private



☐

Local

☐

Protected

Ma

Question No : 13 of 52

What would be the output of following code?

```
class dummy
{
private:
    int data;
```

Answer (Please select your correct option)



Compile-time error



Output is 0



Run-time error



Output will be a garbage value

Ma

Question No : 16 of 52

Public methods of base class can be _____ accessed in the derived class.

Answer (Please select your correct option)

☒

Directly



Cor
ema
Cel

☐

Indirectly

☐

Consecutively

☐

Simultaneously

Ma

Question No : 19 of 52

A base class member or method that is alternatively defined in derived class is known as _____.

Answer (Please select your correct option)

☐

Overloaded



☐

Copy riding

☐

Overwriting

☒

Overriding



Ma

Question No : 20 of 52

All the _____ members of base class can be accessed from the derived class.

Answer (Please select your correct option)

- ☐ Private
- ☐ Protected
- ☐ Non private
- ☒ Public



Correct answer solved by hadi
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Cell : 03228043306

Ma

Question No : 17 of 52

Which members are lies somewhere between public and private members?

Answer (Please select your correct option)



Protected members



Global members



Static members



Friends members

Ma

Question No : 14 of 52

Which will be the good example of a method that is shared by all instances of a class?

Answer (Please select your correct option)

☐

Virtual method



☐

Overloaded method

☐

Constant method

☐

Static method

Correct answer solved by hadi
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Cell : 03228043306

Ma

Question No : 11 of 52

Which of the following can be the instance of class Vehicle?

Answer (Please select your correct option)

☐ Car, Computer, Desk



☐ Ahmad, Bicycle, Truck

☐ Computer, Truck, Ahmad

☐ Car, Bicycle, Truck

Correct answer solved by hadi
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Ma

Question No : 6 of 52

Three main characteristics of "Object Oriented programming" are,

Answer (Please select your correct option)

☐

encapsulation, dynamic binding, polymorphism



☐

polymorphism, overloading, overriding

☐

encapsulation, inheritance, dynamic binding

☐

encapsulation, inheritance, polymorphism

Ma

Question No : 7 of 52

A private member or variable is not accessible to:

Answer (Please select your correct option)

☐

Base class



☐

Derived class

☐

Abstract class

☐

virtual class

Ma

Question No : 8 of 52

Marks: 1 (Budgeted Time 1 Min)

A non virtual member function `ding()` in base and derived class, and pointer `p` to base class object contains the address of derived class object, then the statement `p->ding()` will execute `ding()` member function in _____ class.

VuAnswers.com

Answer (Please select your correct option)

☒	Base
☐	Derived
☐	Abstract
☐	virtual

Correct answer solved by hadi
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Made by: Waqar Siddhique

Question No : 5 of 52

Considering the resolution order in which compiler search for functions in a program; the first priority is given to,

Answer (Please select your correct option)

☐

general template



☐

partial specialization

☐

complete specialization

☒

ordinary function



Correct answer solved by hadi
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Ma

Question No : 4 of 52

An abstract class is useful when,

Answer (Please select your correct option)

☐

We do not derive any class from it.



☐

There are multiple paths from one derived class to another.

☐

We do not want to instantiate its object.



☐

You want to defer the declaration of the class.

Ma

Question No : 3 of 52

Mark

When the base class and the derived class have a member function with the same name, you must be more specific which function you want to call (using _____).

VuAnswers.co

Answer (Please select your correct option)

☐

scope resolution operator



☐

dot operator

☐

null operator

☐

Operator overloading

Correct answer solved by: hadi
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Made by: Wa

Question No : 1 of 52

Which of the following is the best approach to implement generic algorithms with minimum number of coding lines?

Answer (Please select your correct option)

☒

Templates



☐

Overloading

☐

Overriding

☐

Friend function/class

Question No : 2 of 52

Identify the correct way of declaring an object of user defined template class **A** for char type members?

Answer (Please select your correct option)

☒ A< char > obj;



☐ <char>A obj;

☐ A obj<char>;

☐ Obj <char> A;

Ma