Question No. 01

The technique in which we visualize our programming problems according to real life's problems is called ----------

A. structured programming

B. object oriented Programming

C. procedural programming

D. None of the given

OBJECT ORIENTED PROGRAMM

The technique in which we visual[illegible]our programming problems according to real life's problems is called Object Oriented Programming.

Question No. 02

What a derived class can add?

A. New data members

B. New member and New friend functions

C. New constructors and destructor

D. All of the given

CLASSES

In OOP we create a general sketch, in which same type of object are given is known as "**CLASS**".

Class – Fruit

- Apple - Banana - Orange

1. Parent Class - Base Class

- The parent class is called base class
- No New Member Added

2. Child Class - Derived Class

- The child class is called derived class
- New Member
- New Function
- New Constructor
- New Destructor Added

Question No. 03

_____ is/are used to access information hidden within an object?

A. Public Member Functions

B. Private Member Functions

C. Both A and B

D. None of the above

ACCESS SPECIFIERS

Access specifiers These are used to enforce access restrictions to members of a class, there are three access specifiers,

1. **'PUBLIC'** is used to accessed an object whenever you want to access
2. **'PRIVATE'** is used to access hidden object through member functions
3. **'PROTECTED'** to be discussed when we cover inheritance

Question No. 04

The concept of derived classes is involved in,

A. structure

B. encapsulation

C. inheritance

D. array

DERIVED CLASSES

Derived classes is the concept related to inheritance.

1. **'PUBLIC'** is used to accessed an object whenever you want to access
2. **'PRIVATE'** is used to access hidden object through member functions
3. **'PROTECTED'** to be discussed when we cover inheritance

Question No. 05

this pointers are not accessible for static member functions.

A. True

B. False

This Pointer and Static Function

- this pointer is passed implicitly to member functions
- this pointer is not passed to static member functions
- Reason is static member functions cannot access non static data members

Question No. 06

Which of the following operator can be overloaded?

A. +

B. + +

C. + =

D. All of the above

OPERATOR OVERLOADING

Assume that operator + has been overloaded then actual C++ code becomes: **c1+c2+c3+c4**

Operator that can Overloaded:

+ - * / % & | ~ !

++ -- == => =< , ( ) [ ] !=

Operator that can't Overloaded:

. .* :: ?: # ##

Question No. 07

A generalization-specialization relation between classes are implemented using _____ .

A. data hiding
B. inheritance
C. encapsulation
D. friend classes

INHERITANCE

Inheritance is generalization specialization relation between classes implemented.

Question No. 08

Which of the following is used to perform some useful work between object in OOP?

A. aggregation

B. inheritance

C. encapsulation

D. association

ASSOCIATION

In object oriented model, objects interact with each other in order to perform some useful work, between objects or entities using the association.

- This association can be represented with a line along an arrow head (→) or without arrow head.

Types of Association

- Class Association - implement by Inheritance
- Object Association - implement by Object
  - ✓ Simple Association
  - ✓ Composition
  - ✓ Aggregation

Question No. 09

Static variables act like a global variable in the context or scope of the class.

A. True

B. False

Static Variable

- Static variables act like a global variable in the context or scope of the class.

Question No. 10

Constant objects cannot change their state.

A. True

B. False

CONSTANT OBJECT

- Constant objects cannot change their state.

Question No. 11

Keeping in view the principle of abstraction, which of the above information the company needs to save as employee's record?

A. 2 , 1

B. 1, 3, 5

C. 1, 2, 3

D. All of the above

ABSTRACTION

"Capture only those details about an object that are relevant to current perspective".

Here object Ali has **two perspectives** one is his **student** perspective and second is his **teacher** perspective.

Question No. 12

_____ operator is used to access via the variable name?

A. dot operator (.)

B. arrow operator (->)

C. equal operator (=)

D. All of the above

ACCESSING MEMBERS

The member of an object is accessed with two methods.

1. dot operator(.) to access via the variable name

```
Student aStudent;
aStudent. rollNo = 5;
```

2. arrow operator (->) to access via a pointer to an object

```
Student * aStudent = new Student();
aStudent->rollNo = 5;
```

Question No. 13

Which construct is the source for the creation of an object at runtime?

A. Destructor

B. New operator

C. Delete

D. Constructor

NEW OPERATOR

Allocation with **new Operator**

- new operator can be used to create objects at runtime

Question No. 14

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

A. Variable

B. Primitive variables

C. Instance variable

D. Static variables

Life of Static Data Member

- They are created even when there is no object of a class
- They remain in memory even when all Objects of a class are destroyed

Question No. 15

How many types of Association is OOP?

A. 1

B. 2

C. 3

D. 4

ASSOCIATION

In object oriented model, objects interact with each other in order to perform some useful work, between objects or entities using the association.

- This association can be represented with a line along an arrow head (→) or without arrow head.

Types of Association

- Class Association - implement by Inheritance
- Object Association - implement by Object
  - ✓ Simple Association
  - ✓ Composition
  - ✓ Aggregation

Question No. 16

A static member function cannot be declared.

A. Static

B. Implicit

C. Explicit

D. Virtual

STATIC MEMBER FUNCTION

A static member function cannot be declared virtually.

But it can be declared in following:

- Static
- Implicit
- Explicit

Question No. 17

The compiler won't object if you overload the * operator to perform division.

A. True

B. False

Question No. 18

Which operator can not be overloaded?

A. The relation operator (>=)

B. Assignment operator (=)

C. Script operator ([])

D. Conditional operator (? :)

OPERATOR OVERLOADING

Assume that operator + has been overloaded then actual C++ code becomes: **c1+c2+c3+c4**

Operator that can Overloaded:

+ - * / % & | ~ !

++ -- == => =< , () [] !=

Operator that can't Overloaded:

. .* :: ?: # ##

Question No. 19

What problem(s) may occur when we copy objects without using deep copy constructor?

A. Memory Leakage

B. Dangling pointer

C. System crash

D. All of the given

DEEP COPY

Following error can be occur in deep copy:

- ❑ Memory Leakage
- ❑ Dangling pointer
- ❑ System crash

Question No. 20

a'A static member function can be called, even when a class is not _____.

A. Declared

B. Define

C. Instantiated

D. Called

DEEP COPY

Following error can be occur in deep copy:

- ❑ Memory Leakage
- ❑ Dangling pointer
- ❑ System crash

Question No. 21

Suppose there is an object of type Class, which of the following can be considered as one of its function

A. **changeName ( );**

B. **changeSection ( );**

C. **changeIncharge ( );**

D. **All of the given**

OBJECTS

Any thing around us is known as object. An object has two main thing:

1. Attribute – Characteristics of Object

Car

- Color
- Model

2. Attribute – Behavior or Function of Object

Person

- Change Color ( );
- Change Model ( );

Question No. 24

In OOP a class is an example of _____ .

A. None of the given

B. Common Noun

C. Proper Noun

D. Noun

CLASSES

- The name of the class may be **Noun**
- Classes are the user define type in object oriented programming.

Question No. 26

We can use "this" pointer in the constructor in the body and even in the initialization list of any class if we are careful,

A. True

B. False

Question No. 27

Which part of an object exhibits its state?

A. Data

B. Operator

C. Public

D. Private

DATA

- DATA object exhibits its state.

Question No. 28

Inheritance is a way to

A. organize data

B. pass arguments

C. add features to existing classes without rewriting them

D. None of the given

INHERTANCE

- Inheritance is a way to add features to existing classes without rewriting them.

Question No. 29

Friend functions are _____ functions of a class.

A. object member
B. non-member
C. Public member
D. Private member

FRIEND FUNCTION

- Friend functions are non-member functions of a class.

Question No. 30

The statement **objA=objB;** will cause a compiler error if the objects are of different classes.

A. True

B. False

Question No. 32

The life of sub object is not dependant on the life of master class in _____.

A. Composition

B. Separation

C. Aggregation

D. None of the given

AGGREGATION

Aggregation is a weak relationship than composition because in this relationship two classes get services of each other but can exist independently as well

In aggregation, a pointer or reference to an object is created inside a class. The sub-object has a life that is NOT dependant on the life of its master class.

Question No. 36

In order to free the memory occupied by the object, we use _____ .

A. Constructor

B. Destructor

C. Shallow Copy

D. Deep Copy

Destructor

- Destructor is used to free the allocated memory.

Question No. 37

_____ satisfy the condition of polymorphism.

A. Carbon

B. Diamond

C. Coal

D. All of the above

POLYMORPHISM

- Polymorphism satisfy their condition is following:
- Carbon
- Dimond
- Coal

Question No. 39

The _____ relationship indicates that an object contains other objects.

A. 'has-a'

B. 'is-a'

C. 'be-'

D. None of the given

Question No. 40

_____ provide the facility to access the data member.

A. accesser function
B. private function
C. inline function
D. All of the above

ACCESSER FUNCTION

Accesser function provide the facility to access the data member.

Question No. 42

Which one is not keyword in C++?

A. **Operator**

B. **Constant**

C. **IF/ELSE**

D. **None of the given**

Reserve Words

- The reserve words are the words which not use as variable or keyword in C++.

Examples:

- Operator
- Constant
- IF/ELSE

Question No. 44

Which of the following is not an example of multiple inheritances?

A. Mermaid

B. Woman

C. Amphibious Vehicle

D. None of the given

Multiple Inheritances

- Multiple Inheritances is the sub classes.

Examples:

- Toyota Car
- 9th Class

Question No. 47

In object orientated programming, a class of objects cans _____ properties from another class of objects

A. Utilize

B. Borrow

C. Inherit

D. Adopt

INHERITANCE

In object orientated programming, a class of objects cans Inherit properties from another class of objects

.	.*	::	?:	#	##

Reason: They take actual current object name, rather than value in their argument as you have seen previously in the use of dot ('.') operator,

Student std;
int roll = std.getRollNo() // dot operator is performing on actual function (getRollNo) of class Student that will vary from program to program.

?: is the only ternary operator in C++ and can't be overloaded.

The precedence of an operator:

The precedence of an operator is order of evaluation which operator will be evaluated first in expression.
The precedence of an operator is **NOT** affected due to overloading.
Example:

Question # 3 of 5 (Start time: 03:08:25 PM, 05 December 2024)

cout is an object of _____ class.

Select the correct option

- ○ istream
- ○ instream
- ○ fstream
- ◉ ostream ✓

Question # 3 of 10 (Start time: 10:44:07 AM, 02 December 2024)

What is the purpose of new operator?

Select the correct option

○	Used as return type when an object is created
○	Used to declare any new thing in a program
○	Allocates memory for an object or array
◉	Allocates memory for an object or array and returns a particular pointer ✓

Question # 4 of 10 (Start time: 10:45:39 AM, 02 December 2024)

Which of the following is correct feature that is used to make basic operators like +, - , * and / etc. to work with user defined types?

Select the correct option

○	type loading
○	abstraction
◉	operator overloading
○	inheritance

Question # 1 of 5 (Start time: 04:48:04 PM, 21 November 2024)

Which of the following creates the strongest relationship between two objects?

Select the correct option

- ○ Association
- ○ Inheritance
- ○ Composition
- ○ Aggregation

Question # 10 of 10 (Start time: 10:49:55 AM, 02 December 2024)

An operator in C++ can be overloaded using _____ keyword.

Select the correct option

○	Switch
○	Overload
○	Load
◉	Operator

Question # 9 of 10 (Start time: 10:49:27 AM, 02 December 2024)

What is the access specifier used to specify that the members of a base class are accessible in the derived class but not to the outside world?

Select the correct option

○	public
○	private
●	protected ✓
○	friend

Question # 8 of 10 (Start time: 10:48:47 AM, 02 December 2024)

In C++, when a binary overloaded operator "+" is called, _____ is passed as an argument.

Select the correct option

◉	Left hand operand
○	Dot operator
○	Right hand operand
○	Pointer

Question # 1 of 10 (Start time: 09:38:54 AM, 18 November 2024)

Static data members are shared by _____ of the class.

Select the correct option

- ○ Public data members
- ◉ All types of data members
- ○ Private data members
- ○ Protected data members

/ALL Object

CS304P - Object Oriented Programming (Practical) (Lab Quiz No. 5)

Question # 3 of 5 (Start time: 04:48:56 PM, 21 November 2024)

The relationship between container and contained objects is called _____.

Select the correct option

○	Association
●	Aggregation
○	Inheritance
○	Composition

Question # 5 of 10 (Start time: 10:46:18 AM, 02 December 2024)

Why do we need relationships between classes?

Select the correct option

- ○ To increase code re-usability
- ◉ All of the given option
- ○ To use the functionality of one class into derived classes
- ○ To enhance the communication between classes

Question # 5 of 10 (Start time: 09:40:59 AM, 18 November 2024)

Which of the following option is false?

Select the correct option

- Public members are accessible from other classes also
- Private members can be accessed using friend functions
- Data members can't be inherited
- Member functions can be made private

Question # 5 of 5 (Start time: 03:39:36 PM, 14 November 2024)

Which of the following keyword should be used to declare a static variable?

Select the correct option

○	stat
○	global
○	const
◉	static

Question # 10 of 10 (Start time: 10:41:42 AM, 02 December 2024)

In OOP, static data members of a class are called _____ variables.

Select the correct option

- (●) Class
- ( ) Object
- ( ) Structure
- ( ) Function

```
#include<iostream>
#include <stdio.h>
using namespace std;

void test() {
   static int count = 0;
   count++;
   cout<<" "<<count;
}

int main() {
   test(); test(); test();
   return 0;
}
```

What will be the correct output of above code?

Select the correct option

○	1 1 1
○	3 3 3
◉	1 2 3
○	1 1 2

Question # 2 of 5 (Start time: 03:37:37 PM, 14 November 2024)

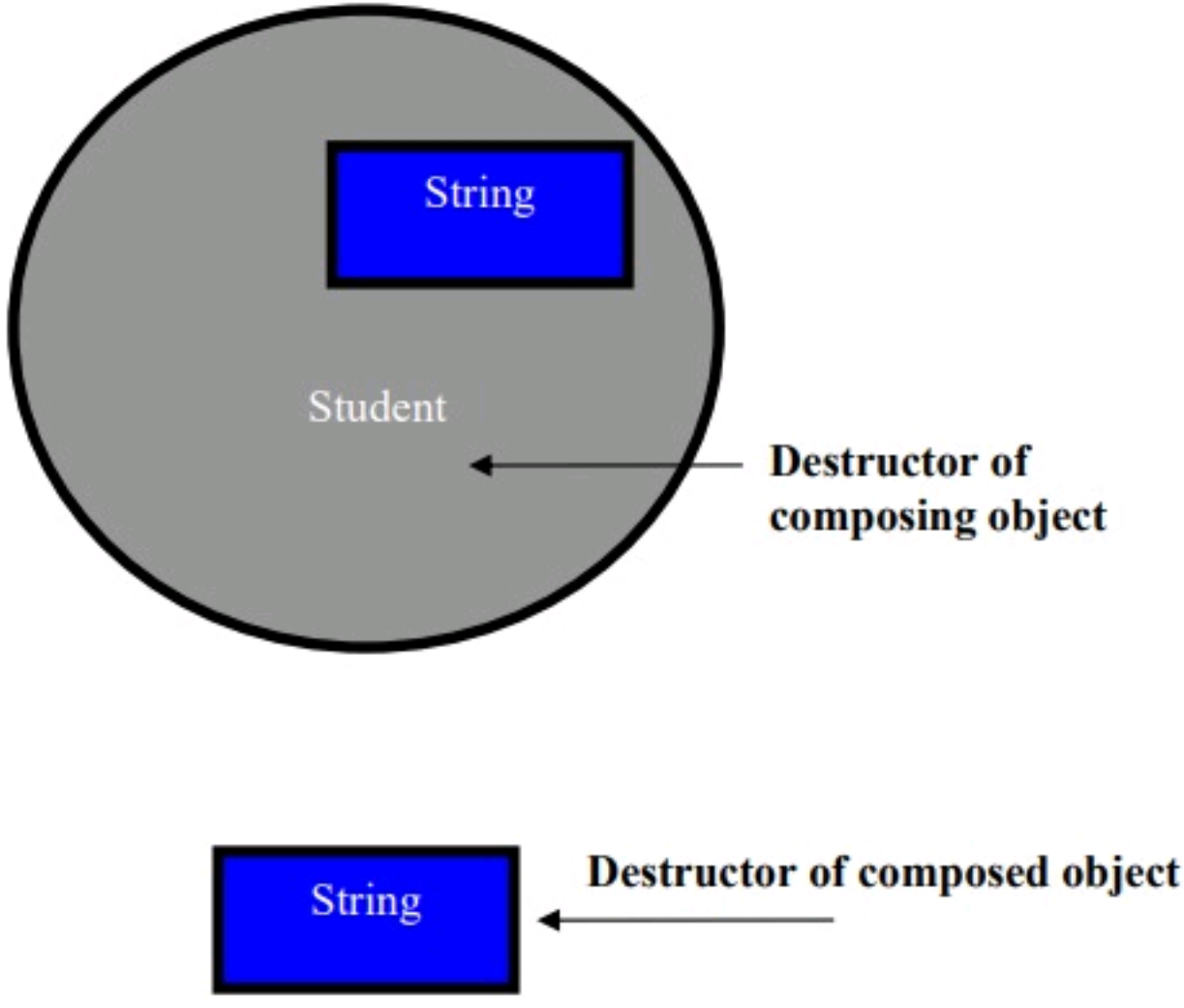
Static data members are shared by _____ of the class.

Select the correct option

- ○ Public data members
- ○ Private data members
- ◉ All types of data members
- ○ Protected data members

Destructor calling:

Destructors are called from composing objects to composed objects.



Question # 2 of 5 (Start time: 05:08:23 PM, 12 November 2024)

Which of the following is NOT true about constructor?

Select the correct option

- Constructor is a special function having the same name as the class name
- Constructor does not have return type
- Constructors are commonly public members
- Constrcutor can be a constant function

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Question # 1 of 5 (Start time: 05:07:45 PM, 12 November 2024)

Which of the following class cannot exist standalone in an object model?

Select the correct option

- ○ Concrete Class
- ◉ Abstract Class
- ○ Friend Class
- ○ Derived Class

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CS304 - Object Oriented Programming (Quiz No. 1)

Question # 1 of 10 (Start time: 03:31:16 PM, 14 November 2024)

Which of the following is NOT true about constructor?

Select the correct option

○	Constructors are commonly public members of a class.
○	Constructor is used to initialize data members of a class.
◉	Constructor is a special function which can have different name than class name.
○	Constructor does not have return type.

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 2 of 10 (Start time: 03:32:39 PM, 14 November 2024)

If we extend our Object Oriented Model and the rest of model is not affected, this feature is called_____.

Select the correct option

- (●) Flexibility
- ( ) Reusability
- ( ) Efficiency
- ( ) Consistency

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 9 of 10 (Start time: 03:35:50 PM, 14 November 2024)

Which of the following can be the behavior of an object "Usman"?

Select the correct option

- (●) Eat
- ( ) Address
- ( ) Name
- ( ) Age

CS304 - Object Oriented Programming (Quiz No. 2)

Question # 1 of 10 (Start time: 10:33:49 AM, 02 December 2024)

Which of the following statement is NOT true about static variable of a class?

Select the correct option

- They are created even when there is no object of a class.
- Static variable is initialized once only throughout the program.
- Static variable belongs to a particular instance of a class.
- They remain in memory even when all Objects of a class are destroyed.

Question # 3 of 10 (Start time: 10:35:21 AM, 02 December 2024)

Which of the following statement is TRUE about a class's Static Member Function?

Select the correct option

- (●) It is used to access static data members only.
- ( ) It can access non-static data members.
- ( ) It can only be called by a particular object of class.
- ( ) It can access constant data members of the class.

Order of Initialization

- Data member are initialized in order they are declared in the class
- Order in member initializer list is not significant at all

Example

```
class ABC{
        int x;
        int y;
        int z;
public:
        ABC();
};
ABC::ABC():y(10),x(y),z(y)
{
        …
}
/*      x = Junk value
              y = 10
              z = 10 */
```

Question # 6 of 10 (Start time: 10:38:00 AM, 02 December 2024)

Which of the following is the correct syntax of declaring static variable "count" of type int?

Select the correct option

- static count int;
- static int count;
- int count static;
- int static count;

Question # 7 of 10 (Start time: 10:39:05 AM, 02 December 2024)

What will be the value of variables a,b, and c after instantiating an object of the given class?

```
class test {
int a; int b; int c;
public:
test():b(5),c(a),a(b){
}
};
```

Select the correct option

- ○ 5, 5, 5
- ◉ Junk value, 5, Junk value
- ○ 5, Junk value, 5
- ○ Junk value, 5, 5

Question # 8 of 10 (Start time: 10:40:28 AM, 02 December 2024)

Suppose we have a class named "Test" and void show() is one of its public member function. Which of the following is a correct way to call show() function using Test pointer ptr?

Select the correct option

- ptr:show();
- ptr::show();
- ptr.show();
- ptr->show();

Question # 2 of 10 (Start time: 10:34:37 AM, 02 December 2024)

Student *ptr = new Student("Ali"); is an example of _____.

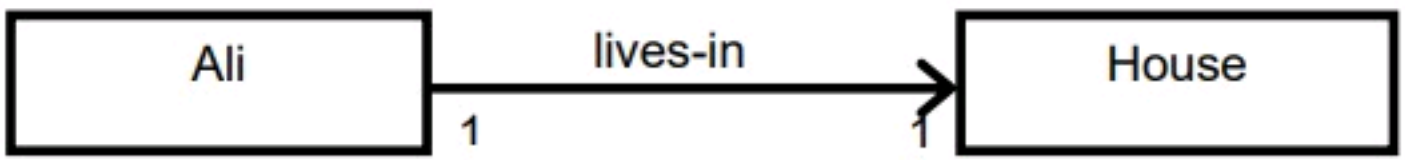
Select the correct option

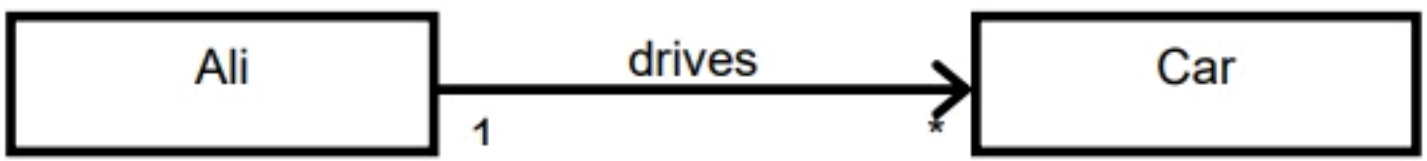
○	Destructor
○	Constructor
●	Dynamic memory allocation
○	Static memory allocation

05.3.Simple Association

The two interacting objects have no intrinsic relationship with other object. It is the weakest link between objects. It is a reference by which one object can interact with some other object.

Customer gets cash from cashier
Employee works for a company
Ali lives in a house
Ali drives a car





It is generally called as "**association**" instead of "**simple association**"

Question # 10 of 10 (Start time: 09:43:29 AM, 18 November 2024)

Interaction of different objects in OO model is known as _____.

Select the correct option

○	Encapsulation
○	Abstraction
◉	Association
○	Inheritance

Question # 9 of 10 (Start time: 09:43:00 AM, 18 November 2024)

In classes which of the following is default access specifier?

Select the correct option

- ○ None of the given option
- ◉ Private
- ○ Public
- ○ Protected

Question # 8 of 10 (Start time: 09:42:31 AM, 18 November 2024)

Which of the following is the default access specifier for members of a class?

Select the correct option

- (●) private
- ( ) protected and public
- ( ) public
- ( ) protected and private

Question # 7 of 10 (Start time: 09:41:54 AM, 18 November 2024)

Which of the following can be the attribute of the Employee class?

Select the correct option

- ○ Roll Number
- ○ Course
- ◉ Salary
- ○ GPA

Question # 6 of 10 (Start time: 09:41:32 AM, 18 November 2024)

Which of the following concept deals with the security of data?

Select the correct option

- (●) Data Hiding
- ( ) Generalization
- ( ) Inheritance
- ( ) Polymorphism

Question # 3 of 10 (Start time: 09:40:08 AM, 18 November 2024)

Car carries passengers.

Bus carries passengers.

Truck carries luggage.

Harvester harvests the crops.

Car, Bus, Harvester and Truck are derived from which class?

Select the correct option

○	Public Transport
○	Passenger Transport
◉	Vehicle
○	Navy Ships

Question # 4 of 10 (Start time: 09:40:35 AM, 18 November 2024)

Which problem arises due to multiple inheritance, when the parent classes are also derived from the grandparent class?

Select the correct option

- ○ Circle
- ◉ Diamond
- ○ Triangle
- ○ Loop

Question # 2 of 5 (Start time: 04:48:31 PM, 21 November 2024)

Which of the following offers a programmer the facility of using a specific class object into other classes?

Select the correct option

- ○ Inheritance
- ○ Polymorphism
- ○ Composition
- ○ Abstraction

Question # 2 of 10 (Start time: 09:39:26 AM, 18 November 2024)

_____ is a concept to extract common behaviours by using Bottom to Top approach.

Select the correct option

- ○ Generalization
- ○ Sub-typing
- ○ Extension
- ○ Specialization

Question # 4 of 5 (Start time: 03:39:13 PM, 14 November 2024)

"Static data member is declared ___ the class, but they are defined ___ the class."

Choose the correct sequence of data member declaration and definition.

Select the correct option

○	Outside, Outside
○	Outside, Inside
○	Inside, Inside
◉	Inside, Outside

Question # 3 of 5 (Start time: 05:10:33 PM, 12 November 2024)

Which problem arises due to multiple inheritance, when the parent classes are also derived from the grandparent class?

Select the correct option

- ○ Loop
- ○ Circle
- ○ Triangle
- ◉ Diamond ✓

Question # 1 of 5 (Start time: 03:36:57 PM, 14 November 2024)

Which of the following best defines static data members of a class?

Select the correct option

- ○ Data member which is allocated for each object separately
- ○ Data member with global scope
- ○ Data member which is common to all the classes in a program
- ◉ Data member which is common to all the objects of a class

Following code is equivalent to which option.

```
class Shape
{
   string type;
};
```

Select the correct option

- [x] `class Shape { public: string type; };`
- [ ] `class Shape { private: string type; };`
- [ ] `class Shape { protected: string type; };`
- [ ] `class Shape public: { public: string type; };`

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Question # 4 of 5 (Start time: 05:11:02 PM, 12 November 2024)

In classes which of the following is default access specifier?

Select the correct option

- ○ None of the given option
- ○ Public
- ◉ Private Pg : 69
- ○ Protected

Question # 4 of 10 (Start time: 10:35:59 AM, 02 December 2024)

The keyword "friend" should be placed in _____ :

Select the correct option

- Anywhere in program
- Function Declaration
- Function Definition
- Main Function

Question # 9 of 10 (Start time: 10:41:02 AM, 02 December 2024)

In composition _____ are called from composed objects to composing objects.

Select the correct option

○	Constructors
○	Pointers
◉	Destructors
○	Variables

Question # 5 of 10 (Start time: 10:36:27 AM, 02 December 2024)

Consider the following code and choose the correct **order of initialization** for the data members of the class.

```
class A {
int a,b,c;
public: A(): b(10), c(0), a(7){
}
};
```

Select the correct option

○	a,c,b
◉	c,a,b
○	a,b,c
○	b,a,c

Friend Functions

Prototypes of friend functions appear in the class definition.
But friend functions are NOT member functions.

Friend Functions

Friend functions can be placed anywhere in the class without any effect
Access specifiers don't affect friend functions or classes

12.3. Static Member Function

Definition:

"The function that needs access to the members of a class, yet does not need to be invoked by a particular object, is called static member function"

- They are used to access static data members
- Access mechanism for static member functions is same as that of static data members
- They cannot access any non-static members

Static Data Member

Definition

"A variable that is part of a class, yet is not part of any object of that class, is called static data member"

Static Data Member

They are shared by all instances (objects) of the class
They do not belong to any particular instance of a class

Class vs. Instance Variable

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 10 of 10 (Start time: 03:36:09 PM, 14 November 2024)

Which of the following concept is more close to encapsulation?

Select the correct option

- ○ Inheritance
- ◉ Information Hiding
- ○ Exception Handling
- ○ Polymorphism

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 6 of 10 (Start time: 03:34:18 PM, 14 November 2024)

Which of the following method allows to reuse the characteristics of more than one parent class?

Select the correct option

- ○ Polymorphism
- ◉ Multiple Inheritance
- ○ Specialization
- ○ Single inheritance

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 7 of 10 (Start time: 03:34:47 PM, 14 November 2024)

Destructor is a function which has the same name as that of class, but starts with a _____ sign.

Select the correct option

- $
- ~
- #
- %

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 8 of 10 (Start time: 03:35:30 PM, 14 November 2024)

In OOP, which of the following feature is used to derive a class from another class?

Select the correct option

- (●) Inheritance
- ( ) Polymorphism
- ( ) Data hiding
- ( ) Encapsulation

Question # 3 of 5 (Start time: 03:08:25 PM, 05 December 2024)

cout is an object of _____ class.

Select the correct option

- ○ istream
- ○ instream
- ○ fstream
- ◉ ostream ✓

Question # 1 of 5 (Start time: 04:48:04 PM, 21 November 2024)

Which of the following creates the strongest relationship between two objects?

Select the correct option

- ○ Association
- ○ Inheritance
- ○ Composition
- ○ Aggregation

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 5 of 10 (Start time: 03:33:55 PM, 14 November 2024)

Which of the following is a strong relationship?

Select the correct option

- (●) Composition
- ( ) Inheritance
- ( ) Association
- ( ) Polymorphism

Question # 5 of 5 (Start time: 03:09:31 PM, 05 December 2024)

"cin" is an object of _____ class.

Select the correct option

- fstream
- istream
- instream
- ostream

Question # 3 of 10 (Start time: 10:44:07 AM, 02 December 2024)

What is the purpose of new operator?

Select the correct option

○	Used as return type when an object is created
○	Used to declare any new thing in a program
○	Allocates memory for an object or array
◉	Allocates memory for an object or array and returns a particular pointer ✓

The solution to this problem is simple that we can write normal operators like +,-,*, and so on for our user defined classes as well,

It is "***Operator overloading***"

Using operator overloading we can perform basic operations (like addition, subtraction, multiplication, division and so on…) on our own defined classes objects in the similar way as we perform them on basic built-in types(like int, float, long, double etc.).

C++ allows us to overload common operators like **+**, **-** or * etc…

With operator overloading Mathematical statements don't have to be explicitly converted into function calls as we had to do to add two complex no objects using function call **Add**.

Question # 4 of 10 (Start time: 10:45:39 AM, 02 December 2024)

Which of the following is correct feature that is used to make basic operators like +, - , * and / etc. to work with user defined types?

Select the correct option

○	type loading
○	abstraction
◉	operator overloading
○	inheritance

Question # 5 of 5 (Start time: 04:57:02 PM, 21 November 2024)

Which of the following is a weak relationship?

Select the correct option

- ○ Aggregation
- ○ Association
- ○ Composition
- ○ Inheritance

Question # 8 of 10 (Start time: 09:42:31 AM, 18 November 2024)

Which of the following is the default access specifier for members of a class?

Select the correct option

- private
- protected and public
- public
- protected and private

Question # 2 of 10 (Start time: 10:43:38 AM, 02 December 2024)

In C++, if new operator is used, when is the constructor called?

Select the correct option

- ○ Constructor is called to allocate memory
- ◉ After the allocation of memory
- ○ Before the allocation of memory
- ○ Depends on code

19.1.Stream Insertion operator

Often we need to display the data on the screen c++ provides us insertion operator ('<<')to put data on output stream default is console but it can be any file or network socket as well to send data on network from our program.

Example:

```
int i=1, j=2;
cout << "i= "<< i << "\n";
cout << "j= "<< j << "\n";
```

19.2.Stream Extraction operator

We also need to get data from the console or from file or network this is achieved through c++ provided stream extraction operator ('>>') that is used to get data from input stream, again default input stream is from console.

Example:

```
int i,j;
cin >> i >> j; // getting value of i and j from user
```

Explanation:

cin and **cout** are objects of istream and ostream classes used for input and output respectively, the insertion and extractions operators have been overloaded in istream

Question # 7 of 10 (Start time: 10:47:52 AM, 02 December 2024)

Suppose c1, c2, and c3 are the objects of the Complex class and we overloaded the + operator.

c3 = c1 + c2;

In this statement, _____ object will be passed as argument when + operator is called.

Select the correct option

○	c2
○	c3
◉	c1 and c2
○	c1

Operator overloading

Operator functions are not usually called directly, they are automatically invoked to evaluate the operations they implement by compiler.

List of operators that can be overloaded in C++:

new	delete	new[]	delete[]				
+	-	*	/	%	^	&	|	~
!	=	<	>	+=	-=	*=	/=	%=
^=	&=	|=	<<	>>	>>=	<<=	==	!=
<=	>=	&&	||	++	--	,	->*	->
()	[]							

List of operators that can't be overloaded:

.	.*	::	?:	#	##

Reason: They take actual current object name, rather than value in their argument as you have seen previously in the use of dot ('.') operator,

Student std;
int roll = std.getRollNo() // dot operator is performing on actual function (getRollNo) of class Student that will vary from program to program.

?: is the only ternary operator in C++ and can't be overloaded.

The precedence of an operator:

The precedence of an operator is order of evaluation which operator will be evaluated first in expression.
The precedence of an operator is **NOT** affected due to overloading.
Example:

Question # 4 of 5 (Start time: 03:08:56 PM, 05 December 2024)

Which of the following is unary operator in C++?

Select the correct option

- ++
- *
- -
- +

Question # 1 of 5 (Start time: 03:05:18 PM, 05 December 2024)

Which of the following is correct symbol of stream extraction operator?

Select the correct option

- ○ >
- ○ <<
- ○ <
- ◉ >>

Question # 2 of 5 (Start time: 03:07:28 PM, 05 December 2024)

What will be the output of following C++ code?

```
int a=5;

cout<<a++;
```

Select the correct option

○	0
◉	5
○	a
○	6

Question # 4 of 5 (Start time: 04:56:16 PM, 21 November 2024)

A doctor can see patients. This type of relationship is known as _____.

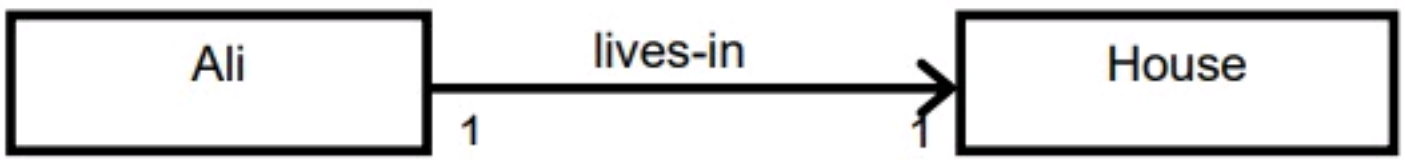
Select the correct option

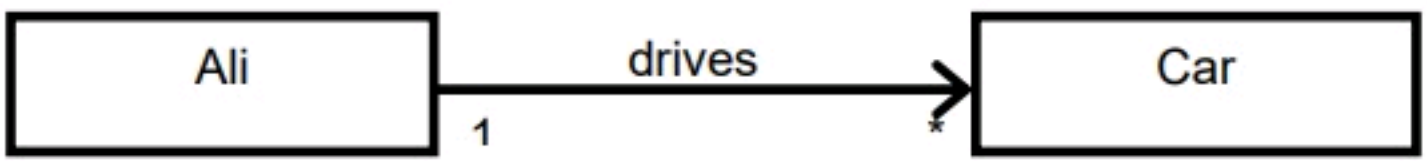
○	Binary Association
○	Two-way Association
○	One-way Association ✓ not sure
○	Ternary Association

05.3.Simple Association

The two interacting objects have no intrinsic relationship with other object. It is the weakest link between objects. It is a reference by which one object can interact with some other object.

Customer gets cash from cashier
Employee works for a company
Ali lives in a house
Ali drives a car





It is generally called as "**association**" instead of "**simple association**"

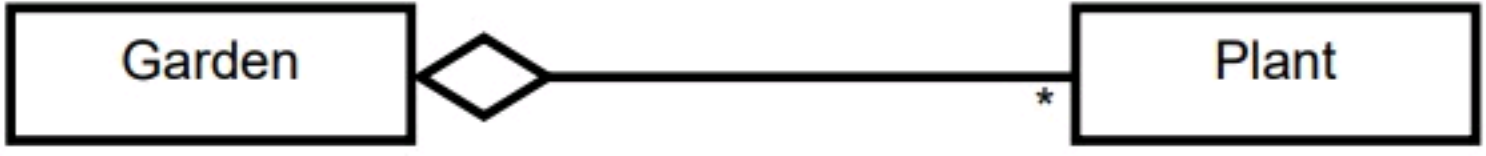
Composition is stronger relationship:
Composition is a stronger relationship, because
Composed object becomes a part of the composer
Composed object can't exist independently

Example I

Ali is made up of different body parts

They can't exist independent of Ali

Example – Aggregation



Aggregation is weaker relationship

Aggregation is weaker relationship, because

- Aggregate object is not a part of the container
- Aggregate object can exist independently

Composition is stronger relationship:
Composition is a stronger relationship, because
Composed object becomes a part of the composer
Composed object can't exist independently

Example I

Ali is made up of different body parts

They can't exist independent of Ali

Question # 10 of 10 (Start time: 09:43:29 AM, 18 November 2024)

Interaction of different objects in OO model is known as _____.

Select the correct option

○	Encapsulation
○	Abstraction
◉	Association
○	Inheritance

Question # 7 of 10 (Start time: 09:41:54 AM, 18 November 2024)

Which of the following can be the attribute of the Employee class?

Select the correct option

- ○ Roll Number
- ○ Course
- ◉ Salary
- ○ GPA

Question # 9 of 10 (Start time: 09:43:00 AM, 18 November 2024)

In classes which of the following is default access specifier?

Select the correct option

- ○ None of the given option
- ◉ Private
- ○ Public
- ○ Protected

Question # 4 of 10 (Start time: 09:40:35 AM, 18 November 2024)

Which problem arises due to multiple inheritance, when the parent classes are also derived from the grandparent class?

Select the correct option

- ○ Circle
- ◉ Diamond
- ○ Triangle
- ○ Loop

Question # 6 of 10 (Start time: 09:41:32 AM, 18 November 2024)

Which of the following concept deals with the security of data?

Select the correct option

- (●) Data Hiding
- ( ) Generalization
- ( ) Inheritance
- ( ) Polymorphism

Question # 8 of 10 (Start time: 09:42:31 AM, 18 November 2024)

Which of the following is the default access specifier for members of a class?

Select the correct option

- (●) private
- ( ) protected and public
- ( ) public
- ( ) protected and private

Question # 3 of 10 (Start time: 09:40:08 AM, 18 November 2024)

Car carries passengers.

Bus carries passengers.

Truck carries luggage.

Harvester harvests the crops.

Car, Bus, Harvester and Truck are derived from which class?

Select the correct option

○	Public Transport
○	Passenger Transport
◉	Vehicle
○	Navy Ships

Question # 2 of 5 (Start time: 04:48:31 PM, 21 November 2024)

Which of the following offers a programmer the facility of using a specific class object into other classes?

Select the correct option

- ○ Inheritance
- ○ Polymorphism
- ○ Composition
- ○ Abstraction

Question # 2 of 10 (Start time: 09:39:26 AM, 18 November 2024)

_____ is a concept to extract common behaviours by using Bottom to Top approach.

Select the correct option

- ○ Generalization
- ○ Sub-typing
- ○ Extension
- ○ Specialization

Question # 4 of 5 (Start time: 03:39:13 PM, 14 November 2024)

"Static data member is declared ___ the class, but they are defined ___ the class."

Choose the correct sequence of data member declaration and definition.

Select the correct option

○	Outside, Outside
○	Outside, Inside
○	Inside, Inside
◉	Inside, Outside

Question # 3 of 5 (Start time: 05:10:33 PM, 12 November 2024)

Which problem arises due to multiple inheritance, when the parent classes are also derived from the grandparent class?

Select the correct option

- ○ Loop
- ○ Circle
- ○ Triangle
- ◉ Diamond ✓

Question # 1 of 5 (Start time: 03:36:57 PM, 14 November 2024)

Which of the following best defines static data members of a class?

Select the correct option

- ○ Data member which is allocated for each object separately
- ○ Data member with global scope
- ○ Data member which is common to all the classes in a program
- ◉ Data member which is common to all the objects of a class

Following code is equivalent to which option.

```
class Shape
{
   string type;
};
```

Select the correct option

- [x] `class Shape { public: string type; };`
- [ ] `class Shape { private: string type; };`
- [ ] `class Shape { protected: string type; };`
- [ ] `class Shape public: { public: string type; };`

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Question # 4 of 5 (Start time: 05:11:02 PM, 12 November 2024)

In classes which of the following is default access specifier?

Select the correct option

- ○ None of the given option
- ○ Public
- ◉ Private Pg : 69
- ○ Protected

Question # 9 of 10 (Start time: 10:41:02 AM, 02 December 2024)

In composition _____ are called from composed objects to composing objects.

Select the correct option

○	Constructors
○	Pointers
◉	Destructors
○	Variables

Question # 5 of 10 (Start time: 10:36:27 AM, 02 December 2024)

Consider the following code and choose the correct **order of initialization** for the data members of the class.

```
class A {
int a,b,c;
public: A(): b(10), c(0), a(7){
}
};
```

Select the correct option

○	a,c,b
◉	c,a,b
○	a,b,c
○	b,a,c

Question # 4 of 10 (Start time: 10:35:59 AM, 02 December 2024)

The keyword "friend" should be placed in _____ :

Select the correct option

- Anywhere in program
- Function Declaration
- Function Definition
- Main Function

Friend Functions

Prototypes of friend functions appear in the class definition.
But friend functions are NOT member functions.

Friend Functions

Friend functions can be placed anywhere in the class without any effect
Access specifiers don't affect friend functions or classes

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 10 of 10 (Start time: 03:36:09 PM, 14 November 2024)

Which of the following concept is more close to encapsulation?

Select the correct option

- ○ Inheritance
- ◉ Information Hiding
- ○ Exception Handling
- ○ Polymorphism

Static Data Member

Definition

"A variable that is part of a class, yet is not part of any object of that class, is called static data member"

Static Data Member

They are shared by all instances (objects) of the class
They do not belong to any particular instance of a class

Class vs. Instance Variable

12.3. Static Member Function

Definition:

"The function that needs access to the members of a class, yet does not need to be invoked by a particular object, is called static member function"

- They are used to access static data members
- Access mechanism for static member functions is same as that of static data members
- They cannot access any non-static members

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 8 of 10 (Start time: 03:35:30 PM, 14 November 2024)

In OOP, which of the following feature is used to derive a class from another class?

Select the correct option

- (●) Inheritance
- ( ) Polymorphism
- ( ) Data hiding
- ( ) Encapsulation

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 7 of 10 (Start time: 03:34:47 PM, 14 November 2024)

Destructor is a function which has the same name as that of class, but starts with a _____ sign.

Select the correct option

- $
- ~
- #
- %

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 6 of 10 (Start time: 03:34:18 PM, 14 November 2024)

Which of the following method allows to reuse the characteristics of more than one parent class?

Select the correct option

- ○ Polymorphism
- ◉ Multiple Inheritance
- ○ Specialization
- ○ Single inheritance

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 5 of 10 (Start time: 03:33:55 PM, 14 November 2024)

Which of the following is a strong relationship?

Select the correct option

- (●) Composition
- ( ) Inheritance
- ( ) Association
- ( ) Polymorphism

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 4 of 10 (Start time: 03:33:28 PM, 14 November 2024)

Constructors have _____ return type.

Select the correct option

- ○ int
- ◉ no
- ○ char
- ○ void

CS304 - Object Oriented Programming (Quiz No. 1)

Question # 3 of 10 (Start time: 03:32:59 PM, 14 November 2024)

Through _____, Objects communicate with outer world.

Select the correct option

- ○ Polymorphism
- ◉ Interface
- ○ Encapsulation
- ○ Inheritance

CS304P - Object Oriented Programming (Practical) (Graded Quiz No. 4)

Question # 10 of 10 (Start time: 11:34:31 AM, 06 January 2025)

How can you define a class template in C++?

Select the correct option

- template<type T> class MyClass { ... };
- template<class T> MyClass { ... };
- template<name T> class MyClass { ... };
- template<typename T> class MyClass { ... };

CS304P - Object Oriented Programming (Practical) (Graded Quiz No. 4)

Question # 9 of 10 (Start time: 11:33:50 AM, 06 January 2025)

Which keyword is used to define a template in C++?

Select the correct option

- function
- template
- typename
- class

CS304P - Object Oriented Programming (Practical) (Graded Quiz No. 4)

Question # 3 of 10 (Start time: 11:25:04 AM, 06 January 2025)

A class with pure virtual function is called _____ class.

Select the correct option

- (●) abstract
- ( ) solid
- ( ) normal
- ( ) concrete

CS304P - Object Oriented Programming (Practical) (Graded Quiz No. 3)

Question # 3 of 10 (Start time: 01:33:46 PM, 02 January 2025)

In the case of private inheritance, public members of the base class will be _____ in the derived class.

Select the correct option

- Protected
- Hidden
- Private
- Public

CS304P - Object Oriented Programming (Practical) (Graded Quiz No. 3)

Question # 8 of 10 (Start time: 01:40:39 PM, 02 January 2025)

In the case of public inheritance, private members of the base class will be _____ in the derived class.

Select the correct option

○	Public
◉	Hidden
○	Protected
○	Private

```
#include<iostream>

using namespace std;


class House{

private:

int rooms;


public:

House() { cout<<"Entering the house"<<endl;}

House(int R) { rooms = R;}

~House() { cout<<"Leaving the house"<<endl;}

};

class Kitchen : public House

{ double size;

public:

Kitchen() : House() { cout<<"Entering the kitchen";}

};


int main()

{

Kitchen Obj;

return 0;

}
```

1

3

2

CS304P - Object Oriented Programming (Practical) (Lab Quiz No. 8)

Question # 5 of 5 (Start time: 03:40:07 PM, 04 January 2025)

In the case of protected inheritance, public members of the base class will be _____ in the derived class.

Select the correct option

○	Public
◉	Protected
○	Private
○	Hidden

CS304P - Object Oriented Programming (Practical) (Lab Quiz No. 8)

Question # 4 of 5 (Start time: 03:39:40 PM, 04 January 2025)

What is the name of Base class in the line below?

class Truck : public Vehicle

D B

Select the correct option

◉	Vehicle
○	None of the given options
○	Truck
○	Public

CS304P - Object Oriented Programming (Practical) (Graded Quiz No. 4)

Question # 5 of 10 (Start time: 11:27:02 AM, 06 January 2025)

Which of the following is the correct syntax for a function template in C++?

Select the correct option

○	template void func<class T>(T a);
○	func<class T>(T a);
●	template<class T> void func(T a);
○	template<type T> func(T a);

CS304P - Object Oriented Programming (Practical) (Lab Quiz No. 8)

Question # 3 of 5 (Start time: 03:38:21 PM, 04 January 2025)

Which of the following members of base class can be accessed in the derived class?

Select the correct option

- ○ Both Public and Private
- ◉ Both Protected and Public
- ○ All (Public, Protected, and Private)
- ○ Both Protected and Private

What will be the output of the following program?

```
#include<iostream>
using namespace std;
class FirstNumber
{ private:
      int  x;
public:
      int y;
FirstNumber () { x = 0; y = 10; }
};
class SecondNumber: public FirstNumber
{   int z;
    public:
        int w;
SecondNumber () : FirstNumber ()
{
      z = 20;
      w =  y + z;
      cout<<w;}
};
int main()
{
SecondNumber Obj;
return 0;
}
```

output

30

CS304P - Object Oriented Programming (Practical) (Lab Quiz No. 8)

Question # 1 of 5 (Start time: 03:34:24 PM, 04 January 2025)

Consider the code below,

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

class class2 : public class1 { };
```

Function func()1 of class1 is _____ in class2.

Select the correct option

○	Hidden
○	Protected
◉	Public
○	Private

CS304P - Object Oriented Programming (Practical) (Lab Quiz No. 9)

Question # 3 of 5 (Start time: 03:13:45 PM, 09 January 2025)

Which of the following is not the correct type of inheritance in C++?

Select the correct option

- [x] secret
- [ ] public
- [ ] protected
- [ ] private

CS304P - Object Oriented Programming (Practical) (Lab Quiz 10)

Question # 5 of 5 (Start time: 03:19:02 PM, 11 January 2025)

A class with pure virtual function is called _____ class.

Select the correct option

○	concrete
○	normal
○	solid
◉	abstract

CS304P - Object Oriented Programming (Practical) (Lab Quiz No. 9)

Question # 1 of 5 (Start time: 03:11:22 PM, 09 January 2025)

There are _____ types of inheritance in C++.

Select the correct option

- ○ 2
- ○ 4
- ○ 3
- ○ 1

CS304P - Object Oriented Programming (Practical) (Lab Quiz No. 9)

Question # 4 of 5 (Start time: 03:14:17 PM, 09 January 2025)

For the given class definition, which one is correct?

```
#include<iostream>
using namespace std;
class A{
int x,y;
public:
int Add(int a,int b){return a+b;}
int Add(int c){return c;}
};
```

Select the correct option

- ○ Function Add has an error
- ○ Function Add is overridden
- ◉ Function Add is overloaded
- ○ None of the given options

CS304P - Object Oriented Programming (Practical) (Lab Quiz No. 9)

Question # 5 of 5 (Start time: 03:15:45 PM, 09 January 2025)

```
class  A {
public:
int  Test(int x) {return x*x;}
int  Test(int x,int y) {return x*y;}
};
class  B : public  A {
public:
   int Test(int x) { return x*x*x;}
};
```

In the above class, the method Test is_____.

Select the correct option

- Overloaded
- None of the given options
- Both
- Overridden

CS304P - Object Oriented Programming (Practical) (Lab Quiz No. 9)

Question # 2 of 5 (Start time: 03:12:34 PM, 09 January 2025)

In case of public inheritance between Base class A and Derived class B, which of the folllowing data members of Base class will be hidden in Derived class?

Select the correct option

- (●) private
- ( ) public
- ( ) protected
- ( ) both public and private

CS304P - Object Oriented Programming (Practical) (Lab Quiz 10)

Question # 4 of 5 (Start time: 03:18:05 PM, 11 January 2025)

Suppose you have a function: void sum();

Choose correct syntax from the given options which will make this function pure virtual function.

Select the correct option

- (●) virtual void sum()=0;
- ( ) void sum()=0;
- ( ) void sum() virtual=0;
- ( ) sum()=0;

CS304P - Object Oriented Programming (Practical) (Lab Quiz 10)

Question # 3 of 5 (Start time: 03:17:21 PM, 11 January 2025)

virtual void print(); is an example of_____.

Select the correct option

○	pure virtual function
◉	virtual function
○	simple function
○	template function

CS304P - Object Oriented Programming (Practical) (Lab Quiz 10)

Question # 2 of 5 (Start time: 03:15:55 PM, 11 January 2025)

Virtual functions can be used in _____ ways.

Select the correct option

○	6
○	8
◉	2
○	0

- Virtual Functions can be used to when we want to inherit interface and implementation (Simple virtual functions) mean base class as well as derived class will have implementation.

```
virtual void draw();
```

- Just inherit interface (Pure Virtual functions) mean only derived classes will will have implementation base may not have implementation.

```
virtual void draw() = 0;
```

A function template can be parameterized to operate on different types of data types.

Declaration:

We write template keyword above any function make any function as template function, they can be declared in any one of the following ways,

```
template< class T >
void funName( T x );

// OR

template< typename T >
void funName( T x );

// OR

template< class T, class U, ... >
void funName( T x, U y, ... );
```

Note here T is typename of class name and we use this T instead of data type(s) for which we want our function to work as template.

CS304P - Object Oriented Programming (Practical) (Lab Quiz 10)

Question # 1 of 5 (Start time: 03:15:35 PM, 11 January 2025)

Which keyword is used to achieve polymorphism?

Select the correct option

- virtual
- poly
- polymorphism
- pure virtual

```
    Parent {
public:
    void Func1();
};
```

Function Overloading:
Two functions in same class with same name but different parameters and return type.

Function Overriding:
Two functions in two base derived classes

```
class Parent {
public:
    void Func1();
    void Func1(int);
};

class Child: public
    Parent {
public:
    void Func1();
};
```

```
class Parent {
public:
    void Func1();
    void Func1(int);
};

class Child: public
    Parent {
public:
    void Func1();
};
```

Overriding within the scope of single class is error due to duplicate declaration (two member functions with same prototype)

CS304P - Object Oriented Programming (Practical) (Graded Quiz No. 4)

Question # 1 of 10 (Start time: 11:23:47 AM, 06 January 2025)

What does a C++ template allow you to do?

Select the correct option

- (●) Write functions or classes that can operate with different data types
- ( ) Create new data types dynamically at runtime
- ( ) Define multiple main functions in a program
- ( ) None of the given