

# [OPPS]

## **B1 : What Is class in ObjectOriented Programming Language?**

--->A class is a collection of objects of a similar type.--->A class describes the structure of objects.---> once a class is defined,any number of objects can be created which belong to that class.---> class is a blueprint of the object.--->class is an implementation of the encapsulation concept of the OOP concept.--->class is nothing but one kind of structure of data-bind.class is a user- defined data type.

## **B2 What is an Object in Object Oriented Programming Language?**

--->objects are the basic run-time entities in an object-oriented system.--->the object is the variable or says the instance of the class.we can create as many instances of a class as we want.--->An instance is an object that has been created from an existing class.--->creating an object from an existing class is called instantiating the object.--->Each instance is a distinct copy of its class.--->A class is a blueprint or model on paper,and an object is a building based on that blueprint or model.--->meet,rajal,kevin are objects of student class.--->dove,duck,swan,sparrow are objects of birds class.--->for example,bank is class then HDFC,IDBI,PNB benks are the objects....

## **B3 What Is Difference Between Class And Interface?**

--->A class is a blueprint from which we can create objects that share the same configuration - properties and methods. --->An interface is a group of related properties and methods that describe an object, but neither provides implementation nor initialisation for them.....

## **B4 What Is Method Overloading in Object Oriented Programming Language?**


--->method overloading is performed within the same class.--->example of compile-time polymorphism.--->parameters must be differnt.--->it does not hide any method.--->the overloaded functions may have different return type.--->Nofacility of :: scope resolution operator to call the overloaded method....

## **B5 What IsData hiding inObject Oriented Programming Language?**

--->Data hiding is an object-oriented programming (OOP) technique specifically used to hide internal object details (i.e., data members).---> Data hiding guarantees exclusive data access to class members only and protects and maintains object integrity by preventing intended or unintended changes and intrusions.

## **B6 What are the differences between abstract classes and interfaces?**

Abstract Class	Interface
1. <i>abstract</i> keyword	1. <i>interface</i> keyword
2. Subclasses <i>extends</i> abstract class	2. Subclasses <i>implements</i> interfaces
3. Abstract class can have implemented methods and 0 or more abstract methods	3. Java 8 onwards, Interfaces can have default and static methods
4. We can extend only one abstract class	4. We can implement multiple interfaces



### B7 What are the Virtual Function in Object Oriented Programming?

--->Virtual, as the name implies, is something that exists in effect but not in reality.--->The concept of virtual function is the same as a function, but it does not really exist although it appears in needed places in a program.---> The object-oriented programming language C++ implements the concept of virtual function as a simple member function, like all member functions of the class.--->The functionality of virtual functions can be overridden in its derived classes. --->The programmer must pay attention not to confuse this concept with function overloading.---> Function overloading is a different concept and will be explained in later sections of this tutorial.---> Virtual function is a mechanism to implement the concept of polymorphism (the ability to give different meanings to one function).

### B8 What is Constructor in Object Oriented Programming ?

--->there are two ways to initialize data members in an object, first is to create a data function set...(), which will initialize data members and call it in the main() function using an object. function name(). the second way is a constructor.--->sometimes we are required to initialize data members of the class without calling member functions. that time we can use the concept of constructor.--->A constructor is a special member function of the class.--->The name of a constructor must be the name of the class.--->A constructor is used to initialize the values to the data member of the class.--->constructor have no return type, even we cannot write even void before the constructor.--->A constructor is called when an object is created. A constructor can't be called explicitly.--->A constructor can be placed in private, public, and protected. but once create a constructor in private or public, you can not create an object.--->Just like member functions, constructors can also be overloaded in a class.--->A constructor can be invoked called by its derived class....

### B9 What is Abstract class in Object Oriented Programming?

---> An abstract class is a class that is designed to be specifically used as a base class.---> An abstract class contains at least one pure virtual function. --->You declare a pure virtual function by using a pure specifier (= 0) in the declaration of a virtual member function in the class declaration.---> You cannot use an abstract class as a parameter type, a function return type, or the type of an explicit conversion, nor can you declare an object of an abstract class.....

### B10 What is Final Keyword in Object Oriented Programming?

--->The final keyword is a non-access modifier used for classes, attributes and methods, which makes them

non-changeable (impossible to inherit or override).---> The final keyword is useful when you want a variable to always store the same value, like PI (3.14159...). --->The final keyword is called a "modifier"....

### **B11 What is Pure Virtual function in Object Oriented Programming?**

--->A pure virtual function is a virtual function in C++ for which we need not to write any function definition and only we have to declare it. It is declared by assigning 0 in the declaration.---> An abstract class is a class in C++ which have at least one pure virtual function.

### **B12 What are Sealed Modifier in Object Oriented Programming?**

--->When applied to a class, the sealed modifier prevents other classes from inheriting from it. --->In the following example, class B inherits from class A , but no class can inherit from class B . --->You can also use the sealed modifier on a method or property that overrides a virtual method or property in a base class.--->sealed is a context-sensitive keyword for ref classes that indicates that a virtual member cannot be overridden, or that a type cannot be used as a base type.

### **B13 What is dynamic or runtime polymorphism in oops?**

--->In runtime polymorphism, the compiler resolves the object at run time and then it decides which function call should be associated with that object.---> It is also known as dynamic or late binding polymorphism. --->This type of polymorphism is executed through virtual functions and function overriding.

### **B14 What is Access Modifier in Object Oriented Programming ?**

--->The access modifiers of C++ are public, private, and protected. One of the main features of object-oriented programming languages such as C++ is data hiding. --->Data hiding refers to restricting access to data members of a class. --->This is to prevent other functions and classes from tampering with the class data.--->ccess modifiers (or access specifiers) are keywords in object-oriented languages that set the accessibility of classes, methods, and other members.---> Access modifiers are a specific part of programming language syntax used to facilitate the encapsulation of components. --->In C++, there are only three access modifiers.

### **B15 What is Friend Function inObject Oriented Programming?**

--->According to oops, it suggests that private members of a class cannot be accessed from outside the same class in which they are declared.--->but friend function is violating the rules of it.--->A friend function can be given a special grant to access private and protected members.--->A friend function of a class is defined outside that class scope but it has the right to access all private and protected members of the class.--->Friends functions are declared with the friend keyword.--->we declare a friend function using the friend keyword inside the body of the class. But while defining the friend function. It does not use either keyword friend or :: scope resolution operator....

### **B16 What is (method)Overriding inObject Oriented Programming?**

--->Method overriding is used when we want the method of the same name in both base and derived class.--->when we declare a method in a subclass that is already present in the base class is known as method overriding.--->method overriding is the example of polymorphism in oops which allows the programmer to create two methods with the same name and method signature in derived class.--->the overriding method has its specific implementation to an inherited method without even modifying the base class.--->In method overloading, only the name of two overloaded methods are the same but method signature means the number of argument or sequence of arguments or data types must be different while in method overriding ,method all things are the same like an argument list,data type,access modifier,etc.--->If we want to call the base class's override method then we can be

using:: scope resolution operator....

**B17 What is the role of mutable storage class specifier?**

--->The mutable storage class specifier is used only on a class data member to make it modifiable even though the member is part of an object declared as const.---> You cannot use the mutable specifier with names declared as static or const, or reference members.