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Oops cat 1

Q1. Differentiate between data abstraction and data encapsulation.

Abtraction is the method of hinding the unwanted information . whereas encapsulation in method to hide the data in a single entity or unit alone with a method to protect information from outside

Q2. Discuss the use of public, private and protected access specifiers and their visibility in the class.

1. public - members are accessible from outside the class. private - members cannot be accessed (or viewed) from outside the class. protected - members cannot be accessed from outside the class, however, they can be accessed in inherited classes.

Q3. Discuss default constructor and parameterized constructor with the help of an example in C++.

1. The parameterized constructors are the constructors having a specific number of argumentsto be passed.
2. A parameterized constructor is written explicitly by a programme
3. For Example: If we want to initialize an object with some values while declaring it, we can do it creating parameterized constructors.
4. Let suppose there is a class named Person with two data members name and age, we can initialize the data members while creating the objects like this:

Q4. Write down the use of destructor in C++.

1. A destructor is a special member function of a class that is called if an object of that class gets out of scope or when the delete expression is used on a pointer to that class's object. A destructor will have the same name as the class, but it will be prefixed with a tilde (), and it will not be able to return any value or take any parameters

Q5. What is the need of constructor? How it is different from the member function?

* + 1. **need of Constructor**. tutorial, question, answer, example, Java, JavaScript, SQL, C, Android, Interview, Quiz, ajax, html

1. 
2. Is there any difference between inline member function (function body inline) and other normal member function (function body in a separate .cpp file)? **There is absolutely no difference**. The only difference between the two is that the member inside the class is implicitly tagged as inline.

Q6. What is a static data member? How they are used in static functions? Explain with suitable illustrations.

1. In contrast, static data members are used to **sharing information among multiple objects of a class**. The Static Member Functions are those which are declared by using the Static in Front of the Member Function. It is possible to have static member functions in a class in the same way as static data members
2. Depletion of non- renewal resources
3. Renewal energy is not used to the desired level
4. Abnormal increase in population which is much higher than carrying capacity of environment.

Q7. Define class and objects.

1. A class is a **template** or blueprint from which objects are created. So, an object is the instance (result) of a class. An object is a real-world entity. An object is a runtime entity. The object is an entity which has state and behavior. The object is an instance of a class.

Q8. What do you mean by dynamic binding? How it is useful in OOP?

1. ✓ OOP was invented to deal with project scale. The idea is that procedural languages allow you to do only a single type of architecture — dog shed architectur…

Q9. Explain the use of friend function with the help of suitable example.

1. As discussed, we require friend functions whenever we have to access the private or protected members of a class. This is only the case when we do not want to use the objects of that class to access these private or protected members.
2. **Friend functions**of the class are granted permission to access private and protected members of the [class in C++](https://www.mygreatlearning.com/blog/class-in-c/).

Q10. What is the need of overloading operators and functions?

1. Overloaded operators are functions with special names: the keyword "operator" followed by the symbol for the operator being defined. Like any other function, an overloaded operator has a return type and a parameter list. Box operator+(const Box&); declares the addition operator that can be used to add two Box objects and returns final Box object. Most overloaded operators …
2. Usage example

Box operator+(const Box&);

Q11. How do we invoke constructor? Can we have more than one constructor in a class? If yes, explain the need for such a situation.

1. The constructor for the most derived class is invoked. The first thing a constructor does is call the**consctructor** for its superclasses. This process**continues until the constrcutor for java.lang.Object is called, as java.lang.Object is the base class for all objects in java.**
2. There can be multiple constructors in a class. However, the parameter list of the constructors should not be same. This is known as constructor overloading. A program that demonstrates this is given as follows

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1. Can we have more than one constructor in a class if yes **explain** **the** **need** **for** **such** **a** **situation**

Q12. Write down the example to overload unary and binary operators in C++.

### Code sample

Distance operator- () {

feet = -feet;

inches = -inches;

return Distance(feet, inches);

}...

1. For example, suppose we have two numbers, 5 and 6; and overload the binary (+) operator. So, the binary (+) operator adds the numbers 5 and 6 and returns 11. Furthermore, we can also perform subtraction, multiplication, and division operation to use the binary operator for various calculations. Syntax of the Binary Operator Overloading. Following is the Binary Operator …

Q13. State the use of scope resolution operator in C++.

1. It is used to access the hidden variables or member functions of a program.
2. It defines the member function outside of the class using the scope resolution.
3. It is used to access the static variable and static function of a class.
4. The scope resolution operator is used to override function in the Inheritance.

14 Compare and contrast the structured programming and object oriented programming.

1. The **main difference** between structured and object oriented programming is that **structured programming allows developing a program using a set of modules or functions, while object oriented programming allows constructing a program using a set of objects and their interactions**

Q15. What is a dynamic constructor? Explain with suitable example.

When allocation of memory is done dynamically using dynamic memory allocator [new](https://www.geeksforgeeks.org/new-and-delete-operators-in-cpp-for-dynamic-memory/) in a [constructor](https://www.geeksforgeeks.org/constructors-c/), it is known as **dynamic constructor**. By using this, we can dynamically initialize the objects.

Q17. Compare and Contrast late bin

ding and early binding.

1. The compiler performs a process called binding when an object is assigned to an object variable. The early binding (static binding) refers to compile time binding and late binding (dynamic binding) refers to runtime binding. Early Binding (Static binding)

. Q18What do you mean by implicit and explicit call of constructor? Explain with example

1. An implicit constructor call will always call the default constructor, whereas explicit constructor calls allow to chose the best constructor and passing of arguments into the
2. constructor. Wiki User

Q19. Write a C++ program to overload area() function to calculate area of shapes like triangle ,square, circle.

Write a C++ program to find Area of square,rectangle,circle and triangle using Function Overloading. Here’s a Simple C++ program to find Area using Fun