1)Why we need to use OOP ? Some major OOP languages ?

OOP is used because it’s an excellent way to model the way the real world works in a computer program.

Java, C++, C#, Python, R, PHP, Visual Basic.NET, JavaScript, Ruby

2 – Interface vs Abstract class ?

 Abstract class can have final, non-final, static and non-static variables. The interface has only static and final variables. Abstract class can provide the implementation of the interface. Interface can't provide the implementation of an abstract class.

3 – Why wee need equals and hashcode ? When to override ?

 verifies the equality of two objects. Its default implementation simply checks the object references of two objects to verify their equality

You must override hashCode() in every class that overrides equals(). Failure to do so will result in a violation of the general contract for Object.hashCode(), which will prevent your class from functioning properly in conjunction with all hash-based collections, including HashMap, HashSet, and Hashtable.

4 – Diamon problem in Java ? How to fix it?

To overcome the ambiguity and conflict we can use keyword virtual. This will help us to differentiate the functions with same name that came to last derived class in diamond problem.

5 – Why we need Garbagge Collector ? How does it run ?

Garbage collectors serve a vital role in our society by helping to manage waste, which if allowed to build up, could pose enormous health and environmental issues. We can use the Runtime. getRuntime(). gc() method

6 – Java ‘static’ keyword usage ?

The users can apply static keywords with variables, methods, blocks, and nested classes. The static keyword belongs to the class than an instance of the class.

7 – Immutability means ? Where, How and Why to use it ?

Immutable class in java means that once an object is created, we cannot change its content. In Java, all the wrapper classes (like Integer, Boolean, Byte, Short) and String class is immutable.

Immutability makes it easier to parallelize your program as there are no conflicts among objects.

8 – Composition and Aggregation means and differences ?

In composition, the dependent object cannot exist without the parent. Whereas, in aggregation, the dependent objects can exists without a parent. The composition is implemented in java by having non-static inner class but aggregation by having a static inner class or object references.

9 – Cohesion and Coupling means and differences ?

Cohesion is used to indicate a module's relative functional strength. Coupling is used to indicate the relative independence among the modules. In cohesion, the module focuses on a particular task. In coupling, a particular module is connected to other modules.

10 - Heap and Stack means and differences ?

Stack is a linear data structure whereas Heap is a hierarchical data structure.

Stack variables can't be resized whereas Heap variables can be resized. Stack memory is allocated in a contiguous block whereas Heap memory is allocated in any random order.

11 – Exception means ? Type of Exceptions ?

An exception is an event which causes the program to be unable to flow in its intended execution. There are three types of exception—the checked exception, the error and the runtime exception.

12 – How to summarize ‘clean code’ as short as possible ?

Clean code is code that is easy to understand and easy to change.

13 - What is the method of hiding in Java ?

When super class and sub class contains same method including parameters and if they are static. The method in the super class will be hidden by the one that is in the sub class.

14 - What is the difference between abstraction and polymorphism in Java ?

Abstraction refers to no specific detail of something, and Polymorphism refers to methods of different objects have the same, but do different task.

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