Core Java Concept Questions

**OOPS:**

1. **What is OOPS ?**

Ans: OOPS stands for object oriented programming language,it is a concept

1. **What is Encapsulation ?**

Ans: Encapsulation is binding attributes and methods in a class,we can access methods by object creation

1. **What is Inheritance ?**

Ans: Re-usability of existing variables and methods in sub class is called inheritance

1. **Is Java will support multiple inheritance through classes ?**

Ans: No, java will not support multiple inheritance through classes ,it will support through interfaces

1. **What is ambiguity with multiple inheritance in java ?**

Ans: In multiple inheritance, if two super classes having same method name the sub class will confuse to print that method

1. **What is Polymorphism ?**

Ans: Polymorphism means many forms.There are two types of polymorphism

a.compile-time polymorphism

b.Run-time polymorphism

1. **What is Overloading ?**

Ans: Overloading is a compile-time polymorphism. In overloading method name should be same, parameters should be different, return type may or may not be same it will occur in same class or super class

1. **What is Overriding ?**

Ans: Overriding is a run-time polymorphism. In overriding method name should be same, parameters should be same, return type should be same, it will occur in different classes through inheritance

1. **Difference between overloading and overriding ?**

Ans: Overloading is a compile-time polymorphism, overriding is a run-time polymorphism

1. **What is abstraction ?**

Ans: Abstraction is hiding unnecessary details and showing only relevant details to user for example car, in car we can only see some useful parts not all parts like engine

1. **What is Class ?**

Ans: Class is a blue print of object,it is not really exist, it is a group of similar objects

1. **What is Object ?**

Ans: Object is a instance of class, it is a real world entity, we can create many objects for same class

**Constructor:**

1. **What is constructor ?**

Ans: Constructor is a special method, it is used to initialize objects, constructor should have same name like class name, constructor should not have any return type not even void also

1. **How can we create constructor ?**

Ans: We can keep constructor name as class name, it does not have any return type, we can pass parameters to constructor to initialize objects

1. **How can we access constructor ?**

Ans: We can access constructor by creating object to it

1. **How many ways we can create constructor ?**

Ans: In two ways we can create constructor

1. Default constructor
2. Parameterized constructor
3. **Can we declare constructor as void ?**

Ans: No, we can not declare constructor as void if, we declare as void it consider as normal method only

1. **What is this keyword in constructor ?**

Ans: this keyword is used in two ways, it is used to access instance variables and used to call other constructors with in the same class

1. **What is super keyword in constructor ?**

Ans: super keyword is used in two ways, it is used to access super class variables ,methods and is used to call super class constructor

1. **What is copy constructor ?**

Ans: copy constructor is a constructor, in which we pass objects as arguments

1. **Is constructors are overloaded ?**

Ans: Yes, constructors are always overloaded.we can make many constructors with different parameters

**Static:**

1. **What is static ?**

Ans: Static is a keyword we can declare static as variables and methods

1. **How can we access static variables and methods ?**

Ans: We can access static variables and methods directly through classname.variablename, classname.methodname

1. **Can we access static methods and variables in static methods ?**

Ans: Yes, we can access static methods and static variables in static methods

1. **Can we access non-static methods and non-static variables in static methods ? If yes why ?**

Ans: Yes, we can not access non-static methods and non-static variables in static methods because, static variables and static methods are initialized at the compile-time only but, non-static methods and variables are initialized at the run-time.So, we can not access them

1. **Can we access static methods and static variables in non-static methods ?**

Ans: Yes, we can access static methods and static variables in non-static methods

1. **What is static block ?**

Ans: Static block is executed when classes are loaded into jvm only, it is used for database connection or network connection

1. **What are the uses of static keyword ?**

Ans: Static keyword is used for memory management, and when we change the value of variable it will change globally, static variables are not belongs to object they are belongs to class

**Final:**

1. **What is final keyword ?**

Ans: Final is a keyword, we can declare variables, methods and classes are final

1. **Can we modify final variable ?**

Ans: No, we can not modify final variables

1. **Can we override the final method ?**

Ans: No,we can not override the final method

1. **Can we inherit the final class ?**

Ans: No, we can not inherit the final class but,we can use them in other classes through the object creation

1. **Can we initialize final variables while constructor calling ?**

Ans: Yes, we can initialize final variables while constructor calling

**Strings:**

1. **What is string ?**

Ans: String is a sequence of characters, strings are immutable

1. **Write key features of String ?**

Ans: Strings are immutable, string is final class, string has methods, and string is non-synchronized

1. **Why strings are immutable ?**

Ans: Once we declare a string it is a constant if, we trying to modify the string object it will create the another memory location, the existing object is eligible for garbage collection

1. **In How many ways we can make strings ?**

Ans: In two ways we can make strings

1. Using string literals
2. Using new keyword
3. **What is the difference between equals() and “==”in strings ?**

Ans: equals() method is used to compare content of two strings

“==” is used to compare hash code of two strings

1. **Write some string methods ?**

Ans: String methods are toUppercase(), toLowerCase(), strip(), trim(), length(), indexOf(), and charAt()

1. **What is StringBuffer ?**

Ans: Stringbuffer is a sequence of characters, it is mutable, we can modify the string

1. **Write key features of stringbuffer ?**

Ans: Stringbuffer is mutable, it is final class, it have methods, it is synchronized

1. **Write some stringbuffer methods ?**

Ans: stringbuffer methods are append(), insert(), delete(), replace(), reverse(), length() and capacity()

1. **What is StringBuilder ?**

Ans: Stringbuilder is a sequence of characters, stringbuilder is mutable

1. **Write key features of stringbuilder ?**

Ans: stringbuilder is mutable, it is final class,it having methods, it is non-synchronized

1. **Write some stringbuilder methods?**

Ans: stringbuilder is mutable, it is final class, it having methods, and it is synchronized

1. **In which version stringbuilder is introduced ?**

Ans: stringbuilder is introduced in java 1.5 version

1. **What is the package name of string class?**

Ans: Java.lang is the package of string class

1. **What is string pool ?**

Ans: string pool is a area in a heap memory which is used to store string literals in java

1. **What is toString() method ?**

Ans: toString() method is used to know object informtion and it is also used to convert into string objects, if we print the object by defaultly the toString() method is invoked

**Interfaces:**

1. **What is Interface ?**

Ans: Interface is a keyword, we can achieve hundred percent abstraction through interfaces

1. **How can we declare methods in Interfaces ?**

Ans: We can declare only methods signature not implementation in interfaces

1. **What is the default syntax for methods in interfaces ?**

Ans: Default syntax for methods are abstract

1. **What is the default syntax for variables in java ?**

Ans: Default syntax for interface variables is public static final

1. **Why we have to override all interface methods in sub class ?**

Ans: We have to override all interface methods, otherwise it will show compile-time error

1. **Can we create object for Interfaces ?**

Ans: No, we can not create object for interfaces, we can create object reference to interface with object reference we can only access interface methods

1. **Will java support multiple inheritance ?**

Ans: Java will support multiple inheritance through interfaces

1. **Can one class can implement more than one interface ?**

Ans: Yes, one class can implement more than one interface, java will support multiple inheritance through interfaces

1. **Can interface extends other interface ?**

Ans: Yes, interface can extend other interface

1. **What is marker interface ?**

Ans: If interface has zero methods is called marker interface

**Abstract class:**

1. **What is abstract class ?**

Ans: Abstract is a keyword we can declare abstract class using abstract keyword

1. **What type of methods should abstract class contain ?**

Ans: Abstract class contain abstract methods and concrete methods

1. **Why we should override all abstract class methods in sub class ?**

Ans: we should override all abstract class methods in sub class otherwise it will give compile-time error

1. **What we have to do if not override all abstract methods in sub class ?**

Ans: If we not override all abstract methods in sub class , we have to make that class abstract

1. **Can we create abstract class with zero abstract methods ?**

Ans: Yes, we can create abstract class with zero methods, for security purpose we can make our class abstract

1. **Can we create object for abstract class ?**

Ans: No, we can not create object for abstract class but, we can create object reference to it

1. **Can we create constructor for abstract class ?**

Ans: Yes, we can create constructor for abstract class

1. **How can we access abstract class constructor ?**

Ans: we can access abstract class constructor by creating object to it’s sub class