Interview Questions

1. What is class?

- **Class is blue print of object.**
- **Class is collection of data members and member function.**
- **Class is a logical entities that define blueprint from which object are created.**

2. What do you mean by inheritance?

- **Inheritance is allowing us to reuse the code.**
- **Inheritance allows us to create the classes that are built upon existing classes, to specify new implementation while maintaining the same behavior.**
- **Inheritance in which one object acquires the all the properties and behaviors of parent object.**

3. What is inheritance?

- **The capability of a class to derive properties and characteristics from another class is called Inheritance.**
- **The class that inherits properties from another class is called Sub class or Derived Class.**

4. What are the types of inheritance?

- **Single Inheritance**
- **Multiple Inheritance**
- **Multi-Level Inheritance**
- **Hierarchical Inheritance**
- **Hybrid Inheritance.**

5. What is use of static keyword?

- **The static keyword in Java is used to share the same variable or method of a given class.**
- **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.**

6. What do you mean by constructor?

- **A constructor in Java is a special method that is used to initialize objects. The constructor is called when an object of a class is created.**
- **It can be used to set initial values for object attributes**

7. Tell me the type of constructor.

- **Default Constructor.**
- **Parameterized Constructor.**
- **Copy Constructor.**
- **Static Constructor.**
- **Private Constructor**

8. What are the different ways to creating object in java?

- **Using new keyword**
- **Using new instance**
- **Using clone() method**
- **Using deserialization**
- **Using newInstance() method of Constructor class**

9. What is the use of instaceof operator?

- **Instanceof operator is used to test whether the object is an instance of the specified type (class or subclass or interface).**
- **It is also known as type comparison operator because it compares the instance with type. It returns either true or false**

10. What are the check and uncheck exception?

- A checked exception must be handled either by re-throwing or with a try catch block, a runtime isn't required to be handled.
- An unchecked exception is a programming error and are fatal, whereas a checked exception is an exception condition within your codes logic and can be recovered or retried from.

11. What are the different types of checked exceptions in java?

- SQLException.
- ClassNotFoundException.
- InvocationTargetException.
- NullPointerException.
- ArrayIndexOutofBound.
- IllegalStateException.
- NumberFormatException.

12. What are the different types of unchecked exceptions?

- ArithmeticException.
- NullPointerException.
- ArrayIndexOutOfBoundsException.
- NumberFormatException.
- InputMismatchException.
- IllegalStateException.
- MissingResourceException.
- NoSuchElementException

13. Explain the use of throws exception?

- The Java throws keyword is used to declare an exception.
- It gives an information to the programmer that there may occur an exception. So, it is better for the programmer to provide the exception handling code so that the normal flow of the program can be maintained.

14. How to create user defined exception?

- **User Defined Exception or custom exception is creating your own exception class and throws that exception using 'throw' keyword.**
- **Example:**

```
Class MyException throw Exception {
        //Exception handle here..
}
Class Example {
        try {
                throw new MyException();
        }
        catch(MyException me){}
}
```

15. Can you explain finally keyword?

- **The finally keyword is used to create a block of code that follows a try block.**
- **A finally block of code always executes, whether or not an exception has occurred.**
- **Using a finally block allows you to run any cleanup-type statements that you just wish to execute, despite what happens within the protected code**

16. What is default value of static keyword?

- **Zero**

17. What is interface and its use?

- **Within the Java programming language, an interface is a type, just as a class is a type. Like a class, an interface defines methods. Unlike a class, an interface never implements methods; instead, classes that implement the interface implement the methods defined by the interface. A class can implement multiple interfaces.**
- **USE :-**
- **Capturing similarities among unrelated classes without artificially forcing a class relationship**
- **Declaring methods that one or more classes are expected to implement**
- **Revealing an object's programming interface without revealing its class**
- **Modelling multiple inheritance, a feature that some object-oriented languages support that allows a class to have more than one superclass.**

18. What are the marker interfaces? Can use list out some marker interface?

- **A marker interface is an interface that has no methods or constants inside it.**
- **It provides run-time type information about objects, so the compiler and JVM have additional information about the object.**
- **A marker interface is also called a tagging interface.**
- **Marker interface are :**
  1. **Serializable**
  2. **Cloneable**
  3. **Remote.**

---

19. What is wrapper object? List out some Wrapper Object.

- **Wrapper Class will convert primitive data types into objects. The objects are necessary if we wish to modify the arguments passed into the method (because primitive types are passed by value).**

- **The classes in java.util package handles only objects and hence wrapper classes help in this case also.**
- **Data structures in the Collection framework such as ArrayList and Vector store only the objects (reference types) and not the primitive types.**
- **The object is needed to support synchronization in multithreading.**
- **Wrapper Object :**
  1. **Integer**
  2. **Long**
  3. **Float**
  4. **Double**

---

20. What Is Autoboxing and Unboxing?

- **Autoboxing is the automatic conversion that the Java compiler makes between the primitive types and their corresponding object wrapper classes.**
- **If the conversion goes the other way, this is called unboxing.**

---

21. Which is cosmic superclass for the Java super classes?

- **Object class is the cosmic superclass in Java. The class belongs to java.lang package**.

22. What are the methods of object super class?

- **public final void notify()**
- **public final void notifyAll()**
- **public final void wait()**
- **public final void wait(long timeout)**
- **public final void wait(long timeout, int nanos)**

23. What is the use of this keyword?

- **The this keyword refers to the current object in a method or constructor.**
- **The most common use of the this keyword is to eliminate the confusion between class attributes and parameters with the same name.**

24. What is the use of super keyword?

- **The super keyword refers to superclass (parent) objects.**
- **It is used to call superclass methods, and to access the superclass constructor.**

25. What is serialization? How to achieve it.

- **Serialization is the conversion of the state of an object into a byte stream.**
- **The serialization process is instance-independent; for example, we can serialize objects on one platform and deserialize them on another. Classes that are eligible for serialization need to implement a special marker interface, *Serializable.***
- **For serializing the object, we call the writeObject() method of ObjectOutputStream class.**

26. What is the use of transient keyword?

- **Transient is a variables modifier used in serialization.**
- **At the time of serialization, if we don't want to save value of a particular variable in a file, then we use transient keyword.**
- **When JVM comes across transient keyword, it ignores original value of the variable and save default value of that variable data type.**

---

27. What is shallow cloning? How we can achieve it?

- **It is the process of creating a clone of an object by instantiating a new instance of the same type as original object and copying the non-static members of the existing object to the clone.**
- **A shallow copy can be made by simply copying the reference.**
- **Book b1= new Book()**
  Book b2 =b1;

---

28. What are the properties of HashSet?

- **Objects that you insert in HashSet are not guaranteed to be inserted in the same order.**
- **Objects are inserted based on their hash code.**
- **NULL elements are allowed in HashSet.**
- **HashSet also implements Serializable and Cloneable interfaces.**

---

29. Explain what is comparable and comparator interface?

- **Comparable :-**
  1. **It provides a single sorting sequence. In other words, we can sort the collection on the basis of a single element such as id, name, and price.**
  2. **Comparable affects the original class, i.e., the actual class is modified.**
  3. **Comparable provides compareTo() method to sort elements.**
- **Comparator :-**
  1. **It provides multiple sorting sequences. In other words, we can sort the collection on the basis of multiple elements such as id, name, and price etc.**
  2. **Comparator provides compare() method to sort elements.**

---

30. How we can convert array to list and vice versa?

- **The following way we can create array to list :-**

```
int[] myArray = {76, 23, 91, 45, 21, 82};
List<Integer> myList = new ArrayList<>();
for (int num:myArray) {
myList.add(num);
}
System.out.println("List:"+myList);
```

---

31. How to achieve inheritance in Java?

- **The following way we can achieve inheritance,**

```
class SubClass extends ParentClass

{

        //DataMembers;

        //Methods;

}
```

---

32. Which collection provides the sorted collection?

- **SortedSet collection provides the sorted collection**
