

Core Java Interview Questions and Answers

1. What is java?

- Java is a simple and most widely used programming language.
- Java is fast, reliable and secure.

2. Why are we go for java?

- Freeware and opensource
- It is platform independent i.e program written in one operating system is capable of running in all other operating systems due to bytecode concept.
- It runs multiple application at a time.

3. What are the main features of java?

- Java has more features.

1. Platform independent
2. Open source
3. Multithreading
4. More secure
5. Portable

4. What is platform independent?

- During the compilation the java program is converted into byte code (not machine specific),
- Bytecode can be run by jvm of any platform.
- So code developed in one platform is capable of running in all other platform.

5. What is mean by Open Source?

- A program in which source code is available to the general public for use and/or modification from its original design at free of cost is called open source.

6. What are IDE/tools available in market for java?

- Notepad
- Netbeans
- Eclipse

- JDeveloper(oracle)
- RAD(IBM)

7. What are difference between JDK/JVM/JRE ?

JDK :

- Java Development Kit.
- If we want to create any applications in java JDK have to be installed in our system.
- JDK versions: 1.0 to 1.14.

JRE :

- Java Runtime Environment.
- It is a pre-defined class files (i.e.) library files.

JVM :

- Java Virtual Machine.
- It is mainly used to allocate the memory and compiling.

8. What is mean by oops ?

- OOPS is Object Oriented Programming Structure.
- OOPS is a method of implementation in which programs are organised as collection of objects, class and methods.
- Example: greenTechnology

9. What are the coding Standard used in java ?

- Pascal notation: Every word's first letter, must be a capital letter
Example: GreenTechnology
- Camel notation: First word's first letter should be a small letter, all the other succeeding word's first letter should be a capital letter.
- Example: greenTechnology

10. What is mean by class, method, object ?

Class :

- Class is a collection of objects and methods
- Class contains attributes (variables and methods) that are common to all the objects created in a class.

Method:

- Method defines the set of action to be performed.

Object:

- Object is the run time memory allocation.
- Using object we call any methods.

11. What is mean by Encapsulation?

- It is the structure of creating folders.
- It wraps the data and code acting on data together in to a single unit.
- Example of encapsulation is POJO class.
- It is otherwise called Data hiding.

12. What are the datatypes used in java?

- byte
- short
- int
- long
- float
- double
- boolean
- char
- String

13. What is byte size and range of int datatypes?

- Size of byte is 1 byte (8 bit)
- Range formula = $[-2^{(n-1)} \text{ to } [(2^{(n-1)}-1)]$ for int $n=32$

14. What is mean by Wrapper class?

- Classes of data types is called wrapper class.

- It is used to convert any data type into an object.
- All classes and wrapper classes default value is null.

15. What is the main use of Scanner class?

- To get the inputs from the user at the run time.

16. What are the methods available in Scanner Class?

- nextByte();
- nextShort();
- nextInt();
- nextLong();
- nextFloat();
- nextDouble();
- next().charAt(0);
- next();
- nextLine();
- nextBoolean(),

17. What is mean by inheritance?

- Accessing one class Properties in another class without multiple object creation.
- It avoids time and memory wastage.
- It ensures code reusability.

18. What are the ways to access the methods /data from another class?

- We can access the another class methods either by creating object or using extends keyword.

19. What is mean by polymorphism?

- Poly-many.
- Morphism-forms.
- Taking more than one forms is called polymorphism or one task implemented in many ways.

20. What are the difference between method overloading and overriding?

Method overloading(static binding/compile time polymorphism): -----

When we have multiple methods with same method name but differs only based on its datatype, datatype count and order.

- Class-name
- Method-same
- Argument-differ based on datatype, order, number

Method overriding(dynamic binding/run time polymorphism):

When you are not satisfied with the logic of your super class method, you can create the same method(with exact same method name) in your sub-class and you can write your required business logic. When you create object for sub-class, sub class method only will get executed. so here child class method overriding parent class method.

- Class name-differ(using extends)
- Method-same
- Argument-same

21. What are the types of inheritance?

- Single Inheritance
- Multilevel Inheritance
- Multiple Inheritance
- Hybrid Inheritance:
- Hierarchical Inheritance

22. Why multiple inheritance is not supported in java?

Multiple inheritance:

- More than one parent class directly supporting into same child class.
- Multiple inheritance not supported in java due to Compilation problem and priority problem.

23. What are the difference between Multiple and Multilevel inheritance?

Multiple inheritance:

- More than one parent class directly supporting into same child class.
- Multiple inheritance not supported in java due to Compilation problem and priority problem.

- We have achieve multiple inheritance in java through interface.

Multi-level inheritance:

- More than one parent class supporting child class in tree level structure.
- It is supported in java.

24. What is mean by access specifier?

- It defines the scope or level of access for variables, methods and classes.

25. What are the difference between public and protected ?

Public:

- It is global level access (same package + different package).

Protected:

- can access Inside package (object creation + extends)

26. What is mean by Abstraction ?

- Hiding the implementation part or business logic is called abstraction.

27. What are the types of Abstraction ?

1. Partially abstraction (using abstract class).
2. Fully abstraction (using interface).

28. Can we create Object for Abstract class ?

- No, we cant create object for abstract class.

29. What is mean by Interface ?

- It will support only abstract method (without business logic), won't support non abstract method (method with business logic).
- In interface "public abstract" is default.

- using "implements" keyword we can implement the interface in a class where we can write the business logic for all unimplemented methods.

30. What are the difference between Abstract and Interface?

Abstract class:

- Using Abstract class, we can achieve partial abstraction.
- It support both abstract method and non-abstract method.
- using "extends" keyword you can inherit an abstract class.
- For any abstract method we need to mention "public abstract".

Interface:

- Using interface, we can achieve full abstraction.
- It supports only abstract method.
- It is using "implements" keyword.
- "public Abstract" is default, no need to mention it explicitly.

31. What is mean by String?

- Collection of characters or words enclosed within double quotes is called as String.
- String is a class in java.
- String is index based.
- Example : "greentechnology".

32. What are the method available in string?

- equals();
- equalsIgnoreCase();
- contains();
- split();
- toUpperCase();
- toLowerCase();
- substring();
- isEmpty();
- identifyHashCode();

- startsWith(),
- endsWith(),
- CompareTo();
- charAt();
- indexOf();
- lastIndexOf();
- replace()

33. What is mean by constructor?

- Constructor is a special method which is called by default when object is created for that particular class (implicit call)
- Class name and onstructor name must be same.
- It doesn't have any return type.
- It supports method overloading but won't support method overriding.
- purpose of constructor. it is used to initialise the values to variables.

34. Explain the types of constructor?

- Parameterized constructor
- Non parameterized constructor

35. Do constructors have any return type?

- No, constructor can't have any return type.

36. Write a syntax for creating constructor?

```
Access specifier classname(){
}
```

37. What are the rules for defining a constructor?

- Class name and constructor name must be same.
- It should not have any return type.

38. Why a return type is not allowed for constructor?

- Class name and constructor name must be same.
- It should not have any return type.
- Its return value is opaque to the user so cant mention it.
- Replicte constructor is not inecty catiuy code, it called by semtory allocation. and object initialisation in the run time.
- Its return value is opaque to the user so cant mention it,

39. Can we declare constructor as 'private'?

- Yes, we can declare constructor as private.

40. Why a compiler given constructor is called as default constructor?

- If we didn't create a constructor explicitly it will take the default constructor.

41. What is constructor chaining and how can it be achieved in Java?

- The process of calling one constructor from another constructor with respect to current object is called constructor chaining.
- By using `this()` and `super()` methods we can achieve constructor chaining.

42. What are the difference between `this()` and `super()`?

- `this()` is used to call class level constructor.
- `super()` is used to call the parent class constructor.

43. What is the super class of all java?

- Object is the super class of all classes in java.

44. What are the types of variable?

- Local level variable.
- Global/Class level variable.
- Static variable.
- Final variable.

45. What is meant by local variable, instance variable, class/static variable?

- Static Variable: It is shared by all the objects in the class.
- Local Variable: A variable declared inside a method/block. Level of access: only inside the block.
- Class variable: A variable declared outside all methods but inside class. Level of access: is only with in object.

46. What is mean by static keyword in java?

- The static keyword is mainly used for memory management.
- It is used to share the same variable or method by objects of given class.

47. Can we override static method in java?

- No, we cannot.

- No, we can't override the static method because it is part of a class rather than an object.

48. Can we overload static method in java?

- Yes, we can overload the static method in java.

49. What is mean by static variable?

- When a variable is declared as static, then a single copy of variable is created and shared among all object at class level.
- Static variable are essentially global variable.
- All the instance of the class share the same static variable.

50. What is mean by static method?

- When a method is declared as static, we need not create object to call the particular method. We can call as Classname.methodname().
- Static method in java belong to the class (not to an object).
- They use no instance variables and will usually take the input from the parameters and perform action on it, then return some result.

51. What is mean by final keyword and what's happen when we declare final as in class, method, variable?

- Final is a non access modifier applicable to a variable, method or a class.
- When a variable is declared with final keyword, its value can't be modified.
- When a method is declared as final we can prevent method overriding.
- When a class is declared as final we can prevent inheritance.

52. What is difference between final and finally keyword?

Final:

- Final variable can't be modified.
- Final method can't be overridden.
- Final class can't be inherited,

Finally:

- Finally block is used to execute important code such as closing the file, etc. It is always executed whether an exception is handled or not.

- Code given inside finally block will always get executed whether exception occurs or not.

53. Where local, static and class variables stores in JVM?

- Static variables are stored in the permGen section of heap memory.
- Local variables are stored in stack.
- Class variables are stored in heap memory.

54. What is Exception?

- Exception is an unexpected event which when occurs in a program, your program will terminate abnormally.
- We can avoid this abnormal termination using exception handling mechanisms(try, catch, finally, throw, throws).

55. Explain about types of Exception?

- Unchecked exception (Run time exception)
- Checked exception (Compile time exception)

56. What are the difference between checked exception and unchecked exception?

Unchecked exception:

- It will occur at the Run time.

57. Checked exception:

- Checked exception will occur at the Compile time.

57. What is the super class for Exception and Error?

- Throwable
- Exception

58. Can we have try block without catch block?

- Yes, we can have try block without catch block. But in that case finally block must be present. (There will be no syntax error)
- Possible but we will not able to handle the exception without catch block.

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