Core Java Interview Q&A; with Real-Life Examples

1. What is Java?

■ Java is an object-oriented, platform-independent language.

■ *Example: Like English language → you can speak anywhere (platform independent).*

2. What is JVM?

■ JVM runs Java bytecode.

■ *Example: Like a translator, converts one language to another.*

3. What is JDK and JRE?

■ JDK = development kit, JRE = runtime environment for running Java programs.

■ *Example: JDK = kitchen with tools, JRE = only food to eat.*

4. What are OOPs concepts?

■ Encapsulation, Inheritance, Polymorphism, Abstraction.

■ *Example: Like real world objects – Car (Encapsulation), Father-Son (Inheritance).*

5. What is Inheritance?

■ One class acquires properties of another.

■ *Example: A child inherits qualities from parents.*

6. What is Polymorphism?

■ One method behaving in different ways.

■ *Example: A person can be son, employee, friend (different roles).*

7. What is Encapsulation?

■ Wrapping data & methods together.

■ *Example: Medicine capsule keeps drug inside.*

8. What is Abstraction?

■ Hiding implementation details.

■ *Example: You drive a car without knowing engine mechanics.*

9. What is Constructor?

■ Special method to initialize an object.

■ *Example: When you buy a phone, it comes with default settings.*

10. Difference between == and equals()?

■ == compares reference, equals() compares content.

■ *Example: Two different cups with same coffee inside.*

11. What is final keyword?

■ Used for constants or to stop overriding.

■ *Example: Aadhaar number cannot be changed.*

12. What is static keyword?

■ Belongs to class, not object.

■ *Example: School name is same for all students.*

13. What is this keyword?

■ Refers to current object of the class.

■ *Example: A person saying 'myself' to refer to own identity.*

14. What is super keyword?
■ Used to call parent class constructor/method.

■ *Example: Child calling parent for help.*

15. What is method overloading?
■ Same method name, different parameter list.

■ *Example: ATM machine can take card or UPI.*

16. What is method overriding?
■ Subclass changes parent method.

■ *Example: Dog barks differently than general animal sound.*

17. What is interface?
■ Collection of abstract methods, used for multiple inheritance.

■ *Example: A remote has only button rules, actual TV implements them.*

18. What is abstract class?
■ Class with abstract (unimplemented) and concrete methods.

■ *Example: Vehicle is abstract, Car/Bike are concrete.*

19. What is package?
■ Collection of classes and interfaces, used to organize code.

■ *Example: Folder in computer storing files together.*

20. Difference between ArrayList and LinkedList?
■ ArrayList is faster for search, LinkedList is faster for insert/delete.

■ *Example: ArrayList like bookshelf, LinkedList like chain of boxes.*

21. What is Object class?
■ Parent class of all Java classes.

■ *Example: Like root ancestor in a family tree.*

22. What is String in Java?
■ String is an immutable sequence of characters.

■ *Example: Once written on paper, cannot change directly.*

23. Difference between String, StringBuilder, StringBuffer?
■ String = immutable, StringBuilder = mutable & not thread-safe, StringBuffer = mutable & thread-safe.

■ *Example: String = permanent marker, StringBuilder = pencil, StringBuffer = pencil but safe in locker.*

24. What is exception?
■ An event that disrupts program flow.

■ *Example: ATM shows error if no money.*

25. Checked vs Unchecked exceptions?
■ Checked handled at compile time, unchecked at runtime.

■ *Example: Checked = exam timetable known earlier, unchecked = sudden accident.*

26. What is try-catch-finally?
■ Used to handle exceptions, finally always executes.

■ *Example: Train may delay (catch), but platform will close at night (finally).*

27. What is throw and throws?
■ throw explicitly throws exception, throws declares exceptions.

■ *Example: Throw = throwing ball, Throws = warning before throwing.*

28. What is garbage collection?
■ JVM removes unused objects from memory.

■ *Example: Dustbin collects waste automatically.*

29. What are Wrapper classes?
■ Convert primitives into objects.

■ *Example: Gift wrapping turns a simple item into present.*

30. What is autoboxing and unboxing?
■ Autoboxing = primitive to object, Unboxing = object to primitive.

■ *Example: Putting pen inside box and removing back.*

31. What is Multithreading?
■ Running multiple tasks together.

■ *Example: Talking on phone while cooking food.*

32. Difference between process and thread?
■ Process = independent program, Thread = lightweight sub-part.

■ *Example: Process = restaurant, Thread = waiters inside it.*

33. What is synchronization?
■ Controls multiple threads accessing resource.

■ *Example: One person at a time using ATM.*

34. What is volatile keyword?
■ Always read value from main memory.

■ *Example: Live cricket score from server, not old cache.*

35. What is transient keyword?
■ Prevents variable from being serialized.

■ *Example: Temporary marker not written in report.*

36. What is serialization?
■ Convert object into byte stream.

■ *Example: Sending parcel through courier.*

37. What is deserialization?
■ Convert byte stream back into object.

■ *Example: Receiving parcel and opening it.*

38. What is cloning in Java?
■ Creating exact copy of object.

■ *Example: Photocopy of document.*

39. What is marker interface?
■ Interface without methods (e.g., Serializable).

■ *Example: VIP badge → just marks special, no actions.*

40. Difference between Array and ArrayList?
■ Array = fixed size, ArrayList = dynamic size.

■ *Example: Array = fixed-size box, ArrayList = expandable bag.*