

**J2SE: [Core Java]:****1. Introduction:**

1. Java History
2. Differences between java and others
3. Java Features
4. Java Naming Conventions
5. Java Programming Format

**2. First Java Application Development:**

1. Java Installation
2. Editor
3. Java Application and Java File Saving.
4. Compile Java File
5. Execute Java Applications.

**3. Language Fundamentals:**

1. Tokens
2. Identifiers
3. Literals
4. Key Words /Reserved Words
5. Operators
6. Data Types and Type casting
7. Java Statements
8. Arrays

**4. OOPS:**

1. Types of Programming Languages
2. Object Oriented Features
3. Object Based PL VS Object Oriented PL
4. Class syntax
5. Method Syntax
6. Var-arg method.
7. Accessor Methods VS Mutator Methods
8. Syntax to create an object
9. Immutable Objects VS Mutable Objects
10. Object Vs Instance
11. Constructors
12. Instance Context
13. This keywords
14. Static keyword
15. Main () method
16. Factory Method
17. Singleton classes and Doubleton classes
18. Final Keyword
19. Enum keyword
20. Relationships in JAVA
21. Associations in Java
22. Inheritance and Types of inheritances
23. Static flow in inheritance
24. Instance flow in inheritance
25. Super keyword
26. Class level type casting
27. Poly Morphism
28. Method overriding
29. Abstract Methods Vs Concrete Methods
30. Abstract class Vs concrete Class
31. Class Vs Abstract class Vs interface
32. "Instance of" operator
33. What is Adapter class?
34. What is marker interface?
35. Object Cloning
36. JAVA8 features in interfaces

**5. Inner classes:**

1. Member Inner class
2. Static Inner class
3. Method local Inner class
4. Anonymous Inner class

**6. Wrapper classes:**

1. Byte, Short, Integer, Long, Float, Double, Boolean, Character

**7. Packages:**

1. What is a package?
2. Adv. of packages
3. Types of packages
4. Jar files preparation
5. Executable Jar files
6. Batch files preparation

**8. String manipulations:**

1. String
2. String Buffer
3. String Builder
4. String to kenizer

**9. Exception Handling:**

1. Error VS Exception
2. Exception Def.
3. Types of Exceptions
4. Checked Exception VS Unchecked Exception
5. Throw Vs throws
6. try-catch-finally
7. Custom Exceptions
8. Java7 Features in Exception Handling

**10. Multi-Threading:**

1. Process Vs Processor Vs Procedure
2. Single Processing Mech. Vs Multi Processing Mech.
3. Single Thread model And Multi Thread Model
4. Thread Design
5. Thread lifecycle
6. Thread class library
7. Daemon Thread
8. Synchronization
9. Inter Thread communication
10. Deadlocks

**11.IOStreams:**

1. What is stream?
2. Types of Streams?
3. File Input Stream Vs File Output Stream
4. File Reader Vs File Writer
5. File Vs Random Access File
6. Serialization vs Deserialization
7. Externalization

## **12.Networking:**

1. Standalone Appl. Vs Distributed Appl.
2. Client-Server Arch.
3. Socket Vs Server Socket
4. Network Appl. Arch.
5. Socket Programming.

## **13.Collection Framework:**

1. Collection Arch.
2. List and its implementations
3. Set and its implementations
4. Map and its implementations
5. Queue and its implementations
6. Iterators

## **14.AWT:**

1. Text Field, Text Area, Button, Label, Check Box, List.

## **15.Swing:**

1. J Text Field, J Password Field, J Check Box, J Radio Button, J ColorChooser.
2. Event Delegation Model

## **16. I18N:**

1. Number Format
2. Date Format
3. Resource Bundle

## **17. Reflection API:**

1. Class
2. Field
3. Method
4. Constructor

## **18. Annotations:**

1. What is Annotation?
2. Adv of annotations
3. Comments Vs Annotations
4. Types Of annotations

## **19. Remote Method Invocation[RMI]:**

1. Introduction
2. RMI Architecture
3. Steps to Design RMI Application
4. Parameters in Remote methods

## **20. Regular Expressions:**

1. Introduction
2. Pattern
3. Character
4. Quantifiers

## **21. Garbage Collection:**

1. Introduction
2. Approaches to make an object for GC
3. Methods for requesting JVM to run GC
4. Finalization

**22. JVM Arch.**

1. Class Loading Sub System
2. Memory Management System
3. Execution Engine
4. Java Native Interface
5. Java Native library

**23. Generics:**

1. Introduction
2. Generic Classes
3. Generic Methods & Wild Card Character.
4. Inter Communication with Non-Generic Code

**24. Basics of JDBC:**

1. Introduction.
2. JDBC Drivers.
3. Steps to prepare JDBC Applications
4. JDBC Applications for CRUD Operations

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1. Eclipse
2. IntelliJ Idea
3. Netbeans