**Syllabus:**

**J2SE:[Core Java]:**

**1. Introduction:**

1. Java History  
2. Differences between java and others  
3. Java Features

4. Program Internal

5. JDK, JRE and JVM

6. Object and Class

7. Java Programming Format

8. Java Naming Conventions

**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 / Java Control 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 keyword  
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. Assiciations 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

27. Method overloading  
28. Method overriding  
29. Abstract Methods Vs Concreate 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. Encapsulation:**

**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

**Access Modifiers**

**Encapsulation**

**8. String & String methods:**

**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. Annotations:**

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

**15. Regular Expressions:**

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

**16. Garbage Collection:**

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

**17. Generics:**

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

**18. Basics of JDBC:**

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

**19.ID’s**

1. Eclipse  
2. IntelliJ Idea  
3. Netbeans