Paper Cade: BCADSC 3.3	**Paper Title:** Java Programming	**Teaching Hours:** 5 Hrs / Week
Total Teaching Hours: 60Hrs	**Marks:** Th-80+IA-20	**Credits:** 3

UNIT I

Concept - Object, classes, abstraction, encapsulation, inheritance, polymorphism .History of Java, features of Java, JDK Environment, Java Virtual Machine, Java Runtime environment, Identifiers and Keywords, Data types and typecasting, Variables, Java coding conventions, Expressions, Control structures, Decision making statements, Arrays and its methods, command line arguments.   **12 Hrs**

UNIT II

Java classes, Define class with instance variables and methods, Object creation, Accessing member of class, argument passing, Constructors, Method overloading, Static data, Static methods, Static blocks, This keyword, Garbage collection & finalize() method, Nested & Inner classes, Wrapper Classes, String (String Arrays, String Methods, String Buffer, String Builder)   **12 Hrs**

UNIT III

Inheritance: Super class & subclass, abstract method and classes, method overriding, final keyword, super keyword, dynamic method dispatch. Packages and Interfaces: Implementing interfaces, user defined interfaces; modifiers & access control (Default, public, private and protected), user defined packages, Importing classes, Exploring java.util package: Vector, Scanner, Date, Calendar.   **12 Hrs**

UNIT IV

Exception handling: Types of Exceptions, try, catch, finally, throw, throws keywords, creating your own exception, nested try blocks, multiple catch statements, user defined exceptions. Java Input Output: Java IO package, File, Class Byte/Character Stream, Buffered reader / writer, File reader / writer, Print Writer; Multithreading: Multithreading concept, Java thread model, Main thread, Creating a thread, Creating multiple threads, Using isAlive() and join(), Thread priorities, Synchronization, Inter-thread communication, Suspending, Resuming and Stopping threads. **12 Hrs**

UNIT V

Applets: How Applets differ from Applications, Preparing to write applet, Building applet code, Applet life cycle, Creating an executable applet, Applet tags, Adding applet to HTML file, Getting input from the user. Graphics: The graphics class, Lines and rectangles, Circles and ellipses, Drawing arcs, Drawing polygons, Line graphs, Drawing bar charts.   **12 Hrs**

References:
1. Balaguruswamy, Programming with JAVA A primer, 4th Edition, TATAMcGraw-Hill
2. Herbert Schildt, The Java 2 : Complete Reference, Fourth edition,TMH,
3. Cay S Horstmann, Fary Cornell, Core Java 2, Volume – I, Sun MicrosystemsPress
4. https://docs.oracle.com/javase/tutorial/

Additional Reading:
1. Peter Van der Liden, Just Java, Prentice Hall
2. H. M. Deitel, P. J. Deitel, Java: how to program, 5th edition, Prentice Hall of India
3. Y. Daniel Liang, Introduction to Java programming, 9thEdition, Pearson education