Syllabus

Java Programming
BCA-16-503

L	T	P	Cr
6	-	-	3

Time Duration: 3 Hrs.

External Marks : 65
Internal Marks : 10
Number of Lectures : 60

Objective : ***This course aims at giving student knowledge about all the programming concepts of JAVA programming language.***

Note :

(i) *The Question Paper will consist of Four Sections.*

(ii) *Examiner will set total of **NINE** questions comprising **TWO** questions from each Section and **ONE** compulsory question of short answer type covering whole syllabi.*

(iii) *The students are required to attempt **ONE** question from each Section and the Compulsory question.*

(iv) *All questions carry equal marks unless specified.*

UNIT – I

Java and the Internet: The Java programming language and its characteristics; Java development kit, Java run- time environment; Java compiler

Fundamentals of Java: Java Vs. C++, Byte Code, Java Virtual Machine, constants, variables, data types, operators, expressions, control structures, defining class, creating objects, accessing class members, constructors, Garbage Collection, method overloading, **Inheritance:** Different types of Inheritance, member access, using super keyword to call super class constructors, creating a multilevel hierarchy, method overriding, dynamic method dispatch, using abstract classes, using Final keyword.

UNIT – II

I/O Basics: streams, the predefined streams; Reading console Input, Writing console Output.

Arrays and Strings: One-dimensional and two-dimensional Arrays, String Handling using String and String Buffer class, String Functions.

Packages: Types of packages, defining a package, Importing packages, Access protection **Interfaces**: Defining an Interface, Implementing Interfaces, Variables in Interfaces, Achieving multiple inheritance using interfaces, Interface and Abstract classes.

UNIT – III

Exception Handling: Java Exception handling model, Types of exception, using Try and catch, Multiple Try and Catch clauses, Nested Try statements, finally block, user defined exceptions.

Multi-threaded Programming: The Java Thread model, the Thread class and Runnable interface, Creating a Thread using Runnable Interface and extending Thread, Creating Multiple Threads, Thread Priorities, Synchronizations: Methods, Statements, Inter Thread Communication, Deadlock, Suspending, Resuming and Stopping Threads.

Applet Programming: Introduction, Types of applet, Life Cycle, Incorporating an applet into web page using Applet Tag, running applets, using Graphics class and its methods to draw lines, rectangles, circles, ellipses, arcs and polygons.

UNIT – IV

Using AWT controls: Introduction to AWT, Creating GUI Applications using AWT, AWT controls: Label, TextBox, TextArea, Check Boxes, Radio Buttons, Choice lists, Understanding Layout Managers: FlowLayout, BorderLayout, GridLayout; Introduction to Event handling using Delegation Event Model.

Introduction to Java Database Connectivity (JDBC): JDBC Architecture, JDBC Drivers, Java. SQL package, Connecting to the Database and performing basic database operation like Insert, Delete, Update and Select.