ITBRAINY

Core JAVA

S.NO	Title	Topics
1	**Introduction**	Programming language Types and Paradigms. Computer Programming Hierarchy. How Computer Architecture Affects a Language ? Why Java ? Flavors of Java. Java Designing Goal. Role of Java Programmer in Industry. Features of Java Language. JVM –The heart of Java Java's Magic Bytecode
2	**Language Fundamentals**	Installing Java, Java Program Development, Java Source File Structure, Compilation, Executions, Lexical Tokens, Identifiers Keywords, Literals, Comments Primitive Datatypes, Operators Assignments.
3	**Object Oriented Programming**	Class Fundamentals. Object & Object reference. Object Life time & Garbage Collection. Creating and Operating Objects. Constructor & initialization code block. Access Control, Modifiers, methods Nested , Inner Class &Anonymous Classes Abstract Class & Interfaces Defining Methods, Argument Passing Mechanism Method Overloading, Recursion. Dealing with Static Members. Finalize() Method. Native Method. Use of "this "reference. Use of Modifiers with Classes & Methods. Design of Accessors and Mutator Methods Cloning Objects,

		shallow and deep cloning Generic Class Types
4	**Extending Classes and Inheritance**	Use and Benefits of Inheritance in OOP Types of Inheritance in Java Inheriting Data Members and Methods Role of Constructors in inheritance Overriding Super Class Methods. Use of "super". Polymorphism in inheritance. Type Compatibility and Conversion Implementing interfaces.
5	**Package**	Organizing Classes and Interfaces in Packages. Package as Access Protection Defining Package. CLASSPATH Setting for Packages. Making JAR Files for Library Packages Import and Static Import Naming Convention For Packages
6	**Exception Handling**	The Idea behind Exception Exceptions & Errors Types of Exception Control Flow In Exceptions JVM reaction to Exceptions Use of try, catch, finally, throw, throws in Exception Handling. In-built and User Defined Exceptions Checked and Un-Checked Exceptions
7	**Array & String**	Defining an Array Initializing & Accessing Array Multi –Dimensional Array Operation on String Mutable & Immutable String Using Collection Bases Loop for String Tokenizing a String Creating Strings using StringBuffer
8	**Thread**	Understanding Threads Needs of Multi-Threaded Programming. Thread Life-Cycle Thread Priorities Synchronizing Threads Inter Communication of Threads Critical Factor in Thread -Deadlock
9	**A Collection of Useful Classes**	Utility Methods for Arrays Observable and Observer Objects Date & Times Using Scanner Regular Expression
10	**Input/output Operation in Java(java.io Package)**	Streams and the new I/O Capabilities Understanding Streams The Classes for Input and Output The Standard Streams Working with File Object File I/O Basics Reading and Writing to Files Buffer and Buffer Management Read/Write Operations with File Channel Serializing Objects

11	**Java Utilities (java.util Package) The Collection Framework**	Collections of Objects Collection Types Sets Sequence Map Understanding Hashing Use of ArrayList & Vector
12	**Networking Programming**	Networking Basics Client-Server Architecture Socket Overview Networking Classes and Interfaces Network Protocols Developing Networking Applications in Java