**A.S.D. GOVERNMENT DEGREE COLLEGE FOR WOMEN(A)**

**KAKINADA**

**DEPARTMENT OF COMPUTER SCIENCE**

**B.Sc – II Year 3rd Semester**

**Paper-III : OBJECT ORIENTED PROGRAMMING USING JAVA**

**UNIT-1**

 **FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING :**Introduction,Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features: **OVERVIEW OF JAVA LANGUAGE**: Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **CONSTANTS, VARIABLES & DATA** **TYPES:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values; **OPERATORS & EXPRESSIONS**.

**UNIT-II**

**DECISION MAKING & BRANCHING:** Introduction, Decision making with if statement, Simple if statement, if. Else statement, Nesting of if. else statements, the else if ladder, the switch statement, the conditional operator. **LOOPING**: Introduction, The While statement, the do-while statement, the for statement, Jumps in loops.

**CLASSES, OBJECTS & METHODS**: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods;

**UNIT-III**

**INHERITANCE**: Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes;

**ARRAYS, STRINGS AND VECTORS:** Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes;

**INTERFACES:** MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

**UNIT-IV**

**MULTITHREADED PROGRAMMING:** Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the ‘Runnable’ Interface.

**MANAGING ERRORS AND EXCEPTIONS:** Types of errors : Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement,

**UNIT-V**

**APPLET PROGRAMMING:** local and remote applets, Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state.

**PACKAGES:** Introduction, Java API Packages, Using System Packages, Naming conventions, Creating Packages, Accessing a Package, using a Package.

**Reference Books:**

1. E.Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGraw-Hill

Company.

1. John R. Hubbard, Programming with Java, Second Edition, Schaum’s outline Series, TATA McGraw-Hill Company.
2. Deitel &Deitel. Java TM: How to Program, PHI (2007)
3. Java Programming: From Problem Analysis to Program Design- D.S Mallik
4. Object Oriented Programming Through Java by P. Radha Krishna, Universities Press (2008)

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**OBJECT ORIENTED PROGRAMMING USING JAVA LAB**

1. Write a program to perform various String Operations
2. Write a program on class and object in java
3. Write a program to illustrate Function Overloading & Function Overriding methods in Java
4. Write a program to illustrate the implementation of abstract class
5. Write a program to implement Exception handling
6. Write a program to create packages in Java
7. Write a program on interface in java
8. Write a program to Create Multiple Threads in Java
9. Write a program to Write Applets to draw the various polygons
10. Write a program which illustrates the implementation of multiple Inheritance using interfaces in Java
11. Write a program to assign priorities to threads in java