SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar
Programme & Subject : B.Sc (CA & IT) – M.Sc (CA & IT) Dual Degree
Semester - 4
US04CIIT23 : OOPS Technology - I
(w.e.f June 2020)

Credits   : 4   **Exam Duration : 3hrs**

Lectures per week   : 4

All units carry equal weightage.

Unit	Description in detail	Weightage
I	**Introduction** - History of Java, features, the Java environment, the Java Virtual Machine (JVM) - Structure of a Java program, a simple Java program, implementing a Java program - Tokens, comments, constants, variables and data types - Scope of variables, type casting - Operators: arithmetic, relational, logical, assignment, increment/decrement, conditional, ternary operator & special operators - Decision making: if statement, if…else statement, nesting of if…else, the else if ladder, switch statement - Looping: while, do…while, for, for each loop, jumps in loops, labeled loops - Arrays: one, two dimensional arrays	25%
II	**Classes, Objects, Interfaces and Inheritance** - Defining a class, members of a class: variables and methods, creating objects, constructors, accessing class members - Static members v/s instance members - Introduction to inheritance, *super* keyword - Interfaces: introduction - Final variables, methods and classes, abstract methods and classes - Introduction to method overloading and overriding	25%

III	**Exception Handling, I/O Management and Packages**	
	− Managing errors & exceptions: introduction, types of errors, exceptions, syntax of exception handling construct, multiple catch statements, the finally clause, defining and throwing user-defined exceptions, the throw statement	25 %
	− Managing I/O files : introduction, concept of streams, Character stream classes	
	− Introduction to the concept of package, Java API packages, using the System package	
	− Using java.lang (String, Math)	
IV	**Applet Programming and JDBC**	
	− Applet architecture and skeleton	
	− java.awt package (Button, CheckBox, CheckBoxGroup, Choice, Color, Label, List, TextArea, TextField)	
	− HTML applet tag, display techniques (DrawString, Lines, Rectangle, Ellipses, Circles, Arcs, Polygons, Color)	25 %
	− Introduction to event handling	
	− Introduction to JDBC, types of drivers, java.sql package	
	− Retrieving, inserting, deleting and updating data though Java	

Basic Text & Reference Books:

1. Programming with Java- A Primer by E. Balaguruswami, 3rd Edition, TMH Publication
2. The Complete Reference – Java 2 7th Edition Herbert Schildt. TMH Publication
3. Saba Zame , Handbook of Object technology, CRC Press, Washington DC, 1999
4. Mary Campion and Kathy Walrath, Java tutorial, Second Edition, Addison Wesley Pun. 1998.
5. Java 2 Programming Black Book, Steven Holzner