

SEMESTER – 4

Paper : 22CAC-10 Theory/Week:4 Hours Credits:4	Programming in Core Java	Hours: 60 IA : 50 Exam: 50
Course Objective: <ul style="list-style-type: none"> To train the students in understanding the JVM environment. To develop simple Programs in java and execute in java environment. To enable students to learn and implement the basic concepts in java. Course outcome: Upon successful completion of the course students will be able CO1: To recall basic concepts of OOPs and work with JAVA. CO2: To illustrate programming skills require to solve problems in JAVA. CO3: To build small interactive java applications CO4: To apply Java skills in practical to develop different types of applications. CO5: To Determine the appropriate use of Java in real world.		
Module– I		12Hours
Introduction - Origin and features - platform independent, object oriented etc., Java - JDK and API. Language Reference - Java Program Structure, Java Tokens, Java statements, Java Virtual machine, Command line Parameters, Java Variables and Arrays, Operators - Arithmetic, Bit wise, and Relational Boolean. Teaching Methodology Power point Chalk and board Experimental Learning Seminars		
Module – II		12 Hours
Decision Making and Branching - <i>if-else, switch,?:</i> operator, <i>while, do, for</i> and jumps in loops, labelled loops. Classes Objects and Methods - Class fundamentals, Declaration, Assignment, Methods, Constructors, Methods Overloading, Static Members, nesting of methods Teaching Methodology Power point Chalk and board Experimental Learning Seminars		
Module – III		12 Hours
Inheritance - Method overriding, Final variables and methods, Abstract methods and classes, Visibility controls - access modifiers. Arrays, Strings and Vectors - One and two dimensional arrays, Strings, vectors and wrappers.		
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Module – IV		12 Hours
Interfaces - Defining, extending, and implementing interfaces. Accessing interface variables Packaging - Java API packages, system packages, naming conventions, creating and accessing a package, adding a class to a package, hiding classes. Teaching Methodology Power point Chalk and board Experimental Learning Seminars		
Module – V		12 Hours
Multi-threads Programming - Java thread Model, Main Thread, creating CI Thread, Creating Multiple Threads, Extending the thread class, Stopping and blocking a thread, Life cycle of a thread, Using thread methods, Thread priority and synchronization, Inter thread communication, implementing the 'runnable' interface. Managing Errors and Exceptions - Fundamentals, types, and their usage. <i>Try-catch-final/structure</i> Teaching Methodology Power point Chalk and board Experimental Learning Seminars		

Text Books	
1.	Balaguruswamy, Programming with Java - A PRIMER, Tata McGraw-Hill Edition(3 rd. Edition)
2.	A. Lew, H. Mauch, Dynamic Programming, A Computational tool, Springer
3.	K. Somasundaram, Introduction to Java Programming, Jaico Publishing House

Reference Books	
1.	Cay S. Horstmann, Core Java Volume1-Fundamentals, 11th Edition, Prentice Hall
2.	Joshua Bloch, Effective Java, 3rd Edition, Addison Wesley
3.	Herbert Schildt, Java: a beginner's guide, 8th Edition, McGraw-Hill Education

Continuous Internal Assessment (CIA) Method:

Sl. No	Type of Assessment	Mode of Assessment	Marks
1	Presentation on any topic on the subject	Regular mode of Assessment	10
2	Open Book Examination	Regular mode of Assessment	10
3	Assignments on Topic	Regular mode of Assessment	10
4	MCQ at the end of each module	2 marks for each Module	10
5	Attendance and Extracurricular activity	As per the regulations	10
Total			50

Scheme of Evaluation:

The paper carries 100 marks out of which 50 marks will be allotted to external examination and 50 marks will be allotted to the internal assessment.

External examination marks will be as follows

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| 4. | 1 marks questions 10 out of 12 | 1 X 10 = 10 marks |
| 5. | One full question out of 2 full questions in each Module carries 8 X 5 = 40 marks | |
| | | Total 50 marks. |

In order to clear this paper minimum 50% marks must be scored both in internal and well as external examination.

Video Lectures (e-Resources)

1. https://youtu.be/hBh_CC5y8-s
2. <https://youtu.be/UmnCZ7yDY>
3. <https://youtu.be/CFD9EFcNQ>
4. <https://youtu.be/5NQjLBuNL0>
5. <https://youtu.be/ZFnRvpxpnc>