

P R GOVT COLLEGE(A), KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
II B.Sc (CS) - Semester- III (W.E.F. 2016-2017)
Course: Basics of Java Programming –Paper-II
Course code: CP3204

Total Hrs. of Teaching-Learning: 52 @ 4 h / Week

Total Credits: 03

Objective: To develop proficiency in the specification, representation, and implementation of OOPS Concepts.

Outcomes: After completion of this course, student can able to understand:

1. The basic structure of Java Programming.
2. Object Oriented Programming features.

Module-1: Java Fundamentals

HRS: 12

Java Fundamentals: Object oriented paradigm – Basic concepts of Object Oriented Programming – Benefits of OOP – Applications of OOP.

Java Evolution: Java Features – How Java differs from C

and C++ - Java and Internet – Java and World Wide Web – Web Browsers – Hardware and Software Requirements – Java Environment. Overview of Java Language: Simple Java Program – Java Program Structure – Java Tokens- Java Statements – Implementing a Java Program – Java Virtual Machine – Command Line Arguments.

Module-2 Basics of Java Programming

HRS: 12

Basics: History of Java, comments, data types, variables, constants, scope and life time of variables, operators, operator hierarchy, expressions, type conversion and casting, enumerated types, control flow block scope, simple java stand alone programs, arrays.

Operators and Expressions: Arithmetic Operators – Relational Operators- Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operators – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Operators – Operator Precedence and Associativity.

Decision Making and Branching: Decision Making with If statement – Simple If Statement-If else Statement-Nesting If Else Statement- the ElseIf Ladder-The switch Statement – The ?: operator.

Decision Making and Looping: The while statement – The do statement – The for statement – Jumps in Loops.

Module-3: OOPS Concepts in Java

HRS: 12

Class, Objects and Methods: Defining a Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing class members – Constructors – Methods Overloading – Static Members – Nesting of Methods – Inheritance – Overriding Methods – Final Variables and Methods – Final Classes – Abstract Methods and Classes – Visibility Control-garbage Collection.

Module-4: Inheritance, Polymorphism & Interfaces

HRS: 12

Inheritance - Inheritance hierarchies super and sub classes, Member access rules, super keyword, preventing inheritance: final classes and methods, the Object class and its methods.

Polymorphism - Dynamic binding, Method overriding, abstract classes and Methods.

Interfaces - Interfaces vs. Abstract classes, defining an interface, implementing interfaces, accessing implementations through interface references, extending interfaces, Multiple Inheritance.

Prescribed Text Books:

1. E. Balaguruswamy, Programming with Java, A primer, 3e, TATA McGraw-Hill company (2008)
2. Java Fundamentals-A Comprehensive Introduction, Herbert Schimdt and Dale Srien, TMH.

Reference Books:

1. Java for Programmers, P.J.Deital and H.M.Deital, Pearson Education
2. Object Oriented Programming Through Java, P.Radha Krishna, Universities Press.

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT (W.E.F. 2016-2017)
II B.Sc (CS) SEMESTER-III
Course code: CP3204

SUBJECT: Basics of Java Programming
PAPER- II

Time: 3 Hrs
Marks: 70

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	2	1	5	5	1	5
2	Section-B Short Questions	8	5	40	5	5	25
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				125	TOTAL MARKS		70

P.R.GOV.T.COLLEGE (AUTONOMOUS), KAKINADA

MODEL PAPER (W.E.F. 2016-2017)

II B.Sc (CS) Course code: CP3204

**SUBJECT: Basics of Java Programming
PAPER-II**

**Time: 3 Hrs
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SEMESTER-III

Section – I

Answer any all questions

5 x 1 = 5M

1. Define JVM.
2. Define Constant.
3. What is an Operator?
4. Define class and Object.
5. Define Interface.

Section –II

Answer any 5 questions

5 x 5 =25M

6. What are the data types supported by Java?
7. Explain the Evaluation of Expressions.
8. Explain the Conditional Statements in Java.
9. Discuss Abstract classes and Methods.
10. Discuss Constructor Overloading.
11. Discuss Constructor Overriding.
12. Explain about Final variables and Methods.
13. How can you implement Interfaces?

Section –III

Answer all the questions

4 x 10 = 40M

14. A. Explain the features of Object Oriented Programming.

(OR)

B. What is an Operator? Explain the Types of Operators in Java.

15. A. Explain the Decision Making and Looping Statements in Java.

(OR)

B. How is Multiple Inheritance handled in Java Programming?

16. A. What is a Package? Explain the creation of Package in Java.

(OR)

B. Explain about JVM in details.

17. A. What is the difference between overriding and overloading by using programming?

(OR)

B. Explain the difference between Interfaces and Abstract classes with an example Programs.

P R GOVT COLLEGE(A), KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
II B.Sc (CS) SYLLABUS PAPER (W.E.F. 2016-2017)
Course Code: CP4204
SEMESTER-IV

Course: Data Structures Through JAVA
Total Hrs. of Teaching-Learning: 52 @ 4 h / Week

Paper: II
Total Credits: 03

Objective:

This course offers an introduction to the Java programming language for those students who have had little or no background in programming. Toward this goal students will learn how to:

- Write programs using the Java language. Basic topics considered are programs and program structure in general, and Java syntax, data types, flow of control, classes, methods, objects, arrays, exception handling, recursion, and graphical user interfaces (GUIs).
- Compile and execute them under the Sun Microsystems, Inc. Java 2 Platform, Standard Edition.
- Understanding Multithreaded Programming, and working with data structures

SEMESTER – IV

Module-1 Packages and Exception Handling 14 Hrs

Packages - Defining, Creating and Accessing a Package, Understanding CLASSPATH, importing packages.

Managing Errors and Exceptions: Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statement – Throwing our own Exceptions – Using Exceptions for debugging.

Module-2 Multithreaded Programming & Applets 12 Hrs

Multithreaded Programming: Creating Threads – Extending the Thread Class – Stopping and Blocking a Thread – Life Cycle of a Thread – Using Thread Methods – Thread Exceptions – Thread Priority – Synchronization.

Applet Programming: How Applets differ from Applications – Preparing to write Applets – Building Applet Code – Applet Life Cycle – Creating an executable Applet – Designing a WebPage – Applet Tag – Adding Applet to HTML file – Running the Applet – More about Applet Tag – Passing parameters to Applets – Aligning the display – More about HTML tags – Displaying Numerical Values – Getting Input from the user.

Module-3: GUI Programming with Java & Event Handling 12 Hrs

GUI Programming with Java - The AWT class hierarchy, Introduction to Swing, Swing vs, AWT, Hierarchy for Swing components, Containers - JFrame, JApplet, JDialog, JPanel, Overview of some swing components JButton, JLabel, JTextField, JTextArea, simple swing applications, Layout management - Layout manager types - border, grid and flow

Event handling - Events, Event sources, Event classes, Event Listeners, Relationship between Event sources and Listeners, Delegation event model, Examples: handling a button click, handling mouse events, Adapter classes.

Module-4: Data Structures 14 Hrs

Sorting: Bubble Sort, Selection Sort, Insertion Sort, and Quick Sort. **Stacks and Queues:** Stacks: Operations of Stacks, Queues: Operations of Queues. **Linked Lists:** Single Linked lists, Doubly Linked Lists.

Prescribed Text Books:

1. Programming with Java, E.Balaguruswamy, Tata McGraw Hill Publications.
2. Robert Lafore, Data Structures & Algorithms in Java, Second Edition, Pearson Education (2008)
3. Data Structures and Algorithms Using java: William MC Allister

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT (W.E.F. 2016-2017)
II B.SC (CS)
SEMESTER-IV
Course Code: CP4204

SUBJECT: Data Structures through Java
PAPER- II

Time: 3 Hrs
Marks: 70

Model blue print for the model paper and choice

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P. R. GOVT COLLEGE (AUTONOMOUS), KAKINADA
MODEL PAPER (W.E.F. 2016-2017)
II B.SC (CS)
SEMESTER –IV
Course Code: CP4204

Subject: Data Structures through Java
Time: 3 hrs

Paper: IV
Marks: 70

SECTION – I

Answer all Questions

5×1 = 5M

1. What is thread?
2. Define Synchronization.
3. Define AppletViewer.
4. What is GUI Programming?
5. What is a Swing?

SECTION – II

Answer any FIVE Questions

5 x 5 = 25M

6. Explain the creation of Threads.
7. Design a Web Page using Applets.
8. How to run Applets? Explain.
9. Explain HTML Tags in details.
10. Discuss the differences between Swing and AWT.
11. What are the types of Layout Manager?
12. Explain about Event classes.
13. Explain Insertion Sort.

SECTION – III

Answer all the Questions

4 x 10 = 40 M

14. a. How can you import Packages? Explain with example.

OR

- b. Explain the concept of Exception Handling in detail.

15. a. Explain the Life Cycle of Thread.

OR

- b. Describe the Process of Adding Applets to HTML File and Running the Applet.

16. a. Explain the Containers in Java.

OR

- b. What are the Swing Components that are supported by Java? Explain

17. a. What is Stack? What are the operations that are supported by Stacks?

OR

- b. Explain about Linked Lists in Java.