

B.COM – VI SEM
Subject- Computer Application Paper-
Programming in Java and Software Engineering

| Duration | Max Marks | Min Marks | CCE | Practical | |
|----------|-----------|-----------|-----|-----------|-----|
| 3hrs | 50 | 17 | 15 | Max | Min |
| | | | | 35 | 12 |

UNIT I

14 Lectures

An Overview of Java: Features, Environment, Advantages, Java Byte Code, Java and the Internet: Java Tokens: Data Types, Variables and Constants, Operators & Expressions. Structure of a Java Program: Assignments and Initialization, Java Statements and Control Statements.

UNIT II

14 Lectures

Classes, Objects and Methods: Using Existing Classes, Building your Classes, Static fields and Methods, Method parameters, Creating objects, constructors, method overloading. Packages: Using Packages. Inheritance: Extending Classes, final keyword, Interfaces. Arrays in Java, Strings, Threads, Life Cycle of a thread.

UNIT III

14 Lectures

AWT: The Applet Class: Applet Basics, Applet Architecture, Life Cycle of an Applet, The Applet HTML Tags and Attributes, Event Handling: Event Handling Mechanism, the Delegation Event Model, Event Classes, Sources of Events, Event Listener Interfaces, Adapter Classes, Using AWT for Windows, Graphics and Text, Using AWT controls, Layout Managers and Menus.

UNIT – IV

14 Lectures

SOFTWARE: Software Characteristics, Components & Applications, Software Engineering - A Layered Technology, Software Process Models [Linear Sequential Model, Prototype & RAD Model], Evolutionary Software Process Model [Incremental Model and Spiral Model]. Project Management Concepts – People Problem and Process, S/W PROCESS AND PROJECT METRICS: Metrics in the Process and Project Domains. Software Measurement –Size Oriented, Function Oriented Metrics, Extended Function SOFTWARE PROJECT PLANNING: Objectives, Scope, Project Estimation, Decomposition Techniques, Empirical Estimation Models.

UNIT – V

14 Lectures

ANALYSIS CONCEPT AND PRINCIPLES: Requirement Analysis, Analysis Principles, Software Prototyping, and Specifications. DESIGN CONCEPTS AND PRINCIPLES: Design Process, Design Concepts, Design Principles, Effective Modular Design, Transform Mapping and Transaction Mapping, User interface Design, - models, design process. S/W Quality Assurance: Quality Concepts, SQA activities, S/W Reviews, Formal Technical Reviews, S/W Reliability, S/W TESTING TECHNIQUES: S/W Testing Fundamentals, Test Case Design, White and Black Box Testing, Basic Path Testing, Control Structure **S/W TESTING STRATEGIES**: Strategic Approach To S/W Testing, Unit Testing, Integration Testing, Validation Testing, System Testing, Debugging.

Text Books:

E. Balaguruswamy, "Programming In Java", 2nd Edition, TMH Publications ISBN 0-07-463542-5
 Software Engineering By R.S.Pressman, Edition V- [Unit 1-4 & CASE] and Edition VI (Reuse) An Integrated Approach To Software Engineering By Pankaj Jalote

Reference Books :

Peter Norton, "Peter Norton Guide To Java Programming", Techmedia Publications ISBN 81-87105-61-5
Software Engineering (7th Edition) Addison- Wesley 2004 ,Ian Sommerville
Software Engineering Hand book Auerbach publication, Jessica Keyes
Software Engineering Principles and Practice 2nd edition Wiley , Hans Van Vliet
