

M.Sc. (Computer Science)
Semester-3
MSCS-3-01T: Web Programming

Total Marks: 100
External Marks: 70
Internal Marks: 30
Credits: 4
Pass Percentage: 40%

INSTRUCTIONS FOR THE PAPER SETTER/EXAMINER

1. The syllabus prescribed should be strictly adhered to.
2. The question paper will consist of three sections: A, B, and C. Sections A and B will have four questions from the respective sections of the syllabus and will carry 10 marks each. The candidates will attempt two questions from each section.
3. Section C will have fifteen short answer questions covering the entire syllabus. Each question will carry 3 marks. Candidates will attempt any ten questions from this section.
4. The examiner shall give a clear instruction to the candidates to attempt questions only at one place and only once. Second or subsequent attempts, unless the earlier ones have been crossed out, shall not be evaluated.
5. The duration of each paper will be three hours.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt any two questions each from the sections A and B of the question paper and any ten short q questions from Section C. They have to attempt questions only at one place and only once. Second or subsequent attempts, unless the earlier ones have been crossed out, shall not be evaluated.

SECTION-A

Unit 1: Java and the Internet: The Java programming language and its characteristics; Java development kit, Java run- time environment; Java compiler.

Unit II: Fundamentals of Java: Java Vs. C++, Byte Code, Java Virtual Machine, constants, variables, data types, operators, expressions, control structures, defining class, creating objects, accessing class members, constructors, Garbage Collection, method overloading.

Unit III: Inheritance: Different types of Inheritance, member access, using super keyword to call super class constructors, creating a multilevel hierarchy, method overriding, dynamic method dispatch, using abstract classes, using Final keyword.

Unit IV: I/O Basics: streams, the predefined streams; Reading console Input, Writing console

Output. Arrays and Strings: One-dimensional and two-dimensional Arrays, String Handling using String and String Buffer class, String Functions.

SECTION-B

Unit V: Packages: Types of packages, defining a package, importing packages, Access protection Interfaces: Defining an Interface, Implementing Interfaces, Variables in Interfaces, achieving multiple inheritance using interfaces, Interface and Abstract classes.

Unit VI: Exception Handling: Java Exception handling model, Types of exception, using Try and catch, Multiple Try and Catch clauses, Nested Try statements, finally block, user defined exceptions.

Unit VII: Multi-threaded Programming: The Java Thread model, the Thread class and Runnable interface, creating a Thread using Runnable Interface and extending Thread, Creating Multiple Threads, Thread Priorities, Synchronizations: Methods, Statements, Inter Thread Communication, Deadlock, Suspending, Resuming and Stopping Threads.

Unit VIII: Applet Programming: Introduction, Types of applet, Life Cycle, incorporating an applet into web page using Applet Tag, running applets, using Graphics class and its methods to draw lines, rectangles, circles, ellipses, arcs and polygons

Reference Books:

- Balaguruswamy, E., “Programming with Java”, A Primer, TMH, New Delhi, Latest reprint
- Bayross, Ivan, “Java 2”, BPB publication
- Schildt, Herbert, “The Complete Reference Java 2”, TMH.

M.Sc. (Computer Science)

Semester-3

MSCS-3-01P: Web Programming Lab

Total Marks: 50

External Marks: 15

Internal Marks: 35

Credits: 2

Pass Percentage: 40%

The programs in lab will be based on the contents covered in the theory syllabus.