

FACULTY OF ENGINEERING

**B.E. CSE (AI & ML) IV- Semester (AICTE) (New) (Main) Examination,
September / October – 2022**

Subject: Java Programming

Time: 3 Hours

Max. Marks: 70

- Note:**
- i) First Question is compulsory and answer any four questions from the remaining six questions. Each question carries 14 Marks.
 - ii) Answers to each question must be written at one place only and in the same order as they occur in the question paper.
 - iii) Missing data, if any, may suitably be assumed.

1.
 - a) Describe about garbage collection. Does it guarantee that program will not run out of memory?
 - b) Discuss about packages in java with the help of a program to create a package.
 - c) Describe about synchronization in threads.
 - d) Sketch the Collection classes and interface hierarchy.
 - e) Describe various methods in Frame class.
 - f) Differentiate between Applet and an Application.
 - g) Differentiate between AWT and Swing in Java.
2.
 - a) Explain benefits of object-oriented programming.
 - b) Describe the importance of inheritance in java with an example.
3.
 - a) Write a program to demonstrate late binding mechanism in java.
 - b) Explain exception handling in java and differentiate between checked and unchecked exceptions.
4.
 - a) Demonstrate all uses of super keyword with an example.
 - b) Explain about different ways to create threads in java and create a multi-thread program using any one of the techniques.
5.
 - a) Describe about various Layout Managers.
 - b) Demonstrate the need for Adapter classes with example.
6.
 - a) What is a servlet, describe its life cycle, and write a simple servlet to display a Welcome message on a web page. Also list the steps involved in creating, deploying and running a servlet in Tomcat Server.
 - b) Write a Swing Applet to perform user authentication using a username and password.
7.
 - a) Write a program to implement word count command.
 - b) Describe about Inner classes with help of a program.