

Code No.: D-2478/N/AICTE

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.
