

Code No: MC2015/20

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY- GURAJADA VIZIANAGARAM

MCA I Semester (R20) Regular/Supple Examinations-January-2025

OBJECT ORIENTED PROGRAMMING WITH JAVA

Time: 3 Hours

Max. Marks: 70

Question Paper consists of FIVE units, each carrying 14 marks
Each unit has TWO questions; either of them should be answered
All parts of a question must be answered at one place.

UNIT-I

1. a) Explain the principles of Object-Oriented Programming (OOP) with examples. 7M
- b) Write a Java program to demonstrate method overloading using three different methods. 7M

(OR)

2. a) Describe the concept of constructors in Java. Write a program to demonstrate the use of parameterized constructors. 7M
- b) Write a Java program to reverse a string using recursion. 7M

UNIT-II

3. a) What is polymorphism? Write a program to demonstrate runtime polymorphism in Java. 7M
- b) Explain the purpose and usage of the final keyword in inheritance with an example. 7M

(OR)

4. a) Write a Java program to create a package and import it in another class. Explain the steps. 7M
- b) Define an interface Shape with methods area and perimeter. Implement this interface in two classes: Circle and Rectangle. 7M

UNIT-III

5. a) Explain exception handling in Java. Write a program to demonstrate the use of try, catch, finally, and throw. 7M
- b) What are built-in exceptions in Java? Explain any three with examples. 7M

(OR)

6. a) Write a Java program to create a thread using the Runnable interface and demonstrate thread synchronization. 7M
- b) Differentiate between multithreading and multitasking with suitable examples. 7M

UNIT-IV

7. a) Explain the delegation event model in Java. Write a program to handle mouse click events using an event listener. 7M
- b) Describe the hierarchy of AWT components. Write a program to design a login form using Text Field and Button. 7M

(OR)

8. a) Write a Java program to implement a calculator using AWT components and the event-handling mechanism. 7M
- b) Explain the use of different layout managers in Java. Compare Flow Layout and Grid Layout with examples. 7M

UNIT-V

9. a) Explain the lifecycle methods of an applet and their sequence of execution. Provide a detailed description of the role of each lifecycle method with examples. 7M
- b) What are the limitations of AWT? Explain how Swing overcomes these limitations. 7M

(OR)

10. a) Write a program to demonstrate the use of JButton, JTextField, and JLabel in a Swing application. 7M
- b) Describe the MVC architecture in Swing. Write a program to create a simple GUI with JComboBox and JList. 7M