

(3 Hours)

**Note: Q. 1 is compulsory.**Attempt any **THREE** questions from **Q. 2 to Q. 6**

- Q. 1**
- a Differentiate between method overloading and overriding. [5]
  - b Illustrate with an example use of arraycopy() method. [5]
  - c Discuss the limitations of String class in JAVA. Differentiate between Sting and StringBuffer class. [5]
  - d Write a program to calculate GCD of two numbers. Take input from command line arguments. (GCD: Greatest Common Divisor) [5]
- Q. 2**
- a Explain Inheritance. Discuss different types of Inheritance in JAVA. Why JAVA does not support Multiple Inheritance? [10]
  - b What is multithreading? Explain different ways to create thread in JAVA. Write a program to display 1 to 10 numbers by creating a thread. [10]
- Q. 3**
- a Differentiate between application program and Applet. Explain applet lifecycle with neat diagram. [10]
  - b Explain the steps to create package in JAVA by adding class or an interface. Write a program to create package MYPACK to add Employee class and display Employee details: Employee\_ID, Employee\_Name and Employee\_Salary. [10]
- Q. 4**
- a Explain exception handling mechanism with the help of **try, catch, throw, throws** and **finally**. [10]
  - b Differentiate between interface and abstract class. [5]
  - c Why JAVA is platform Independent? Explain JVM. [5]
- Q. 5**
- a Write a program to create class Product with Product ID, Product Name, Quantity and Price. Also write methods to take input for product details, to display product details and to sort product details in ascending order of their price. Write a program to read and display sorted list of 10 products. [10]
  - b Differentiate between Array and Vector. Explain any five methods of Vector class. [10]
- Q. 6**
- a Explain use of super keyword in JAVA. [5]
  - b Discuss Final keyword with respect to variable, method and class in JAVA. [5]
  - c Explain logical operators in JAVA. [5]
  - d What is constructor? Explain different types of constructor. [5]