Bansilal Ramnath Agarwal Charitable Trust
Vishwakarma Institute of Technology
(An Autonomous Institute affiliated to Savitribai Phule Pune University)

Department Program In Information Technology

Java Programming Code-21435

Duration: 3 Hour

Marks: 80

Instruction

1) All Questions are Compulsory.

1. Attempt any There

1. Write a program that uses a switch statement to determine the day of the week based on a number input (1 for Sunday, 7 for Saturday). CO1 -- U
2. What is method overloading, and how does it differ from method overriding? CO4 -- U
3. How do you declare and initialize a two-dimensional array in Java? Write a program to calculate the sum of all elements in a 2D array. CO1 -- A
4. Explain the concept of the singleton design pattern. CO4 -- A

2. Attempt any There

1. What is a constructor in Java? CO3 -- R
2. What is the difference between == and .equals() in Java? CO2 -- R
3. What is the significance of the this keyword in Java? CO3 -- A
4. What are the main features of Java Collections Framework? CO2 -- U

3. Attempt any There

1. What is the difference between checked and unchecked exceptions? Provide examples of each. CO3 -- R
2. What is the purpose of the final keyword in Java? CO1 -- U
3. Describe the concept of interfaces in Java. CO1 -- A
4. What is the difference between HashSet and TreeSet? Provide code examples demonstrating both. CO4 -- U

4. Attempt any There

1. Write a program that reads two integers from the user and performs division, handling any potential ArithmeticException. CO3 -- U
2. Define a class Book with attributes title, author, and price. Include a constructor and a method to display book details. CO2 -- R
3. How do you read from a text file in Java? Write a code snippet that reads the contents of a file and prints them to the console. CO3 -- A
4. Explain how to use a HashMap. Write a program that stores and retrieves key-value pairs. CO4 -- A

5. Attempt any There

1. Explain the difference between primitive and reference data types in Java. Provide examples. CO1 -- R
2. Explain the ArrayList class and its advantages. Write a program that demonstrates adding, removing, and accessing elements in an ArrayList. CO4 -- R
3. Explain the concept of inheritance in Java. Write a program with a base class Animal and a derived class Dog. CO2 -- U