2024
B.A./B.Sc.
Second Semester
CORE – 4
COMPUTER SCIENCE
Course Code: CSC 2.21
(Programming in Java)

Total Mark: 70 *Pass Mark: 28*
Time: 3 hours

Answer five *questions, taking* one *from each unit.*

UNIT–I

1. (a) What is Java and why is it popular? 1+2=3
   (b) Write a Java program that takes a number as input and prints whether it is positive, negative, or zero using an if statement. 3
   (c) List and explain the different editions of Java. 4
   (d) What is the Java virtual machine (JVM)? Explain its role in Java programming. 2+2=4

2. (a) Explain the platform independence of Java. 3
   (b) Write a Java program to print the even numbers from 1 to 20 using a for loop. 3
   (c) What are variables and constants? How do you declare variables and constants in Java? 2+2=4
   (d) What is an enum in java? Write a program to illustrate enum. 1+3=4

UNIT–II

3. (a) Differentiate between predefined and user defined methods. 4
   (b) Explain two-dimensional array with an example. 4
   (c) What are streams? Explain the types of streams found in Java. 1+5=6

4. (a) How do you declare and initialize an array? Write a Java program to illustrate length of an array. 2+2=4

(b) Write Java program to replace a character in a string and concatenate strings. 4

(c) What is a scanner class? Explain any five methods in scanner class. 1+5=6

UNIT–III

5. (a) Describe the concept of polymorphism in Java. Provide an example demonstrating polymorphism. 2+3=5

(b) What is an abstract class? Illustrate with a Java program. 1+4=5

(c) Explain the "super" keyword in Java. When and how would you use it? 2+2=4

6. (a) What is the significance of the "this" keyword in Java? Provide an example demonstrating its usage. 2+2=4

(b) How do you achieve method overriding in Java? Write a program to illustrate it. 2+3=5

(c) Describe the concept of inheritance in Java. Write a program demonstrating inheritance. 2+3=5

UNIT–IV

7. (a) Explain the purpose of exception handling in Java. Describe the difference between checked and unchecked exceptions and provide examples of each. 2+4+4=10

(b) Explain how to create a thread in Java. 4

8. (a) Describe the try-catch-finally block in Java. How does it help in handling exceptions? 3+2=5

(b) What is the purpose of the "throws" clause in Java? How is it used? 4

(c) Describe the lifecycle of a thread in Java. 5

UNIT–V

9. (a) List two advantages and two disadvantages of using Java applets. 4

(b) Explain any four methods of graphic class. 4

(c) Explain the differences between event sources and event listeners in Java. 6

10. (a) How do you implement applet in Java? 2
(b) Explain the life cycle of an applet. 7
(c) What is an event? List and explain the types of events. 2+3=5