Register No.: ....   Name: ....

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

**SEVENTH SEMESTER INTEGRATED MCA DEGREE EXAMINATION (R), DECEMBER 2023
(2020 SCHEME)**

Course Code:	**20IMCAT403**
Course Name:	**Java Programming**
Max. Marks:	**60** **Duration: 3 Hours**

PART A
(Answer all questions. Each question carries 3 marks)

1. Illustrate with an example how parameters can be passed through a constructor.
2. Briefly explain the different access modifiers in Java.
3. Differentiate checked and unchecked exceptions in Java.
4. Can an interface extend another interface? Justify.
5. Explain generic interface with an example.
6. Write a Java program to read the contents from a file.
7. What is the difference between ArrayList and LinkedList?
8. Explain the differences between a Statement and a PreparedStatement in JDBC.
9. Discuss the use of JSP declarations.When should they be used in a JSP page.?Provide an example.
10. Explain the purpose of JSP scriptlets. Write the syntax for embedding Java code within JSP pages using scriptlets.

PART B
(Answer one full question from each module, each question carries 6 marks)

MODULE I

11. a) Write a Java program to reverse an array of integer values. (3)
    b) Create a class named 'Student' with String variable 'name' and integer variable 'roll_no'. Assign the value of roll_no as '2' and that of name as "John" by creating an object of the class Student. (3)

OR

12. Illustrate the use of inheritance in Java with an example. (6)

MODULE II

13.   a)   List out the advantages of using packages in Java.   (3)
       b)   Explain the user defined packages in Java.   (3)

OR

14.   a)   Describe the concept of interface in Java.   (3)
       b)   Write a Java program to create an interface Shape with the getArea() method. Create three classes Rectangle, Circle, and Triangle that implement the Shape interface. Implement the getArea() method for each of the three classes.   (3)

MODULE III

15.   a)   Define multithreading. Explain the advantages of using threads.   (3)
       b)   What are the states in the lifecycle of a thread?   (3)

OR

16.   a)   Explain the following.
            i)   Bytestream.   (4)
            ii)   Characterstream.
       b)   What is the role of the BufferedReader and BufferedWriter classes in Java file I/O?   (2)

MODULE IV

17.   a)   What is the difference between List and Set?   (3)
       b)   Explain hash set class in collection framework.   (3)

OR

18.   a)   Explain the purpose of JDBC and its key components.   (3)
       b)   Describe the steps involved in establishing a database connection using JDBC.   (3)

MODULE V

19.   Explain the life cycle of a JSP page. What are the different phases a JSP page goes through during its execution?   (6)

OR

20.   a)   How can we include one JSP page within another JSP page? Discuss the use of <jsp:include> and <%@include%> directive.   (3)
       b)   What are JSP expressions? How are they used to embed Java code in JSP pages? Provide an example.   (3)

****