

(FOR THE CANDIDATES ADMITTED

25UAI204

DURING THE ACADEMIC YEAR 2025 ONLY)

REG.NO. :

N.G.M. COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS: MAY 2026

BSC CS WITH AI & ML

MAXIMUM MARKS: 75

SEMESTER: II

TIME: 3 HOURS

PART - III

25UAI204–JAVA PROGRAMMING

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

(K1)

1. Which component of Java architecture is responsible for executing the bytecode?

A. JDK

B. JRE

C. JVM

D. Compiler

2. The keyword used to create an object in Java is_____

A) class

B) constructor

C) new

D) method

3. Method overriding in Java supports_____

A) Compile-time polymorphism

B) Run-time polymorphism

C) Data hiding

D) Encapsulation

4. Which method is used for inter-thread communication in Java?

A) sleep()

B) join()

C) wait()

D) stop()

5. Which class is used to read character data from a file in Java?

A) FileInputStream

B) FileOutputStream

C) FileReader

D) BufferedInputStream

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

6. Give one difference between int and double data types in Java.

7. What is the purpose of a default constructor in Java?

8. What is method overriding?

9. What is a runtime exception in Java?

10. What is a stream in Java I/O?

(CONTD 2)

Ethical paper

SECTION – B**(5 X 5 = 25 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K3)**

11. a) Write a Java program to calculate the area and perimeter of basic geometric shapes.
(OR)
b) Write a Java program to compute the Sum and average of three numbers.
12. a) Explain control structures in Java and illustrate with an example using an array.
(OR)
b) Describe constructors in Java—default, parameterized, and copy constructor.
13. a) Analyze how method overloading supports compile-time polymorphism in Java with an appropriate example.
(OR)
b) Illustrate the use of the this keyword in Java with suitable examples.
14. a) Explain the try–catch–finally block in Java with a suitable example.
(OR)
b) Describe thread creation in Java and explain thread priorities.
15. a) Explain byte stream classes and character stream classes in Java with examples.
(OR)
b) Illustrate file creation and reading/writing characters in Java using suitable I/O stream classes.

SECTION – C**(5 X 8 = 40 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.K4 (Or) K5)**

16. a) Briefly discuss: Evolution of Java, data types, variable declaration rules, operators (unary, arithmetic, relational, logical), comments and JDK installation steps.
(OR)
b) Explain command-line arguments in Java. Write a Java program that uses command-line arguments to: Print a greeting message, e.g., Welcome to Java Programming.
17. a) Write a Java program that: Reads n integers into an array, compute and display: sum, average, max/min, and count of even/odd numbers using control structures.
(OR)
b) Discuss classes, objects, methods, attributes, and access specifiers (private, default, protected, public) with proper visibility rules.
18. a) Evaluate the role of inheritance in Java by defining superclass and subclass and assessing the different types of inheritance supported by Java with appropriate examples.
(OR)
b) Design and implement Java programs to illustrate abstract classes and interfaces and compare their functionalities with suitable examples.
19. a) Write a Java program to demonstrate exception handling using try, catch, and finally blocks. Handle a runtime exception and display an appropriate error message.
(OR)
b) Design and explain a multithreaded Java program that demonstrates thread synchronization and inter-thread communication.
20. a) Analyze Java I/O stream architecture. Explain the concept of streams, stream classes, and other useful I/O classes with suitable examples.
(OR)
b) Design and implement Java programs to create a file and demonstrate reading and writing of both bytes and characters. Explain the I/O exceptions involved.
