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21CS654

**Sixth Semester B.E. Degree Examination, June/July 2024**  
**Programming in Java**

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

**Module-1**

- 1 a. Explain 3 OOP's principles. (06 Marks)
- b. Explain the process of compiling and running the Java application with example. (06 Marks)
- c. Discuss the various primitive data types used in Java. (08 Marks)

**OR**

- 2 a. How are arrays declared and initialized in Java? Explain with suitable examples. (10 Marks)
- b. Explain scope and life time of variables with an example. (05 Marks)
- c. Explain automatic type promotion in expressions with rules and a example program. (05 Marks)

**Module-2**

- 3 a. What are different types of operators in Java? Explain them. (10 Marks)
- b. Write a program to find biggest among 3 numbers using ternary operator. (05 Marks)
- c. Differentiate between while and do-while loop in Java. (05 Marks)

**OR**

- 4 a. Write a Java program to perform simple calculator operations. (05 Marks)
- b. Discuss for-each loop with an example. (05 Marks)
- c. Explain jump statements supported by Java with suitable examples. (10 Marks)

**Module-3**

- 5 a. Explain method overloading with an example. (05 Marks)
- b. What are constructors? Explain with an example. (05 Marks)
- c. Explain the following : (10 Marks)
  - (i) This keyword
  - (ii) Garbage collection in Java
  - (iii) Finalize () method.

**OR**

- 6 a. What is inheritance? Explain it with an example. (08 Marks)
- b. Explain method overriding with an example. (06 Marks)
- c. Explain abstract class with an example. (06 Marks)

**Module-4**

- 7 a. What is package? How to create and import package in java? Explain with an example. (10 Marks)
- b. What is an interface? Explain how to define and implement interface by taking suitable example. (10 Marks)

OR

8 a. What is an exception? Explain the following :

- (i) Try
- (ii) Catch
- (iii) Throw
- (iv) Throws
- (v) Finally

(12 Marks)

b. How do you create your own exception class? Explain with a program.

(08 Marks)

Module-5

9 a. Explain the following :

- (i) Enumerations
- (ii) Type wrappers.

(10 Marks)

b. Explain String Buffer and String Builder.

(10 Marks)

OR

10 a. What is string in Java? Explain string class constructors with an example.

(10 Marks)

b. Explain the following :

- (i) String comparison methods.
- (ii) Modifying a string.

(10 Marks)

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