

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular/Supplementary Summer Examination - 2025

Course: B.Tech (Computer Engineering and Allied)

Semester : III

Subject Code & Name: BTCOC305B Object Oriented Programming in JAVA

Max Marks: 60

Date: 25th July 2025

Duration: 3 Hr.

Instructions to the Students:

- 1 Each question carries 12 marks.
- 2 Question No. 1 will be compulsory and include objective-type questions.
- 3 Candidates are required to attempt any four questions from Question No. 2 to Question No. 6.
- 4 The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.
- 5 Use of non-programmable scientific calculators is allowed.
- 6 Assume suitable data wherever necessary and mention it clearly.

Marks

Q. 1 Objective type questions. (Compulsory Question)

12

- 1 Java programs are first compiled into an intermediate form called _____.
a) Bytecode b) Source code c) Assembly code d) Machine code
1
- 2 In Java, the Math class is used for arithmetic and scientific calculations.
a) True b) False
1
- 3 A Java class that cannot be extended is declared as _____.
a) final b) static c) abstract d) void
1
- 4 An exception that occurs due to a divide-by-zero operation is _____.
a) NumberFormatException b) InputMismatchException
c) ArithmeticException d) IOException
1
- 5 In Java, methods with the same name but different parameter lists exhibit _____.
a) Overriding b) Overloading c) Inheritance d) Encapsulation
1
- 6 JavaScript is a _____ scripting language.
a) Server-side b) Client-side c) Standalone d) Native
1
- 7 Match the Pair:
1
1. Abstract class a. Used for polymorphism
2. Interface b. Can't be instantiated
3. Overriding c. Same method, different class
4. Overloading d. Same method, different params
a) 1-b, 2-a, 3-c, 4-d b) 1-a, 2-c, 3-d, 4-b
c) 1-d, 2-b, 3-a, 4-c d) 1-c, 2-d, 3-b, 4-a
- 8 An object in Java is created using the keyword _____.
a) class b) this c) object d) new
1
- 9 Arrays in Java can hold only primitive types, not objects.
a) True b) False
1

- 10 A constructor has the same name as the _____. 1
 a) Package b) Superclass c) Class d) Variable
- 11 The `continue` statement is used to _____ the current iteration of a loop. 1
 a) stop b) repeat c) skip d) terminate
- 12 Match the Pair: 1
- | | |
|-----------------------|-----------------------|
| 1. Constructor | a. Accessor method |
| 2. get method | b. Repetition |
| 3. while | c. Object creation |
| 4. switch | d. Selection |
| a) 1-c, 2-a, 3-b, 4-d | b) 1-a, 2-c, 3-d, 4-b |
| c) 1-d, 2-b, 3-c, 4-a | d) 1-b, 2-d, 3-a, 4-c |

Q. 2 Solve the following. 12

- A)** Define and differentiate between primitive types and reference types in Java. Write a Java program to demonstrate the use of `set` and `get` methods for managing object data. 6
- B)** Write a difference between instance variables and local variables with code snippets. Design a class named `BankAccount` with fields like `accountNumber`, `balance`, and methods like `deposit`, `withdraw`, and `displayDetails`. 6

Q.3 Solve the following. 12

- A)** Describe how `if-else` and `switch` statements differ in terms of control flow. What are the different types of control statements in Java? Explain with examples. 6
- B)** Compare and contrast `while` and `do-while` loops in Java. Create a Java method that uses multiple parameters to calculate the average of three numbers. 6

Q. 4 Solve Any Two of the following. 12

- A)** Explain how a two-dimensional array can be created and used in Java. List the steps involved in creating and using arrays in Java. 6
- B)** Develop a Java program to accept 10 integers using arrays and calculate their sum and print the average and sum on the screen. 6
- C)** Analyze how command-line arguments are handled in Java with an example program. Write advantages of passing arrays to methods versus using global arrays. 6

Q.5 Solve Any Two of the following. 12

- A)** Describe the role of abstract classes and interfaces in Java. Design a Java program to demonstrate polymorphism using an abstract class `Shape` with subclasses `Circle` and 6

Rectangle.

- B)** Define inheritance. How does Java support single and multilevel inheritance? Implement inheritance in Java by creating a superclass `Vehicle` and a subclass `Car` with appropriate fields and methods. **6**
- C)** Differentiate between method overriding and method overloading with suitable examples. Explain why abstract classes is suitable to write a program instead of interfaces in Java. **6**

Q. 6 Solve Any Two of the following. **12**

- A)** What is an exception in Java? Briefly explain the exception hierarchy. What are the basic syntax rules and operators used in JavaScript? **6**
- B)** Explain the use of `finally` block in exception handling with a suitable programming example. Illustrate the use of `try-catch-finally` blocks with a Java program to handle division by zero. **6**
- C)** Design a JavaScript-based web form with input validations for name, age, and contact number using regular expressions. **6**

***** End *****