

2026

COMPUTER SCIENCE — MDC

Paper : CC-5

(Object Oriented Programming)

Full Marks : 75

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer **any five** from the following questions : 2×5
- (a) What is Data Abstraction?
 - (b) What is an object in Java?
 - (c) Define Method Overriding.
 - (d) What is the purpose of the Scanner class?
 - (e) What is a Package?
 - (f) What is the use of the 'throws' keyword?
 - (g) What is information hiding?
 - (h) What is the purpose of the 'this' keyword?
 - (i) What is JDBC?
 - (j) What is the use of the 'break' statement?

Section - A

Answer **any three** from the following questions.

- 2. Write a Java program that accepts an integer and determines whether the number is a palindrome using a user-defined method. 5
- 3. Explain constructor overloading with a suitable Java program example. 1+4
- 4. Explain the concept of classes and objects. Illustrate how objects are created and accessed in Java. 2+3
- 5. Differentiate between the String class and StringBuffer class. Why are String objects said to be immutable? 3+2
- 6. What is Event Handling in Java? Explain the role of event sources and event listeners in the event delegation model. 2+3

Please Turn Over

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Section - B

Answer **any five** from the following questions.

7. (a) Differentiate between Procedure-Oriented Programming and Object-Oriented Programming.
(b) Explain the concepts of encapsulation with suitable examples.
(c) Discuss the advantages of Object-Oriented Programming in software development. 3+3+4
8. What is inheritance? Name and describe the different types of Inheritance. Specify those are possible in Java and those are not. 2+6+2
9. Write a Java program that accepts a sentence from the user and displays :
(a) the total number of words,
(b) the total number of vowels, and
(c) the total number of consonants present in the sentence. 10
10. (a) What are abstract classes? What are abstract methods? Compare abstract classes and interfaces with suitable examples.
(b) Specify how interfaces help in emulating Multiple Inheritance in Java. (2+2+2)+3
11. (a) What is exception handling? Why is it necessary in Java programs?
(b) Explain the use of try, catch and finally blocks with an example.
(c) Create a user-defined exception named NegativeNumberException. Write a Java program that throws this exception when a negative number is entered by the user. 3+2+(2+3)
12. (a) What are one-dimensional and two-dimensional arrays?
(b) Write a Java programme to find the largest element in an array. 4+6
13. (a) How do we import packages? Explain the steps involved in creating and using a user-defined package.
(b) What are wrapper classes? Explain the concept of autoboxing and unboxing with examples. 5+(2+3)
14. Write short notes on (**any two**) : 5×2
(a) Threads in Java
(b) Class Variables and Class Methods
(c) Enumerations in Java
(d) Autoboxing and unboxing.
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