

M.C.A. Sem.-2 Examination

Java Programming

Time : 3.00 Hours]

June-2025

[Max.Marks : 50

Instructions:

- Write both the Sections in the separate answer book.
- Both Sections having equal weightage.
- Draw Diagrams wherever necessary.
- Make Assumptions wherever necessary.

SECTION – I

- Q-1 Answer the following : (Any 3) 9
- a. What is an initializer block? How does it differ from a constructor?
 - b. What is the purpose of `this` keyword in Java?
 - c. Differentiate between abstract class and interface.
 - d. What is the difference between `==` and `equals()` in Java?
- Q-2 Attempt the following : 8
1. List and explain any four features of Java that make it a robust language.
 2. Discuss the differences between `String`, `StringBuilder`, and `StringBuffer`.

OR

Attempt the following :

1. What is a functional interface? How is it used in conjunction with lambda expressions?
 2. Why are Wrapper classes used in Java? Explain with example.
- Q-3 Attempt the following : 8
- a) Write a short note on the use of `BigInteger` or `BigDecimal` in Java.
 - b) Explain the difference between instance methods and static methods in Java with proper code examples.

OR

- Q-3 Attempt the following:
- a) What are access specifiers in Java? Give examples.
 - b) What are generics in Java? Explain the difference between unbounded, bounded, and wildcard type parameters.

(P.T.O)

SECTION – II

- Q-4 Explain the following with an appropriate example. 9
- Comparable and Comparator interfaces
 - throw and throws keywords
 - wait() and notify() methods
- Q-5 Attempt the following: 8
- Name a built-in unchecked exception and unchecked exception in Java
 - Name any two classes from the `java.util` package used in the Collection Framework.
 - Name a class from `java.time` package that represents both date and time.
 - Can a thread be restarted once it is terminated?
 - Name any two methods for inter-thread communication.
 - Name the class in `java.io` that is used for random file access.
 - Name the package that contains Optional class. Also state any two methods of Optional class
 - Which Java class provides methods like `sort()`, `copyOf()` for arrays?
- Q-6 Attempt the following: 8
- Explain multi-catch block.
 - Explain the Set interface of Collection Framework.
 - What is the difference between `map()` and `filter()` in streams?
 - Compare `InputStream` and `Reader`
- OR**
- Q-6 Attempt the following:
- Explain race condition in multithreading. Also explain how to prevent race condition.
 - How do you create a custom exception in Java? Explain with appropriate code.
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