END SEMESTER EXAMINATION: APRIL-MAY, 2024

JAVA PROGRAMMING

Time : 3 Hrs.   Maximum Marks : 60

Note: *Attempt questions from all sections as directed.*

SECTION – A   (24 Marks)

Attempt any **four** *questions out of* **five**.
Each question carries **06** *marks.*

1. Explain three characteristics of Java applets that distinguish them from standalone applications.

2. Provide examples of scenarios that could lead to ArithmeticException and FileNotFoundException. Explain why one is checked and the other unchecked

3. Explain the two ways to create a thread in Java. Provide an example for each method.

P.T.O.

4. Explain the concept of AWT windows in Java. Discuss the role of the Frame class and how it is used to create a simple window.

5. Explain what Java annotations are and how they are used in Java programming. Provide examples of situations where annotations can be beneficial.

SECTION – B　　　　(20 Marks)

Attempt any **two** *questions out of* **three**.

Each question carries **10** *marks.*

6. (a) Differentiate between Classes and Interfaces in Java?

(5)

(b) Explain the benefits of using packages in Java. Provide an example of defining a package with multiple classes, and demonstrate how to use those classes in another package.

(5)

7. (a) Write a Java program that performs various operations on strings, such as concatenation, substring extraction, and finding the index of a character. Ensure the program demonstrates the immutability of strings.

(5)

(b) List and explain at least three types of events in the Java event model. Provide examples of situations where each type of event might occur.

(5)

Multiple Inheritance in Java

8. (a) Explain what Java annotations are and how they are used in Java programming. Provide examples of situations where annotations can be beneficial.

(5)

(b) List and explain three commonly used Java annotations, such as @Override, @Deprecated, or @SuppressWarnings. Discuss their purposes and usage.

(5)

SECTION – C　　　(16 Marks)
(Compulsory)

9. (a) Imagine you are developing a multithreaded Online Banking Transaction Processing System in Java. The system is responsible for handling various types of transactions, such as deposits, withdrawals, and transfers.

(3)

(b) The system must incorporate robust exception handling to ensure the reliability and security of transactions in the above given problem statement.

(3)

(c) Provide the syntax of a lambda expression in Java. Explain how it reduces boilerplate code compared to traditional anonymous classes. (4)

(d) Imagine you are developing an Online Event Ticket Booking System in Java. The system allows users to browse, select, and purchase tickets for various events. Your task is to implement a robust event handling mechanism to ensure a seamless user experience.

Users should be able to browse a list of events, view event details, and select the number of tickets they want to purchase.

The system should provide real-time updates on ticket availability and prices.

Users should be able to book tickets for multiple events simultaneously.

Confirmation messages and receipts should be displayed promptly after successful bookings.

(6)