

KAMARAJ COLLEGE (Autonomous)

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(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(4 Pages)

Reg. No:.....

Question Code: 26E01405

Course Code : 24PMCA21/25PMCA21

PG Degree - End Semester Examinations, April 2026

Second Semester

M.C.A

Advanced Java Programming

(For those who joined in July 2024 and June 2025 onwards)

Time : 3 Hours

Maximum : 75 Marks

PART - A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer :

CO:1 1. Which method pauses the current thread?

- K:1
- (a) sleep() (b) wait()
(c) suspend() (d) stop()

CO:1 2. Why are abstract methods declared without a body?

- K:2
- (a) To reduce memory usage (b) To force subclasses to implement them
(c) To increase execution speed (d) To prevent inheritance

CO:2 3. What is the primary purpose of Java RMI?

- K:1
- (a) To design GUI applications
(b) To call methods on remote objects across networks
(c) To store database records
(d) To compile Java code

CO:2 4. Relate distributed architecture to scalability.

- K:2
- (a) Single system handles all load (b) Only local execution is allowed
(c) No networking is required (d) Multiple systems share processing tasks

CO:3 5. Choose the driver known as the Type-4 driver.

- K:1
- (a) Bridge driver (b) Native-API driver
(c) Network protocol driver (d) Thin driver (pure Java)

- CO:3 6. Show the method used to obtain a database connection.
K:2 (a) Connection.open() (b) System.connect()
(c) DriverManager.getConnection() (d) Database.connect()
- CO:4 7. Select the correct order of servlet lifecycle methods.
K:1 (a) service→init→destroy (b) init→service→destroy
(c) destroy→init→service (d) service→destroy→init
- CO:4 8. Infer a HTTP method usually sends data in the request body.
K:2 (a) GET (b) POST
(c) HEAD (d) OPTIONS
- CO:5 9. Find the primary purpose of JSP in web development.
K:1 (a) To design database schema (b) To create dynamic web pages using Java
(c) To replace HTTP protocol (d) To compile Java programs only
- CO:5 10. Outline the correct group of JSP components.
K:2 (a) Tags, Scriptlets, Expressions, Directives (b) Classes, Threads, Packages
(c) Drivers, Sockets, Streams (d) Frames, Panels, Buttons

PART - B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 250 words.

- CO:1 11. (a) Utilize the significance of multithreading in Java and
K:3 organize the methods to create threads.

(OR)

- (b) Identify the common Java event listener interfaces and their uses.

- CO:2 12. (a) Analyze the architecture of Java Remote Method Invocation
K:4 (RMI) in a distributed environment.

(OR)

- (b) Examine the process of developing an RMI-based distributed application.

- CO:3 13. (a) Apply JDBC concepts to demonstrate how a Java web application connects to a database and retrieves records?

K:3

(OR)

- (b) Identify the uses of JDBC objects in developing database support for a web application.

- CO:4 14. (a) Analyze the working of a Java Servlet in handling client-server communication compared with CGI programming.
K:4

(OR)

- (b) Examine the lifecycle and data-handling mechanisms of a simple Java Servlet.

- CO:5 15. (a) Apply JSP concepts to develop a simple dynamic web page.
K:3

(OR)

- (b) Identify how JSP supports reusable and internationalized web applications.

PART - C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 600 words.

- CO:1 16. (a) Analyze the role of Object-Oriented Programming (OOP) principles, including abstract classes, interfaces, and packages used in designing modular, reusable and maintainable GUI and multithreaded Java applications.
K:4

(OR)

- (b) Examine how Java's features such as Swing, applets, multithreading, event handling, and networking APIs contribute to develop interactive and network-enabled applications.

- CO:2 17. (a) Organize the working of an RMI-based system with remote object activation.
K:3

(OR)

- (b) Identify the role of serialization in Java RMI data transfer.

- CO:3 18. (a) Analyze the impact of selecting an appropriate JDBC driver type on security, scalability and transaction management in distributed web applications.
K:4

(OR)

- (b) Examine the structure and functionality of major JDBC packages. How their classes and interfaces collaborate to

establish connections, execute SQL statements and process query results efficiently?

CO:4 19. (a) Evaluate the role of cookie attributes in ensuring secure and
K:5 reliable session tracking in Java servlet-based web applications.

(OR)

(b) Discuss the advantages and limitations of using cookies for personalization and authentication in servlet-based web applications.

CO:5 20. (a) Design a JSP-based web page that demonstrates the
K:6 coordinated use of expressions, scriptlets, directives and declarations to process user input and generate dynamic output.

(OR)

(b) Design a modular JSP application using appropriate page directives, reusable components and implicit objects to separate presentation logic from business logic.