

KAMARAJ COLLEGE (Autonomous)

Accredited with A+ Grade by NAAC

(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(4 Pages)

Reg. No:.....

Question Code: 26E02008

Course Code : 24UMCA41

UG Degree - End Semester Examinations, April 2026

Fourth Semester

B.C.A

Java Programming

(For those who joined in July 2024 onwards)

Time : 3Hours

Maximum : 75 Marks

PART - A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer :

- CO:1 1. Which of the following is a Java buzzword?
K:1 (a) Interpreted (b) Portable
(c) Object-oriented (d) All of the above
- CO:1 2. The JVM is responsible for _____.
K:2 (a) Compiling Java source code into bytecode (b) Executing bytecode on any platform
(c) Managing memory allocation only (d) Providing GUI components
- CO:2 3. What does the super keyword do in Java?
K:1 (a) Calls a static method of the class (b) Refers to the parent class object or constructor
(c) Declares a method as final (d) Creates a new thread
- CO:2 4. Which statement best describes an interface?
K:1 (a) It can contain both abstract and concrete methods.
(b) It cannot be implemented by classes.
(c) It can only contain abstract methods (before Java 8).
(d) It is used only for exception handling.
- CO:3 5. Which of the following is not a valid way to create a thread?
K:1 (a) Extending Thread class (b) Implementing Runnable interface
(c) Using synchronized keyword (d) Using Executor Service

- CO:3 6. What is the primary purpose of synchronization in
K:2 multithreading?
- (a) To increase CPU speed
 - (b) To prevent multiple threads from accessing shared data concurrently and causing inconsistency
 - (c) To allow threads to run in parallel without locks
 - (d) To convert threads into processes
- CO:4 7. Which AWT component is used for single-line text input?
K:1
- (a) TextField
 - (b) Label
 - (c) TextArea
 - (d) Choice
- CO:4 8. Which layout manager arranges components in a row or column?
K:1
- (a) BorderLayout
 - (b) FlowLayout
 - (c) GridLayout
 - (d) CardLayout
- CO:5 9. Which interface is used to handle mouse events?
K:1
- (a) ActionListener
 - (b) KeyListener
 - (c) WindowListener
 - (d) MouseListener
- CO:5 10. In the Event Delegation Model, the event source is
K:2
- (a) The object that generates the event
 - (b) The object that listens to the event
 - (c) The adapter class
 - (d) The JVM

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) Write a short Java code snippet that declares an integer
K:3 array of size 5, initializes it and prints the sum of its elements.

(OR)

- (b) Given a double value $d = 9.7$, write a code fragment to cast it to an int and explain the result.

- CO:2 12. (a) Write a Java class snippet that demonstrates method
K:3 overloading with two add methods (one for int, one for double).

(OR)

- (b) Write a Java class snippet that demonstrates method

overriding: a base class Animal with speak() and a subclass Dog that overrides speak().

- CO:3 13. (a) Construct a short code example implementing Runnable and starting a thread that prints numbers 1–5.
K:3

(OR)

- (b) Construct a short code example showing a synchronized method that increments a shared counter safely.

- CO:4 14. (a) Write a AWT program fragment that creates a Frame with a Button and a TextField.
K:3

(OR)

- (b) Write a code fragment that sets a FlowLayout on a Panel and adds three Label components.

- CO:5 15. (a) Write an event-handler snippet that implements ActionListener to respond to a button click and update a label.
K:3

(OR)

- (b) Write a java program using a MouseAdapter to handle mouseClicked on a component.

PART – C (5 X 8 = 40 Marks)

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

Answer should not exceed 500 words.

- CO:1 16. (a) Examine the difference between local variables, instance variables and static variables in terms of scope and lifetime.
K:4

(OR)

- (b) Analyze the performance implications of using String concatenation vs. StringBuffer in loops.

- CO:2 17. (a) Interpret the use of the final keyword in preventing inheritance.
K:5

(OR)

- (b) Evaluate when to use an abstract class instead of an interface in application design.

- CO:3 18. (a) Design a producer-consumer problem solution using wait() and notify().
K:6

(OR)

(b) Create a file-handling program that reads a text file and writes its content in uppercase to another file.

CO:4 19. (a) Design a calculator GUI by selecting a suitable layout manager.
K:6

(OR)

(b) Create a simple AWT-based login form with TextField for username, password and a Button for submit.

CO:5 20. (a) Explain the advantages and disadvantages of using Adapter classes in event handling.
K:5

(OR)

(b) Assess the effectiveness of using an inner class to handle button click events in a Java GUI application.