

Dr. Babasaheb Ambedkar Open University
Term End Examination July – 2026

Course	: BCA/DCA	Date	: 09-07-2026
Subject Code	: BCAR/DCAR-204	Time	: 03:00pm to 05:15pm
Subject Name	: Object Oriented Concepts & Programming - I (core Java)	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three) (30)

1. Explain the Java Virtual Machine (JVM). Discuss the Java program execution process, bytecode, compiler, interpreter and the advantages of platform independence.
2. Discuss the concepts of Class, Object, Encapsulation, Inheritance, Polymorphism and Abstraction with suitable examples.
3. Discuss different types of inheritance supported in Java and explain the role of interfaces in achieving multiple inheritance.
4. Explain Java Exception Handling. Discuss the use of try, catch, finally, throw and throws with suitable examples.
5. Discuss the thread life cycle, thread creation methods and synchronization.

Section B

Answer the following (Attempt any four) (20)

1. Explain the purpose of the **main()** method in a Java program.
2. Differentiate between Compiler and Interpreter.
3. Write a short note on ArrayList.
4. Explain Constructor with a suitable example.
5. Write a short note on AWT Controls.
6. Explain Event Delegation Model.

Section C

Part – A (Multiple Choice Questions) (10)

Q.1 Java source code is compiled into:

- | | |
|----------------------|----------------|
| A) Machine Code | B) Bytecode |
| C) Assembly Language | D) Binary File |

Q.2 Which keyword is used to create an object in Java?

- | | |
|----------|-----------|
| A) class | B) object |
| C) new | D) create |

Q.3 Which feature of Object-Oriented Programming allows one class to acquire the properties of another class?

- | | |
|------------------|-----------------|
| A) Encapsulation | B) Inheritance |
| C) Abstraction | D) Polymorphism |

Q.4 Which collection class allows dynamic resizing of elements?

- | | |
|--------------|----------------|
| A) Array | B) LinkedList |
| C) ArrayList | D) VectorTable |

Q.5 Which block is always executed whether an exception occurs or not?

- | | |
|--------|----------|
| A) try | B) catch |
|--------|----------|

C) finally

D) throw

Q.6 Which method starts the execution of a new thread?

A) execute()

B) begin()

C) start()

D) runThread()

Q.7 Which package contains the AWT classes?

A) java.io

B) java.awt

C) java.net

D) java.lang.reflect

Q.8 Which event is generated when a button is clicked in AWT?

A) MouseEvent

B) ActionEvent

C) WindowEvent

D) KeyEvent

Q.9 Which keyword is used to inherit a class in Java?

A) implements

B) extends

C) inherits

D) using

Q.10 Which Graphics class method is commonly used to draw a straight line?

A) drawCircle()

B) drawRect()

C) drawLine()

D) paintLine()

Part – B (State whether the following statements are true or false)

(10)

- 1 Java Bytecode is executed by the Java Virtual Machine (JVM).
- 2 Every Java class can inherit from more than one class directly.
- 3 An object is an instance of a class.
- 4 Constructors do not have any return type.
- 5 ArrayList stores elements in a dynamically resizable collection.
- 6 The **finally** block is generally used for cleanup operations.
- 7 Calling the **run()** method directly always creates a new thread.
- 8 The **java.awt** package provides classes for GUI programming.
- 9 The Event Delegation Model separates event generation from event handling.
- 10 The Graphics class provides methods for drawing shapes and text.
