

MOSHOOD ABIOLA POLYTECHNIC, ABEOKUTA  
DEPARTMENT OF COMPUTER SCIENCE  
FIRST SEMESTER EXAMINATION 2023/2024 SESSION

COURSE TITLE: PROGRAMMING LANGUAGE USING JAVA I  
COURSE CODE: COM 211 UNITS: 3 TIME ALLOTTED: 3 HRS  
CLASS: COMPUTER SCIENCE ND II (FULL-TIME & PART-TIME)

**GENERAL INSTRUCTIONS:** Attempt any Four (4) questions in Section A and only one in Section B  
2. Write only your Matric number on this question paper and nothing else.

**Section A**

1. a) Describe the concept of Array in Java and provide any two advantages using array (6 marks)
- ✓ b) Give the syntactic structure for representing the For-each loop in Java. Hence, what is the purpose of the syntactic structure in Java programming (6 marks)
- ✓ c) Write a Java program that uses For-each loop to print an array list consisting of 33, 3, 5 and 4
- ✗ (ii) Using a syntactic representation, differentiate between Single Dimensional and Multidimensional array (8 marks)
- ✗ 2. Suppose matrix  $A = \begin{bmatrix} 1 & 3 & 4 \\ 3 & 4 & 5 \end{bmatrix}$  and matrix  $B = \begin{bmatrix} 2 & 4 & 7 \\ 4 & 6 & 8 \end{bmatrix}$ . Using multidimensional array approach, write a Java program that add and print the sum of the two matrices (8 marks)
- b) Describe the concept of Event-driven programming (ii) Highlight three advantages of event-driven programming paradigm (8 marks)
- c) State any two disadvantages of using event-driven programming approach (4 marks)
3. What is the meaning of Inheritance in Java programming? Hence, provide four reasons why inheritance is implemented in programming approach (6 marks)
- ✓ b) Describe the general syntax for implementing inheritance in Java (4 marks)
- ✓ c) Explain the notion of Single, Multilevel and Hierarchical inheritance in Java (ii) Provide a code snippet to illustrate example of Java multilevel inheritance (10 marks)
4. What is Polymorphism in Java? (ii) Differentiate between Compile Time and Run Time Polymorphism (6 marks)
- b) Describe any three likely scenarios in programming which may lead to occurrence of exception
- (ii) Differentiate between Checked Exception and Unchecked exception (7 marks)
- ✗ c) Write a simple Java program to illustrate Insufficient Fund exception in a banking transaction scenario (7 marks)
5. Explain the concept of JDBC in Java with reference to its four main components (6 marks)

- b) Write a simple Java program to demonstrate the basic steps of access a database using JDBC (10 marks)
- (ii) How is API related to JDBC? (4 marks)
- c) Highlight four advantages of using Java networking in programming

### SECTION B (PRACTICAL EXAMINATION QUESTIONS)

#### QUESTION 6

- a. Write five features that JAVA has that makes it better than other High Level Programming Language 2.5mks
- b. Write and explain a JAVA structure 2.5mks
- c. Write a JAVA program for a guessing game. Let your program allow user to guess a number between 1 and 100 and compare with a randomly generated number. **Note:** indicate if the guessed number is:  
Too high or Too low. Allow tries for at most 5 times 10mks
- d. Write a JAVA program to find the factorial of any number 5mks

#### QUESTION 7

- a. What is the difference between an array and a List? 2mks
- b. Write the syntax of how to declare an array in JAVA 2mks
- c. Using an array function, write a JAVA program to find a maximum and minimum values of an array of 5 elements 10mks
- d. List and explain six tools from the toolkit and how they are used 6mks