

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 (8 marks)
2. Suppose matrix $A = \begin{matrix} 1 & 3 & 4 \\ 3 & 4 & 5 \end{matrix}$ and matrix $B = \begin{matrix} 2 & 4 & 7 \\ 4 & 6 & 8 \end{matrix}$. 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 (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
(ii) How is API related to JDBC?

(10 marks)

- c) Highlight four advantages of using Java networking in programming

(4 marks)

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