ELIZADE UNIVERSITY
ILARA-MOKIN

FACULTY: BASIC AND APPLIED SCIENCES
DEPARTMENT: MATHEMATICS AND COMPUTER SCIENCE
2nd SEMESTER EXAMINATION
2020 / 2021 **ACADEMIC SESSION**

COURSE CODE: CSC202
DURATION: 2 Hours
COURSE LEADER: Mr. O. Babalola
DURATION: 2 Hours

HOD's SIGNATURE

INSTRUCTION:
Students are warned that possession of any unauthorized materials in an examination is a serious assessment offence.

Candidates should answer any **THREE** Questions. **Question 1 is compulsory.** Use examples as necessary this will show your understanding of the underlying concepts. You must also understand that marks will be awarded for coverage therefore write all the key points as necessary.

1a. You've been assigned by the HOD to present a talk to students of Apostolic High School, Ilara on programming. The title is "Why Java?". Use a 2-page **technical** essay to highlight the uniqueness, properties, and importance of Java in the computing industry as well the various Java platforms. (12 marks). Note that at least 400 words are needed to answer this question.
b. Write once, run anywhere? Explain the why and how of that statement in the context of desktop and mobile applications using a one page **technical** essay (225 words). (6 marks)
c. Explain the processes involved in going from Java code to executable code. (2 marks)
d. What is an API, What is a SDK? What is the importance of the two technologies (5 marks)
e. What is an IDE? Why is it essential? Describe the use of an IDE in programming mentioning its various features which you have previously used. (5 marks)

2. Write a Java program to explain the concept of interfaces
2b. What are access modifiers in Java? Explain the various access modifiers and how to use them. Use Java programs to illustrate each of them.

3a. Discuss extensively on the concept known as **Methods**. Using a JAVA code example, illustrate the following:
i. How is it created?
ii. How is it called?
iii. What are method parameters?
b. State 3 characteristics of an object
c. With a functional code snippet, explain the operation of the following with regards to Java:

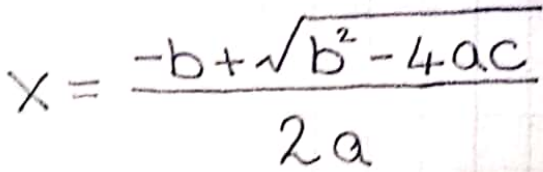*[Going Higher]*

i. test++
ii. ++test
iii. Test2 += Test1

$$x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$

Figure 1

4a. Write a simple JAVA program to compute the Quadratic Formula (to calculate the roots of a quadratic equation based on user input)
b. Briefly discuss the concept of inheritance
c. Given that the class named "Subclass" inherits the properties of and behaviours of the class named "Superclass", how is it written in JAVA?

5a. What are constructors?
b. What is the difference between a constructor and a method?
c. Write a Java program to show different approaches to using constructors

[Going Higher]