CHUKA   UNIVERSITY

UNIVERSITY EXAMINATIONS

CHUKA AND THARAKA CAMPUSES

SECOND YEAR EXAMINATION FOR THE AWARD OF DIPLOMA INCOMPUTER SCIENCE

COSC 0244: FUNDAMENTALS OF OBJECT-ORIENTED PROGRAMMING

STREAMS: DIPLOMA COMP SCI Y2S2   **TIME: 2 HOURS**

DAY/DATE: THURSDAY 13/12/2018   **11.30 A.M. – 1.30 P.M.**

INSTRUCTIONS:
- Answer question **ONE** and **TWO** other questions
- Do not write anything on the question paper
- This is a **closed book exam**, No reference materials are allowed in the examination room
- There will be **NO** use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely.
- Marks are awarded for clear and concise answers.

QUESTION ONE (30 Marks)

a. Define OOP/Object Oriented Programming Language: (2 Marks)

b. Define the following concepts in object-oriented programming: (12 Marks)
   - i. Polymorphism
   - ii. Abstraction
   - iii. Inheritance
   - iv. Encapsulation
   - v. Objects
   - vi. Classes

c. Distinguish between each of the following object-oriented programming concepts:

             (6 Marks)

   - i. Class and Objects
   - ii. Polymorphism and Dynamic Binding
   - iii. Classification and Exemplification

d. Name and Explain three variable types that can be created in an OOP class (6 Marks)

e. Define the following OOP Concepts (4 Marks)
    i.   Source Files
    ii. Packages
    iii. Class Libraries
    iv. Operators

SECTION B (Answer any TWO questions)

QUESTION TWO (20 Marks)

a. Write a Java program that calculates the grade of a student based on the marks entered
    by user in each subject. Program prints the grade based on this logic.
    If the average of marks is >= 80 then prints Grade 'A'
    If the average is <80 and >=60 then prints Grade 'B'
    If the average is <60 and >=40 then prints Grade 'C'
    else prints Grade 'D'

                                                                      (15 Marks

b. Write a Java Program to sum two integers and output them (5 Marks)

QUESTION THREE (20 Marks)

a. Define Applets and Graphics.   (4 Marks)

b. Provide The TWOtypes of Java packages and their functions   (6 Marks)

c. State & explain any THREE syntax rules of a JAVA program   (6 Marks)

d. State the TWO types of MODIFIERS used in class Declaration and provide a keyword for each
                                                                       (4 Marks)

QUESTION FOUR (20 Marks)

a. Write a Java Program that demonstrates method overloading   (8 Marks)

b. What is a Java Program Control Flow Statement? (2 Marks)

c. Name the three types of control flow statements and three examples of each

(10 Marks)

QUESTION FIVE (20 Marks)

a. Discuss the lifecycle of a JAVA applet   (10 Marks)

b. List any THREE primitive data types& and their use in JAVA programming

                                                                                                                (6 Marks)

c. Define and explain the role of an interface in a JAVA program   (4 Marks)