## ****JEREMIAH NYAGAH NATIONAL POLYTECHNIC****

## ****DEPARTMENT OF IT****

## ****UNIT TITLE:**** DEVELOP COMPUTER PROGRAM

## ****COURSE:**** ICT LEVEL 6

## ****DURATION:**** 1 HOUR

### ****Instructions****

### *Answer* ***ALL questions****.*

1. *Write clear and concise responses.*
2. *For programming questions, use* ***C*** *or* ***Java*** *where applicable.*
3. *Neatness and clarity will be awarded marks.*

## ****SECTION A: (15 Marks)****

1. Explain the following terms as used in software engineering: (4 Marks)
   1. Software Development Life Cycle (SDLC)
   2. Source code
   3. Compiler
   4. Debugging

**2.** State and briefly explain **five stages** of the Software Development Life Cycle. (5 Marks)

**3.** Compare **procedural programming** and **object-oriented programming (OOP)** in terms of: (4 Marks)

* Structure
* Reusability
* Security
* Ease of maintenance

**4.** Explain the role of **programming languages** in software development. Give **two examples** of high-level languages and **one** low-level language. (2 Marks)

## ****SECTION B: (15 Marks)****

1. Write a C program that reads the radius of a circle from the user and calculates: (7 Marks)
2. The area of the circle
3. The circumference of the circle
4. Display both results with two decimal places.

Use appropriate variables, constants, and formatted output.

1. Write a simple Java program using **Object-Oriented Programming** that meets the following: (8 Marks)
2. Create a class named Student with attributes name, regNo, and marks.
3. Include a **constructor** to initialize the attributes.
4. Add a **method** displayDetails() that prints the student’s details and grade (A, B, C, D, or E) based on marks.
5. Create a **main class** that creates two student objects and displays their details.