JEREMIAH NYAGAH NATIONAL POLYTECHNIC

DEPARTMENT OF IT

UNIT TITLE: DEVELOP COMPUTER PROGRAM

COURSE: ICT LEVEL 6

DURATION: 1 HOUR

Instructions

i.   *Answer ALL questions.*
ii. *Write clear and concise responses.*
iii. *For programming questions, use **C** or **Java** where applicable.*
iv. *Neatness and clarity will be awarded marks.*

SECTION A: (15 Marks)

1. Explain the following terms as used in software engineering: (4 Marks)
   a) Software Development Life Cycle (SDLC)
   b) Source code
   c) Compiler
   d) 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)

5. Write a C program that reads the radius of a circle from the user and calculates:
        (7 Marks)

   i.   The area of the circle

ii. The circumference of the circle

iii. Display both results with two decimal places.

Use appropriate variables, constants, and formatted output.

6. Write a simple Java program using **Object-Oriented Programming** that meets the following: (8 Marks)

i. Create a class named Student with attributes name, regNo, and marks.

ii. Include a **constructor** to initialize the attributes.

iii. Add a **method** displayDetails() that prints the student's details and grade (A, B, C, D, or E) based on marks.

iv. Create a **main class** that creates two student objects and displays their details.