STRUCTURED PROGRAMMING

CAT 1

INSTRUCTIONS:

- ✓ *CAT 1 exam must be submitted on **Thursday, 9th October 2025** by **5:00 PM***

- ✓ *Late submissions will not be accepted unless prior arrangements have been made and approved by the lecturer.*

- ✓ *Each student is required to work independently. **Copied, identical, or suspiciously similar answers will attract severe penalties,** including. **Deduction of marks, Nullification of the CAT.***

- ✓ *You are encouraged to research and express answers in your own words.*

- ✓ *Answers should be well organized, clear, and concise.*

- ✓ *For any clarification, contact your lecturer at **least 24 hours** before the submission deadline.*

QUESTION ONE (26 MARKS)

a) C language contains reserved words. Briefly describe your understanding of reserved words (2 marks)

b) Identify any 5 reserved words in C (5 marks)

c) Describe the two types of identifiers in C (4 marks)

d) Identify any four identifier naming rules in C (4 marks)

QUESTION TWO (15 MARKS)

a) Write a program in C that stores marks for 5 students in an array. The program should contain a function that calculates the sum and average of the marks in the array **(6 marks)**
b) The following is a C variable declaration statement. Write a pointer to the variable int studentMark=30 **(1 mark)**
c) Identify any two data types in C **(2 marks)**
d) Identify any three examples of computer hardware **(3 marks)**
e) Programs store data temporarily in main memory. Define the term memory cell **(2 Marks)**
f) Part of the syntax of a C program is the pre-processor directives. Identify the role the pre-processor directives play in C **(1 Mark)**

QUESTION THREE (15 MARKS)

a) Discuss any three common programming errors **(6 marks)**
b) Assuming you are an examination officer at your school, write a C program that receives a number between 0 and 100 and displays on the screen the grade for that number **(6 marks)**
c) Identify the role of the scanf() function in C **(1 Mark)**
d) At the weighing office in a coffee factory, farmers, farmers bring their produce in bags. Having been newly hired as a programmer, identify the appropriate datatypes you would use to represent each of the followed: bags of maize each farmer has brought; total weight of coffee each farmer has brought **(2 marks)**

QUESTION FOUR (5 MARKS)

a) Identify any two type of functions in C **(4 marks)**
b) The printf() function is defined in the standard input output library. What is the role of the printf() function **(1 Mark)**