CHUKA **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF
DIPLOMA IN COMPUTER SCIENCE

COSC 0101: SOFTWARE PROJECT MANAGEMENT

STREAMS: DIP (COMP SCI)   YIS1   **TIME: 2 HOURS**

DAY/DATE:

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.

SECTION A (ANSWER ALL QUESTIONS IN THIS SECTION)

Question one (30 marks)

a. Define the following terms:

i. Word Length	[2 marks]
ii. XDR	[2 marks]
iii. Integer representation in internal data representation	[2 marks]

b. Work out the following number systems conversions:
i. Represent 23 in the binary number system   [2 marks]

ii. Work out 2's complements of binary number 010111.1100   [2 marks]

iii. The result of binary multiplication $111_1 \times 10_2$ [2 marks]

**c.** Briefly Summarize the History of computers by generations   [8 marks]

d. Differentiate Pre-emptive from non-pre-emptive scheduling   [4 marks]

e. Explain the difference between RISC and CISC [3 marks]

f. Which 3 parts make up the CPU? [3 marks]

SECTION B (ANSWER ANY TWO QUESTIONS ONLY!!)

Question Two (20 marks)

a. Below is a Von Neumann Machine with TWO Registers, explain it's read and write steps

[10 marks]
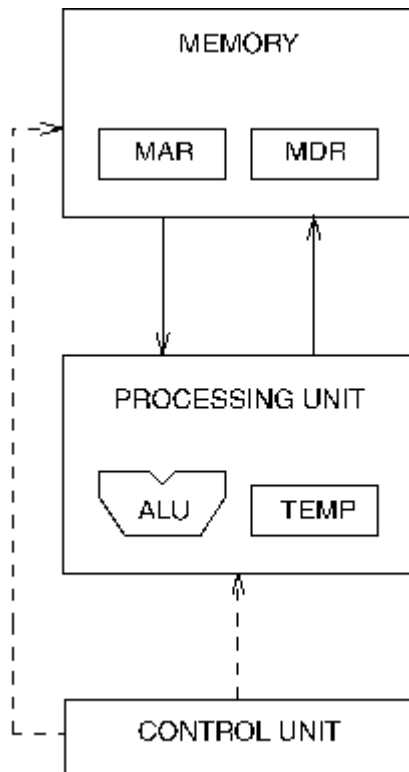
b. List 5 Functions of ALU in Von Neumann Model [5 marks]

c. List FIVE Components of contemporary personal computer systems and Explain their functions (5 marks)

Question Three (20 marks)

a. List and explain FOUR applications of Embedded systems in society. (8 marks)

b. What are the four layers of the computer architecture? [4 marks]

c. List EIGHT components of a modern computer architecture. [8 marks]

Question Four (20 marks)

a. With use of a diagram, show the workings of a Von Neumann MAR/Memory Address
Register circuitry.   [4 marks]

b. List and Explain THREE functions of Operating Systems   [6 marks]

c. SOLVE the following   [10 marks]

      i.   Represent 23 in the binary number system   [2 marks]
      ii.   binary multiplication $111_1 \times 10_2$ is   [2 marks]
      iii. 100101_2 to octal   [2 marks]
      iv.   10011101 to hexadecimal number   [2 marks]
      v.   The range of the numbers which can be stored in an eight-bit register is[2 marks]

Question Five (20 marks)

a. Explain FIVE benefits of the Internet.   [10 marks]

b. Explain FOUR things to avoid when working on a computer.   [8 marks]

c. Explain the use of the following Short cut keyboard functions.   [2marks]

  i. Ctrl + V
  ii. Ctrl + S