**KENYA CERTIFICATE OF BASIC EDUCATION**

**SENIOR SCHOOL ASSESSMENT**

**AUGUST ASSIGNMENT 2026**

**GRADE 10 – COMPUTER STUDIES**

**Time:** 2 Hours

**LEARNER'S DETAILS**

**Name:** _____. **School:** _____.

**Assessment Number:** _____. **Date:** _____.

**School Code:** _____. **Signature:** _____.

**INSTRUCTIONS TO CANDIDATES**

1. Write your name in the spaces provided above.
2. Write the name of your school and your stream in the spaces provided.
3. Write your admission number and the date of the assessment in the spaces provided.
4. This paper consists of two sections: A and B.
5. Answer all questions in section A and section B.
6. Answer the questions in English.
7. All answers MUST be written in the spaces provided in the paper.
8. Do NOT remove any page from this question paper.

**FOR OFFICIAL USE ONLY**

| SECTION | SECTION A | SECTION B | % SCORE | EE1 | EE2 | ME1 | ME2 | AE1 | AE2 | BE1 | BE2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SCORE RANGE | 30 MARKS | 50 MARKS | | 90-100 | 75-89 | 58-74 | 41-57 | 31-40 | 21-30 | 11-20 | 1-10 |
| POINTS | | | | 8 POINTS | 7 POINTS | 6 POINTS | 5 POINTS | 4 POINTS | 3 POINTS | 2 POINTS | 1 POINT |
| LEARNER'S TOTAL SCORE | | | | | | | | | | | |

**SECTION A (30 MARKS)**

**Answer ALL questions in this section.**

1. A learner is studying computer architecture.

**(a) Identify the functional unit labelled CPU (1 mk)**

_____

**(b) Name TWO components inside the CPU (2 mks)**

i) _____

ii) _____

**(c) State ONE function of the ALU (1 mk)**

_____

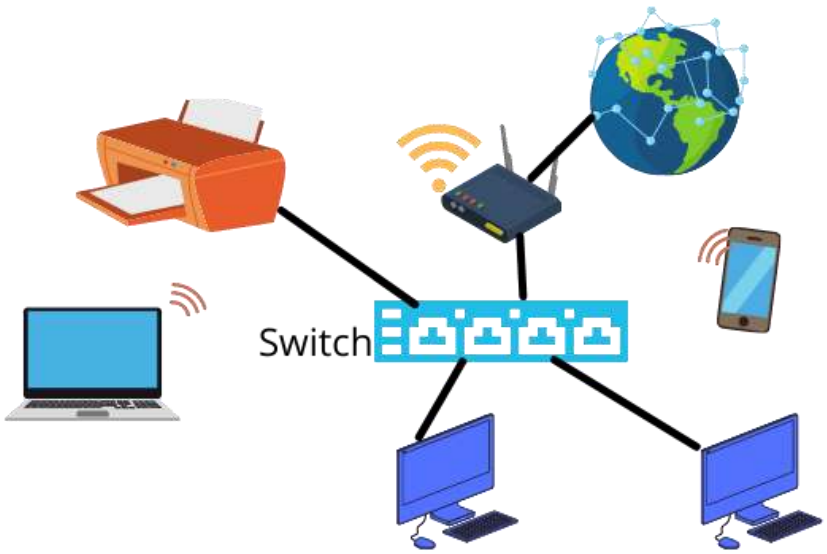
_____

**(d) Define the term "computer architecture" (2 mks)**

_____

_____

**2. Study the diagram:**




A school in **Turkana** is setting up a LAN.

**(a) Name the type of network shown (1 mk)**

_____

**(b) Identify TWO devices used in the diagram (2 mks)**

i) _____

ii) _____

**(c) State ONE advantage of LAN (1 mk)**

_____

**(d) Explain ONE function of a router (2 mks)**

_____

_____

3. Three learners describe programming:

**Aisha:** "It is writing instructions for a computer"

**Brian:** "It is only typing code"

**Kevin:** "It is solving problems using algorithms"

**(a) Identify the correct definition (1 mk)**

_____

**(b) State TWO stages of program development (2 mks)**

i) _____

ii) _____

**(c) Define an algorithm (2 mks)**

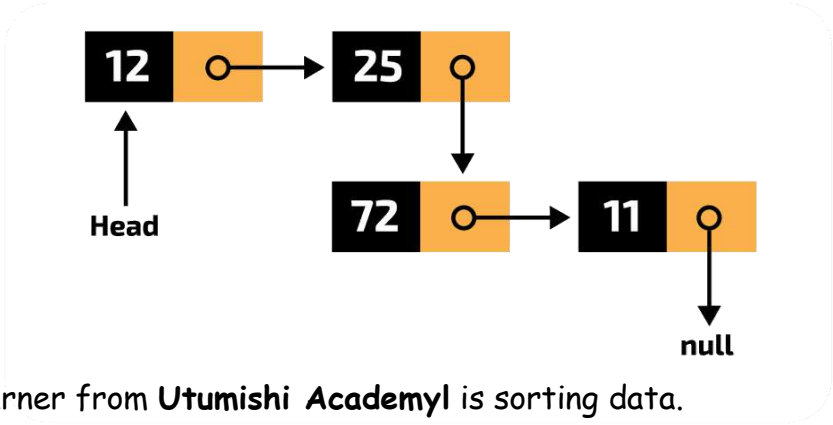
_____

_____

**(d) State whether the following statement is True or False:**

Programming does NOT involve problem solving: _____ (1 mk)

4. **Observe the illustration shown below**




A learner from **Utumishi Academyl** is sorting data.

**(a) Name the structure above (1 mk)**

_____

**(b) State TWO sorting methods (2 mks)**

i) _____

ii) _____

**(c) Define searching in programming (2 mks)**

_____

_____

**(d) Distinguish between list and tuple (1 mk)**

_____

_____

5. Mwangi is connecting the keyboard to the CPU Box as shown

**(a) Identify the cable used (1 mk)** _____

**(b) Name TWO input devices (2 mks)**

i) _____

ii) _____

**(c) State ONE safety precaution when setting up a computer (2 mks)**

_____

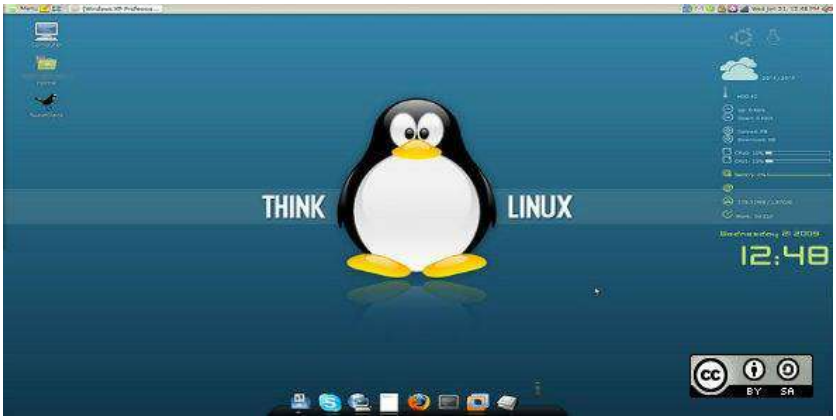
_____

**(d) Define a peripheral device (1 mk)**

_____

_____

6. A learner in **Garissa School** uses her laptop for daily school assignments.




**(a) Name the type of operating system used in her computer (1 mk)**

_____

_____

**(b) State TWO functions of OS (2 mks)**

i) _____

ii) _____

**(c) Explain file management (2 mks)**

_____

_____

**(d) State TRUE or FALSE:** OS manages hardware resources _____ **(1 mk)**

**SECTION B: (50 MARKS)**

7. A school in **Mombasa County** is setting up internet access.

**(a) Explain THREE types of networks (3 mks)**

i) _____

ii) _____

iii) _____

**(b) Describe TWO transmission media used in networking (4 mks)**

i) _____

ii) _____

**(c) State the functions of the following devices in networking:** (3 mks)

| **Device** | **Function** |
|---|---|
| Router | |
| Switch | |
| Modem | |

**8. Study the flowchart:**

Start → Input A,B → Process A+B → Output Sum → End

**(a) Convert into pseudocode (4 mks)**

**(b) State TWO characteristics of an algorithm (2 mks)**

i) _____

ii) _____

**(c) Distinguish between flowchart and pseudo code (4 mks)**

| Flow chart | Pseudo code |
|---|---|
| | |
| | |

9. A technician at **Nairobi School ICT lab** is assembling a PC.

**(a) Identify FOUR CPU components (4 mks)**

i) _____

ii) _____

iii) _____

iv) _____

**(b) Explain the fetch-decode-execute cycle (3 mks)**

i) _____

ii) _____

iii) _____

**(c) Compare RISC and CISC (3 mks)**

| RISC | CISC |
|---|---|
| | |

**10.**

**(a) Identify the components of communication (4 mks)**

i) _____

ii) _____

iii) _____

iv) _____

**(b) State THREE modes of data communication (3 mks)**

i) _____

ii) _____

iii) _____

**(c) Explain two factors affecting communication (3 mks)**

i) _____

ii) _____

**11. Three learners discussed as follows:**

**Learner A:** "Programs use variables and operators"

**Learner B:** "Control structures guide program flow"

**Learner C:** "Data structures store information"

**(a) Define variables (2 mks)**

_____

_____

**(b) Explain control structures (3 mks)**

_____

_____

_____

**(c) Write a simple Python statement to add two numbers (3 mks)**

**(d) List TWO types of operators (2 mks)**

i) _____

ii) _____

**COMPUTER SCIENCE – MARKING SCHEME (80 MARKS)**

**SECTION A (30 MARKS)**

**QUESTION 1: COMPUTER HARDWARE & ARCHITECTURE (6 MARKS)**

**(a)** Central Processing Unit (CPU) ✔ (1 mk)

**(b)** Any TWO:

- Arithmetic and Logic Unit (ALU) ✔
- Control Unit (CU) ✔
- Registers ✔ (any 2 × 1 = 2 mks)

**(c)** Performs arithmetic and logical operations ✔ (1 mk)

**(d)** Computer architecture is the arrangement and interaction of computer components ✔ (2 mks)

**QUESTION 2: NETWORKING (6 MARKS)**

**(a)** Local Area Network (LAN) ✔ (1 mk)

**(b)** Any TWO:

- Router ✔
- Switch ✔
- Computer ✔ (2 mks)

**(c)** Enables resource sharing (files, printers, internet) ✔ (1 mk)

**(d)** Routes data between networks / finds best path for data transmission ✔ (2 mks)

**QUESTION 3: PROGRAMMING BASICS (6 MARKS)**

**(a)** Kevin ✔ (problem solving using algorithms) (1 mk)

**(b)** Any TWO:

- Problem definition ✔
- Coding ✔
- Testing ✔
- Design ✔ (2 mks)

**(c)** A step-by-step procedure for solving a problem ✔ (2 mks)

**(d)** FALSE ✔ (1 mk)

**QUESTION 4: DATA STRUCTURES (6 MARKS)**

**(a)** List ✔ (1 mk)

**(b)** Any TWO:

- Bubble sort ✔
- Selection sort ✔
- Insertion sort ✔
- Quick sort ✔ (2 mks)

**(c)** Searching is finding the location of an element in data ✔ (2 mks)

**(d)** List is mutable while tuple is immutable ✔ (1 mk)

**QUESTION 5: COMPUTER SETUP (6 MARKS)**

**(a)** USB cable ✔ (1 mk)

**(b)** Any TWO:

- Keyboard ✔
- Mouse ✔
- Scanner ✔ (2 mks)

**(c)** Switch off power before connecting devices / avoid wet hands ✔ (2 mks)

**(d)** Devices connected to a computer to input/output data ✔ (1 mk)

**QUESTION 6: OPERATING SYSTEMS (6 MARKS)**

**(a)** Linux OS✔ (1 mk)

**(b)** Any TWO:

- File management ✔
- Memory management ✔
- Process management ✔
- Booting ✔ (2 mks)

**(c)** Organising, storing, retrieving and deleting files ✔ (2 mks)

**(d)** TRUE ✔ (1 mk)

## SECTION B (50 MARKS)

## QUESTION 7: NETWORKING (10 MARKS)

**(a)** Any THREE:

- LAN ✔
- MAN ✔
- WAN ✔
  (3 mks)

**(b)** Any TWO:

- Wired (copper/fibre) ✔
- Wireless (radio waves, Wi-Fi) ✔
  (4 mks)

**(c)** Matching:

- Router → directs data between networks ✔
- Switch → connects devices in LAN ✔
- Modem → converts signals for internet ✔
  (3 mks)

## QUESTION 8: PROGRAM DEVELOPMENT (10 MARKS)

**(a) Pseudocode:**

```
Start
Input A, B
SUM = A + B
Output SUM
End
```

(4 mks)

**(b)** Any TWO:

- Finiteness ✔
- Input ✔
- Output ✔
- Definiteness ✔
  (2 mks)

**(c)**

Flowchart → diagrammatic representation ✔
Pseudocode → written structured steps ✔
(4 mks)

## QUESTION 9: COMPUTER HARDWARE (10 MARKS)

**(a)** Any FOUR:

- ALU ✔
- CU ✔
- Registers ✔
- Buses ✔
  (4 mks)

**(b)**

- Fetch: CPU gets instruction ✔
- Decode: interprets instruction ✔
- Execute: performs operation ✔
  (3 mks)

**(c)**

- RISC: simple instructions, faster ✔
- CISC: complex instructions, slower ✔
  (3 mks)

## QUESTION 10: DATA COMMUNICATION (10 MARKS)

**(a)**

- Sender ✔
- Message ✔
- Medium ✔
- Receiver ✔
  (4 mks)

**(b)** Any THREE:

- Simplex ✔
- Half duplex ✔

- Full duplex ✔
  (3 mks)

**(c)** Any TWO:

- Noise ✔
- Distance ✔
- Bandwidth ✔
- Interference ✔
  (3 mks)

**QUESTION 11: SOFTWARE DEVELOPMENT (10 MARKS)**

**(a)** Variables are memory locations that store data ✔ (2 mks)

**(b)** Control structures guide program flow:

- Sequence ✔
- Selection ✔
- Iteration ✔ (3 mks)

**(c)** Example:

sum = a + b

✔ (3 mks)

**(d)** Any TWO:

- Arithmetic ✔
- Logical ✔
- Relational ✔
- Assignment ✔ (2 mks)