# REPUBLIC OF RWANDA

MINISTRY OF EDUCATION

NATIONAL EXAMINATION AND SCHOOL ASSESSMENT (NESA)

## Senior 5 Computer Science – Paper 1: ANSWER KEY

Computer Systems  
Time: 2 Hours

This document provides model answers to the Computer Systems examination.

## SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS)

1. c)

2. b)

3. c)

4. a)

5. a)

6. c)

7. d)

8. b)

9. d)

10. a)

## SECTION B: SHORT ANSWER QUESTIONS (30 MARKS)

11. A computer system is an integrated set of hardware and software designed to process data into useful information.

12. Three components of the CPU:  
- ALU: Performs arithmetic and logic operations.  
- CU (Control Unit): Directs operations of the processor.  
- Registers: Small storage areas for quick data access.

13. Primary memory (e.g., RAM) is volatile and used for temporary storage while the computer is running.  
Secondary storage (e.g., hard drive) is non-volatile and used for long-term data storage.

14. Four input devices:  
- Keyboard: Used to type text and commands.  
- Mouse: Used to point and click on GUI elements.  
- Scanner: Converts physical documents into digital format.  
- Microphone: Captures audio input.

15. BIOS initializes hardware during the startup process and loads the operating system from storage into memory.

16. System software manages hardware and provides a platform for running application software.

17. A device driver is a specialized software that allows the operating system to communicate with hardware devices.

## SECTION C: STRUCTURED/ESSAY QUESTIONS (20 MARKS)

18. a) Booting Process:  
1. Power is turned on.  
2. POST checks hardware.  
3. BIOS loads bootloader.  
4. Operating system is loaded into memory.  
5. User interface becomes available.  
b) CLI vs GUI:  
- CLI requires typing commands (e.g., Terminal).  
- GUI uses visuals like icons (e.g., Windows Desktop).  
- CLI is faster for experts; GUI is user-friendly.

OR

19. a) Hardware vs Software:  
- Hardware: Physical components like monitor, CPU.  
- Software: Programs and OS that run on hardware.  
- Example: MS Word (software), Keyboard (hardware)  
b) Importance of preventive maintenance:  
- Increases lifespan  
- Reduces breakdowns  
- Ensures data safety  
- Improves performance  
- Saves costs  
Preventive measures include:  
1. Regular cleaning  
2. Software updates  
3. Virus scanning  
4. Backup data  
5. Avoiding overheating