**COMPUTER STUDIES**

**MARKING SCHEME**

**SECTION A: 40 MARKS**

1. **Using arrows, match the following generations of computers with the technology which they relied on.**

**GENERATION TECHNOLOGY**

First Generation VLSI

Second Generation Thermionic valves

Third Generation ICs

Fourth Generation Transistors (4x1 marks)

1. **Give three advantages of the second generation computers.**
* They were smaller in size compared to first generation.
* They more reliable.
* They generated less heat.
* They were less prone to hardware failure. (3x1 marks)
1. **Explain the reason why a computer is referred to as:**
2. *A programmable device*
* It uses a set of instructions to perform different tasks (1 mark)
1. *An electronic device*
* It uses electricity to operate (1 mark)
1. *A processing device*
* It transforms raw data to meaningful information (1 mark)
1. **The illustrations below represent two orientations of a very important part of a desktop computer. Study them to answer the questions below:**

**A**

**B**

1. *Name the object represented in the above images.*
* System unit (1 mark)
1. *Identify the orientations represented in orientations* ***A*** *and* ***B****.*
* A: Tower Orientation B: Desktop orientation (2x1 marks)
1. State **one** advantage of each of the two orientations.
* A: - Is easily upgradeable
* B: - Requires less space on a table since the monitor can be placed on it (2x1 marks)

**5) Give three reasons why a mobile phone is regarded to be a computer**

- It is electronic \* uses electric energy to operate

- It has a display unit (screen)

- It has a keypad

- It has a memory for storage

- It is programmable

**6. (a) Define the term ‘ computer laboratory’ ( 2 mks)**

- A computer laboratory is a room that has been specially prepared to facilitate installation of computers, and provide a safe conducive environment for teaching & learning of Computer studies.

**(b) Give two factors to be considered when preparing a computer laboratory (2 mks)**

- Security of computers

- Reliability of the source of power

- Number of computers to be installed and the amount of space available

- The maximum number of users that the laboratory can accommodate

**7. List down three safety precautions one should observe when entering a computer laboratory (3 mks)**

- Avoid smoking or exposing computers to dust

- Avoid carrying foods & drinks/ beverages to the computer room

- Avoid unnecessary movements as you may accidentally knock the peripheral devices

- Only authorized people should enter the computer room

- Computers users should be trained on how to use computers frequently

- Computer illiterates should not be allowed to operate the computers

- collect any waste papers which might be lying in the computer room & put them into the dustbin

- Shut the door of the computer room properly

**8a). Identify three facilities that will ensure proper ventilation in a room**

 - Large & enough windows and doors

 - Installing fans

 - Installing air conditioning system

 - Avoid overcrowding of either machines or people in the room

**b. Why would it not be good to install Powder or Water – based fire extinguishers in the** **computer room?**

- Powder particles settle on storage devices and may scratch them during read/ write operation

 - Water causes rustling of metallic parts and short – circuits if used

**9. (a) State one reason why a computer needs to be connected to a stable power supply**

**(1 mk)**

 - To prevent damage to the computer’s secondary storage media

- To avoid damage and loss of important data or information such as application software stored on the media

 - Prevent loss of data/ information that had not been saved before the failure

 **(b) List down four functions of the uninterruptible Power Supply (UPS) (4 mks)**

 - It prevents sudden power surges that might destroy the computer

 - It supplies power to the Computer during blackouts and brownouts

 - It provides stable (clean) power supply

 - Alerts the user of power loss (by beeping)

- Allows the user to save his/ her work, and switch off the system using the correct procedure

**10. Mention two things that are likely to cause strain- in the computer room**

 - Poor lighting of the room

 - Bright monitors

 - Flickering monitors

 - Very bright wall paints reflect too much light

1. **(a) What is a peripheral device?**
* they are connected to system unit using cables called data interface cables that carry data and information to and from the devices. (1 mark)
1. *Give* ***three*** *examples of* ***common*** *peripheral devices.*
* Keyboard
* Mouse
* Monitor
* Printer (3x1 marks)
1. **What is the difference between analog and digital computers?**
* Analog process data in continuous form while digital process data in discrete form. (2x1 marks)
1. **Give two reasons why smaller computers like laptops tend to be more expensive than desktop computers.**
* The technology of producing smaller devices is expensive.
* Convenience because of their portability. (2x1 marks)
1. **Computers are classified using three criteria namely, functionality, purpose and physical size. In each of these classes, name and describe:**

 *(a)* ***three*** *types of computers under classification by* ***functionality****.*

* 1. Analog computers
	2. Digital computers
	3. Hybrid computers (3x2 marks)

 *(b)* ***three*** *types of computers under classification by* ***purpose****.*

1. General purpose
2. Special purpose
3. Dedicated purpose (3x2 marks)

 *(c) four types of computers under classification by physical size.*

1. Super computers
2. Mainframe
3. Mini computers
4. Micro computers (4x2 marks)
5. **(a) Explain the meaning of the following mouse techniques:**

 *(i) clicking*

* means pressing and releasing the left mouse button once. (1 mark)

 *(ii) dragging*

* press and hold down left button and the move the mouse to the new location (1 mark)

 *(iii) drop*

* release the button immediately after dragging the item to the new location (1 mark)

 *(iv) right clicking*

* pressing the right hand side mouse button once. (1 mark)

 *(b) Describe three categories of keys found on the keyboard.*

* Functions keys – F1 to F12.
* Alphanumeric (Tying) keys – labelled A – Z, Caps lock, Enter keys, Tab key, Spacebar, backspace etc.
* Cursor movement (Navigation) & Editing keys – arrow keys, Page up and Page down, Home and end keys, Edit keys, Insert key, Delete
* Special keys – Shift, Ctrl, Alt, Esc etc.
* Numeric keys – 0 to 9, +, “, /, - (stating=1, describing/examples = 1, 3x2 marks)

 *(c) Describe the following terms as used in computers:*

 (i) cold booting (1 mark)

* Cold booting is starting up a computer while.

 (ii) warm booting

* restarting a computer (1 mark)

 (iii) hibernating

* A computer that has been turned off but the previous state is stored for easy access of the work that one was previously doing. (1 mark)

 (iv) shut down

* Turning off a computer (1 mark)

 (v) sleeping

* A computer that is on but in a low power consumption mode after it remains for sometimes without being used. (1 mark)

 **(d) Define the following terms (5 marks)**

 (i) information

* Refers to data which has been processed

 (ii) processing

* Refers to the way data is manipulated to turn into information e.g. arithmetic operation, addition subtraction etc.

 (iii) input

* What a computer receives as raw data to process

 (iv) data

* A mass of raw unprocessed facts

 (v) storage

* Saving of information for future reference
1. **(a) What is a computer laboratory?**
* a room that has been specially prepared to facilitate installation of computers and to provide a safe conducive environment for teaching and learning of computer studies (1 mark)

 *(b) State three factors that a school should consider when putting up a computer laboratory.*

* Number of users
* Security of the place
* Availability of power (3x1 marks)

 *(c) Gakondo School has put up a computer laboratory in an area prone to constant power failures. Outline two advices that you could give to the institution.*

* Installation of standby generators
* Use of UPS
* Use of power surge detectors (2x1 marks)

 *(d) Explain three requirements in a computer laboratory.*

* Proper ventilation
* Standard furniture
* Burglar proofing
* Stable power supply
* Dust and dump control
* Protection against fire (3x1 marks)

 *(e) Explain five rules to be observed by students in a computer laboratory.*

* Avoid smoking or exposing computers to dust. Smoke and dust particles can damage computer components.
* Avoid carrying food and beverage to computer room. Food particles may damage computer components while liquids may cause rusting and electrical shocks.
* Avoid unnecessary movements because you may accidentally knock down peripherals devices.
* Follow the correct procedure for starting and shutting down the computer.
* Accidents which may occur should be reported immediately.
* If you are not sure of how to handle or operate any piece of equipment in the laboratory please ask for assistance. (5x1 marks)

 e) State the function of the following keyboard keys

**CAPS Lock.**

Used to switch between capital (uppercase) letters & small (lowercase) letters

**TAB key ( ).**

It is used in certain programs such as Word processors to move the text cursor or a certain text at set intervals on the same line to the required position on the screen

1. **Backspace key.**

It has a backward arrow (**🠠**) marked on it.

Used to erase characters to the left of the cursor

1. **Insert (Ins) key.**

Used in a word processor to switch between the **Insert mode** & **Overtype mode**

* Home

To move the cursor to the beginning of the current line