**MARKING SCHEME**

**COMPUTER STUDIES**

**FORM TWO**

**END TERM 3 2024**

**Time: 2 HOURS ONLY**

1. A computer must go through the process of booting before use. State what happens during Power On Self-Test (POST) (1mk)
* **Computer system software checks that all critical components and resources are available for data processing, so that the computer is ready for use to the user by the help of BIOS**
1. State any two circumstances where sound output devices would not be appropriate

 (2mks)

* **During hardcopy document processing or printing**
* **When visual output like graphics are and motion data is being processed**
1. Software can be categorized according to end user license. Differentiate between a proprietary software and an open source software (2mks)
* **Proprietary is made available to users and is mostly commercial, and its source code is hidden from the user hence can’t be edited. Ownership rights are protected and solely belongs to the engineer company. Open source has its source code “open”, meaning available to users for editing and reproduction.**
1. State the function of each of the following features when creating a document.
* Word wrap **a feature in spreadsheets that allows text or data items to fit in a cell** (1mk)
* Watermark **A value stored in a data file(document) to protect its integrity**  (1mk)
* Clipboard **a buffer for temporary storage of data when transferring data between programs.**  (1mk)
1. Word processing is a major activity in most institutions especially print media.
2. State what is a word processor and give two examples (3mks
* **Application software used to create, edit, format and print text documents. Examples:**
* **Ms word, corel word perfect etc**
1. State four table formatting used in Microsoft word application software. (2mks)
* **Split cells**
* **Merge cells**
* **Format borders**
* **Delete cells**
1. State two advantages of mail merging (2mks)
* **Very Fast hence save time. Send mails in bulk**
* **Minimum errors as it fetches contact details directly from contact list**
1. Give two characteristics of fifth generation of computers (2mks)
* **Invention of artificial intelligence technology**
* **Rise of tiny gadgets technology that are highly powerful**
1. State two advantages of Menu driven interface over a Command based interface.

 (2mks)

* **No need to cram or memorize commands**
* **Menus provide easy access to commands**
1. Give the function of cache memory (1mk)
* **Relieves CPU of storage duties by being a storage for processed tasks hence allowing the cpu to attend other tasks.**
1. Peter the technician connected and installed a scanner to the office computer but when testing he realized it was not responding to the scanning commands, state any two possible causes of the failure (2mks)
* **Unrecognized by the operating system**
* **Faulty communication cable**
* **Scanned object beyond the range of items the device is able to scan. Scanners are task or data specific.**
1. Distinguish between disk compression and file compression (2mks)

**Disc compression allows files to be squeezed into a logical disc partition hence create more logical partition for storing data. File compression is changing data storage format to reduce space occupied by the files.**

1. State two reasons why an antivirus software must be installed on a computer system. (2marks)
* **To remove malware from computer**
* **To scan malwares from devices being connected to the computer**
1. Differentiate the terms portability and Authenticity in relation to computer software specifications. (2mks)
* **Software portability is its ability to be copied in many computers. Authenticity is legitimacy or its genuiness.**

1. The figure below is an extract of a worksheet containing information on household items. Use it to answer the following questions:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | C | D | E | F |
| 1 | **Item description**  | **No of units**  | **Cost per unit**  | **Total cost**  |  |  |
| 2 | Maize flour  | 20 | 210 |  |  |  |
| 3 | Tea leaves  | 64 | 185 |  |  |  |
| 4 | Sugar  | 77 | 149 |  |  |  |
| 5 | Salt  | 28 | 25 |  |  |  |

* 1. What is cell referencing? (1mk)

**Is the cell address for the data being executed in connection to the formula or function being used.**

* 1. Write a formula in cell D4 to calculate the total cost of sugar. (1 mks)

 **=PRODUCT(B4:C4)**

* 1. The prices of all items increased by 10% and the value 10% is placed in cell B8. Using cell addresses with absolute referencing only, write a formula to calculate the new unit of the salt. (2 mks)

**=PRODUCT($B$8:C5)**

* 1. Write a function to display the number of cells in which the cost per unit is equal to 25.

 (2 marks)

 **=COUNTIF(C2:C5, “=25”)**

* 1. Write a function to display the least total cost for all items. (1 mark)

**=MIN(D2:D5)**

* 1. Describe two data types used in spreadsheets (2mks)

 **Labels**

**Value**

**Formula and functions**

* 1. Describe two application areas of spreadsheets (2mks)

 **Accounting**

 **Forecasting**

1. Outline any two advantages of a Light pen as an input device. (2 marks)

**Good for drawing when using smartphones or tablets**

**For selecting items on screen**

1. (a) Identify two advantages of the Speech recognition devices. (2 marks)

**Very fast input method**

**Doesn’t need expertise in use of keyboard keys**

(b) State two situations in which speech recognition devices may be useful as a method of data entry. (2 marks)

**Where data communication and entry needed to be very fast, urgent. Speech devices are fast**

**For people who are handicapped, can’t use their hands to type.**

1. Magnetic Ink Character Reader (MICR) technology uses the principle of magnetism to encode certain characters data. Recommend one application areas where this technology is used. (1 mark)

**cheques verification and reading at banks**

1. Name two factors one would consider when selecting a data input device.

 (2mks)

* **Type of data required to be fed into the computer. Different data types require different devices**
* **Speed of data input**
* **Compatibility with the computer hardware and operating system.**
1. Explain the functions performed by each of the following central processing unit elements. (3mks)
	1. Registers.

**Very fast memory accessible by processor to store input data or output or results of an execution or a computation**

* 1. The Main memory.

**Main execution point for all data that needs processing. Storage for data and instruction to be accessed by CU**

* 1. The System clock.

**Allocates time slices to each task waiting to be processed**

1. In reference to ALU, explain the meaning of logic operations, and give an example of this processing operation. (2mks)

**Are comparison operators eg**

**=,<, >, =>, =<, <>**

1. Give two types of registers found in the CPU. (2 marks)
* **Address**
* **Accumulator**
* **Instruction**
* **Storage**
1. State the function of each of the following computer bus. (2 marks)
2. Address bus.
* **Contain the storage path for the next data to be executed**
1. Control bus.

**Contain all data timings for incoming and outgoing data. Manage time for each activity to be executed.**

1. (a) What is the computer Motherboard? (1 mark)

 **Circuit board for computer where all circuitry for computer devices are etched**.

1. State any four components found on the computer motherboard. (2 marks)

**Rom and ram chips and slots**

**System clock battery**

**CPU chip**

**Ports for hard disk communication cable and other devices**

1. There are several types of operating systems in use today.
2. State two examples of operating systems with which you are familiar. (2 marks)
* **Linux**
* **Android**
* **Windows**
1. State any two basic functions of an operating system software. (2 marks)

**Interrupt handling**

**Memory management**

**Error handling**

**Job scheduling etc.**

1. Name any 2 examples of system interrupts and their possible causes. (4 marks)

**Hardware interrupts e.g. a press of keyboard keys, moving a mouse, printer jam,**

**Disk drive indicating it’s ready for data**

**Software interrupts e.g. software error**

 **(Note: Phone call on a phone is an interrupt)**