

OPENER EXAMINATION: TERM 1 2024
COMPUTER STUDIES : FORM 2 MARKING SCHEME

1. Functions of Central Processing Unit

(3 marks)

- ✓ Control the use of the main memory in storing data & information
- ✓ Processing and manipulation of data into useful information
- ✓ Manages execution of instructions
- ✓ Give commands to all parts of the computer
- ✓ Control the sequence of operations within the computer

2. State two ways of warm booting a computer.

- ✓ Using the restart button
- ✓ Press CTRL+ALT+DEL on the keyboard
- ✓ Using the operating system command

3. Explain three ways in which a computer system can be used in electing a school captain.

- Database for storing voters details.
- Spreadsheet for analyzing data after voting process
- Word processor for writing report, memos

Electronic voting system (biometric system) for voter's registration.

4. List four factors to be considered when purchasing an operating system.

- hardware configuration
- processor type and memory
- applications intended for the computer
- user friendliness
- available documentation such as user manuals and installation guides.
- the cost of the operating system. Some operating systems require the user to pay license fee while others like linux are relatively free.
- network and data security provided by the operating system.
- number of processors and users supported by the operating system.

5. ROM (Read Only Memory) it is used to store programmed instruction and data permanently or semi permanently.

- Data and instruction stored in Rom are those required to remain uncharged for long period of time
 - RAM (Random Access Memory) its content can be read directly regardless of the sequence in which it is stored.
 - Its content is held temporarily and if content lost, is lost once the computer is turned off.
6. Hard disk provides greater storage capacity than the floppy disk.

Hard disk operates or much higher retrieval speed

7. State two reasons to justify why users are advised to follow the right procedure when shutting down the computer.
- To avoid data loss
 - To avoid crashing or breakdown of internal components such as main memory.

8. Reasons why a calculator is a computer.

It can process data into information hence it contains a processor.

It has a keypad used for data entry.

It has a screen for data output.

It contains a memory for data storage.

Some are programmable.

9. Causes of computer data loss.

Computer virus infection.

Accidental deletion of files.

Improper shutting down of the computer.

Disk crashing.

Power function.

10. characteristics of random access memory

it is volatile.

Data can both be read and written in it.

It uses direct access method.

Its content is user defined.

11. situations when a computer user will be required to format a disk.

When the files are corrupted by viruses.

When the disk is full and the user would want to store in new data.

To enable the operating system recognize and access the disk.

When it contains unwanted files.

12. Give three reasons why one may go for hard copy output

- ✓ Can be used without power
- ✓ They are difficult to change without leaving any trace.
- ✓ Are resistant to damage from electronic failure and viruses.

13. Explain three types of computer buses.

Address bus-this is a one way bus that carries the address of the next piece of instruction to be processed.

Data bus-this is a twos way bus that carries data signals to and from the microprocessor.

Control bus-it is a one way bus that carries command signals.

14. List three factors that determine the cost of a computer.

Processor speed and type

Random access memory capacity

Hard disk capacity

Technology used to make the monitor and its size

15. State three characteristics which make computers better than human beings.

Computers are automatic

Computers are fast

Computers are capable of performing any task

Computers can store a lot of information

Computers are accurate.

16. a) name four different types of ROM

masked ROM

programmable read only memory (PROM)

erasable programmable read only memory (EPROM)

electrically erasable read only memory(EEROM)

b) give three characteristics of ROM

provides permanent or semi-permanent storage of instructions and data from the manufacturer.

It is non volatile memory

It can only be read and not written to unless it is a special type of ROM. Download this and other FREE materials from <https://teacher.co.ke/notes>

c) Name four components found in the System unit.

Hard drive

Motherboard

Cooling fan

Random access memory

Power supply

d) Explain the correct procedure for shutting down the computers in the computer

Laboratory. (4 marks)

1. Save all the work done on the computer, and close all programs that may be currently running.
2. Remove any floppy disk you might have inserted in the computer.
3. Follow the proper shut-down procedure required before switching off the computer.

For example;

To turn off any computer running Windows operating systems:

- a). Click the Start button on the screen, then select Shut Down from the list.
- b). In the prompt that appears, select Shut down, then press the Enter key on the keyboard.
- c). After a few seconds, the message "*It is now safe to turn off the computer*" appears on the screen.

Switch off the System unit, then the Monitor.

17. a) Write the following abbreviations in full: (5 marks)

- i) CPU- central processing unit
- ii) ALU-Arithmetic logic unit
- iii) RAM-Random access memory
- iv) MICR-Magnetic ink character reader
- v) OMR-optical mark reader

b) State four limitations of speech recognition devices found today.

- a. Homophones-some words have same sounds
- b. Word separation-each word must be followed by a short period of silence
- c. Speaker variability-the speed, tone, accent, loudness and pronunciation of an individual speaker can vary
- d. Limited vocabulary understood and the number of speakers they can recognize
- e. The response rate of these devices are still relatively slow
- f. Speech input is complex to develop and is still at the early stages of development.

e) State three advantages of using a bar code reader.

- i. They are very fast and accurate provided that the bar code has been printed clearly
- ii. It is a cost saving method

- iii. Saves time. The prices do not have to be attached to each item in the store because the details are already held in a master file.
- iv. Do not require special skills to operate
- v. It improves customer convenience.

State three types of processors

1. Microprocessors.
2. Reduced instruction set computer (RISC) processors.
3. Complete instruction set computer (CISC) processors

Disadvantages of using computers

- 1) Computers are very costly in terms of purchase & maintenance.
- 2) Computers can only be used areas where there is source of power.
- 3) Requires skilled manpower to operate, i.e., one has to have some knowledge so as to operate a computer.
- 4) The records are usually kept in a form that is not visible or human-readable. This makes it difficult to control the contents of the computer's master file.
- 5) A computer, like any other machine can break down.
- 6) Information stored in computers can easily get lost due to power interruptions or machine breakdown.
- 7) A computer doesn't have its own intelligence, i.e., it cannot do any useful job on its own, but can only work as per the set of instructions issued.
- 8) Installation of computers causes retraining or retrenchment of staff/ employees.
- 9) The computer technology is changing very fast such that the already bought computers could be made obsolete/ out dated in the next few years.

In addition, this rapid change in the computer technology makes computers & related facilities to become outdated very fast, hence posing a risk of capital loss.

- 10) The emergence of computers has increased the rate of unemployment since they are now being used to perform the jobs, which were done by human beings.
- 11) Computers have led to increase in computer crimes especially in Banks. The computer criminals steal large amounts of funds belonging to various companies by transferring them out of their company accounts illegally. In addition, they destroy vital data used in running the companies.

What is a computer laboratory?

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A computer laboratory is 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. The following factors must be considered when preparing a computer laboratory.

State four factors to be considered when setting up a computer laboratory.

1. Security of computers, programs and other resources.
2. Reliability of the source of power.
3. The number of computers to be installed and the available floor space.
4. The maximum number of users that the laboratory can accommodate.

state four categories of keys on the key board.

Alphanumeric keys

Function keys

Cursor movement and editing keys

Special

PC operation keys

Numeric keypad keys

state five functions of the operating system.

Job

Job scheduling

Resource control and allocation

Input/output handling

Memory management

Error handling

Job sequencing

Interrupt handling

State four ways of identifying an illegal copy of an operating system

- a. No license agreement
- b. Prices are extremely cheap
- c. No documentation manual
- d. Frequent run-time or occurrence of fatal errors when using the machine
- e. When one connects to the internet for authentication, the report from the manufacturer indicates that the user may be a victim of counterfeit.

Give three details about a file that is stored by an operating system

File name

Date and time of creation

File size

File type

Storage location or path

List any three programs that always run in the background when a computer is started.

Antivirus

Time and date

Network connection

Volume control

State four major categories of computer hardware.

1. Input devices
2. Output devices
3. Storage devices
4. Central processing unit

State four factors to consider when buying/selecting a monitor

1. Compactibility with the adapter card
2. Memory
3. Monitor size
4. Resolution and refresh rate

State three disadvantages of using printers

1. Very expensive
2. Some printers are noisy
3. Their speed of output is slow
4. Not possible to produce multiple copies, especially the impact printers

In order to enable the control unit to carry out various functions, certain registers are used. Name four major types of registers. (4 marks)

1. Sequence control register
2. Instruction register
3. Instruction decoder
4. Address register
5. System clock

