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(Do not write your School/Centre name or Number anywhere on this booklet.)

S850/1
Subsidiary Information
and Communication
Technology (ICT)
Paper 1
Nov./Dec. 2023
2½ hours



UGANDA NATIONAL EXAMINATIONS BOARD
Uganda Advanced Certificate of Education
SUBSIDIARY ICT
Paper 1
2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES:

The paper is made up of twenty equally weighted questions.

Answer all the questions in this paper.

All the answers should be written in blue or black ink in the spaces provided in the question paper.

Questions	For Examiners' Use Only	
	Marks	Initials
1 - 2		
3 - 4		
5 - 6		
7 - 8		
9 - 10		
11 - 12		
13 - 14		
15 - 16		
17 - 18		
19 - 20		
Total		

Answer all the questions in this paper.

1. (a) **Distinguish between analog and digital computing devices.** (02 marks)

Analog devices process and present data in continuous / variable / changing / wave form **while** Digital devices process and present data in discrete/discontinuous /separate form.

OR Analog devices operate by measuring while digital devices operate by counting

- (b) **List three advantages of digital computing devices.** (03 marks)

- They are very accurate in data processing
- They are more reliable
- They are faster in data processing
- They are easier to configure / set / reprogram
- They are cheaper because they are readily available
- They produce clear and exact results
- They are user friendly

2. (a) **State two possible causes of fire outbreaks in a computer laboratory.**

- Machine malfunction
- Overloading the circuit
- Smoking in the laboratory
- Lightening sparks
- Aging devices / old devices
- High voltage supply in circuit
- Deliberate and malicious activities (Intentional behavior)
- Open or naked live wires
- Carrying liquids in the laboratory
- Damaging cables by rodents like rats
- Keeping flammable materials like petrol

- (b) **Outline three measures a school should put in place to have a secure computer laboratory.** (03 marks)

- Installing CCTV Cameras
- Using qualified electricians for proper wiring
- Putting strong burglar proof of doors and windows to limit physical access
- Employing security personnel to guard laboratory premises
- Regular cleaning of the computer lab to reduce on dust accumulation
- Mounting fire extinguishers
- Proper lighting system
- Using insulated wires
- Putting woolen carpet
- Using strong & appropriate furniture

3. Use the following terms to complete the statements in (a) – (e):

- | | | |
|----------------------|----------------|------------|
| - Diagnostic Utility | - Screen Saver | |
| - WinZip | - Defragmenter | |
| - Backup Utility | - Uninstaller | (05 marks) |

- (a) The utility that automatically displays a moving image or pattern on the monitor when the computer is idle is called... Screen Saver ..
- (b) The utility that is used to remove a software from a computer system is called..... Uninstaller
- (c) The utility that compresses files so that they can be stored or distributed more efficiently is WinZip
- (d) The utility that rearranges files stored on a disk to occupy contiguous storage locations is..... Defragmenter
- (e) The application used to create a duplicate copy of data to safeguard it and enable recovery in the event it is lost is a ... Backup Utility

4. (a) Describe an optical storage device. (02 marks)

A device / hardware that uses light / laser mechanism to write or read (access) data

(b) Give three advantages of using a flash disk over a compact disc. (03 marks)

- A flash disk is more portable
- It is compatible with a variety of devices
- It has faster data access rate
- It has a large storage capacity
- It doesn't need an additional drive to operate
- It is more durable
- It is cheaper in terms of per unit of storage space

5. (a) Define **system software** as used in computers. (02 marks)

It is a software (Collection of programs) that control the operation of a computer and its devices

- (b) List **three types of system software**. (03 marks)

- I. Operating system
- II. Utility software / program (Service programs)
- III. Programming languages

6. (a) State the importance of each of the following devices to a banking institution:

- (i) Closed Circuit Television (CCTV). (01 mark)

- i. For monitoring security
- ii. Providing evidence during investigation

- (ii) Magnetic Ink Character Reader (MICR). (01 mark)

- It helps in reading / recognizing date written on cheques
- It facilitates the verification process of cheques
- It speeds up the process of capturing data from cheques

- (b) Identify **three computerised methods that banks are employing to reduce on time wastage**. (03 marks)

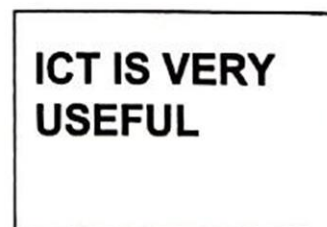
- | | |
|-------------------------------------|--|
| • Use of ATM for self-banking | • Use of Biometric devices |
| • Use of mobile banking | • Use of machines to count large sums of money |
| • Use of online banking | • Use of MICR |
| • Use of credit cards / debit cards | • Use of Agent Banking |
| • Use of Teller system | • Use of EFT service |
| • Use of automatic sms / alters | |

7. (a) Select from **A** and **B** the print orientation **Portrait** ... Δ (01 mark)

A



B



(b) Explain the following print options:

(i) Set as default printer.

(02 marks)

It is an option / feature / printer setting that assigns a particular printer to be automatically selected to run the printing activity

(ii) Current page.

(02 marks)

It is an option that enables the a printer to print a page where cursor is positioned.

8. Use the options below to complete the statements that follow.

- VGA port
- Ethernet port
- Fire wire port
- Parallel port
- PS/2 port

(05 marks)

- (a) The port that connects a network cable to a computer is Ethernet port
- (b) The port that transfers large amounts of data at a very fast speed is FireWire port
- (c) A printer port can be referred to as Parallel Port
- (d) The port that connects a monitor to a system unit is .. VGA port
- (e) Another name for a mouse port is PS/2 port

9. (a) (i) Explain the term Software Suite.

(02 marks)

It is a collection / set / group of individual applications that are sold / obtained / acquired / installed together as a single package / entity.

(ii) Give one example of a Software Suite.

(01 mark)

- | | | | | |
|--------------------|----------------|-------------------|----------------|---------------|
| • Microsoft Office | • WPS | • Kingsoft Office | • Libre Office | • Lotus Suite |
| • Open office | • Smart office | • Google | • Adobe suite | • Apple iWork |

(b) Outline two advantages of off-the-shelf software.

- They are thoroughly tested and hence error / bug free
- They are relatively cheaper
- They readily available
- They have online support
- They are user friendly
- They cater for a wide variety of users
- They can run on multiple operating systems
- They save time
- It is easy to get help from many users because they are popular

10. (a) Write two protocols that facilitate the process of sending and receiving emails. (02 marks)

SMTP (Simple Mail Transfer Protocol)

POP (Post Office Protocol)

IMAP (Internet Message Access Protocol)

- (b) Give three reasons why you would prefer using email to the traditional postal service. (03 marks)

- The message sent by email is usually instant / faster to arrive than tps
- Message can be sent to multiple recipients at the same time by email than TPS
- Messages can be edited in email but for TPS it is not easy
- Time saving
- Timely feedback
- Less prone to illegal access

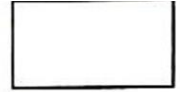
11. Select an option from the given table that describes each of the processor components (a) – (e).

OPTION	DESCRIPTION
I	Fetches, decodes and executes instructions.
II	Performs arithmetic and logical operations on data.
III	Special temporary storage locations within the CPU that quickly accept, store and transfer data and instructions that are being used immediately.
IV	Electronic pathway that transfers information/instructions.
V	Sets the speed with which a computer performs operations.
VI	Is a system that performs programmatic calculations.
VII	Temporary holding area for data which is currently subject to repeated access.

- (a) Clock rate ... V (01 mark)
- (b) Cache VII (01 mark)
- (c) Data bus ... IV (01 mark)
- (d) Control unit I (01 mark)
- (e) Register ... III (01 mark)

12. State the five elements of data communication. (05 marks)

- a) Sender
- b) Message
- c) Transmission Medium
- d) Receiver
- e) Protocol



13. (a) Explain the term digital forensics. (02 marks)

This is the science involved in the collection, analysis and verification of evidence on digital devices for investigation.

OR It is a process of storing, analyzing, retrieving and preserving electrical data used for investigation

(b) Outline any three limitations of digital forensics. (03 marks)

- Shortage of qualified personnel
- Shortage of tools to use in collection of data
- Tampering with the scene of crime
- Use of steganography techniques (Masking of data)
- Lack of physical evidence at the scene
- Encryption of data
- Requires a lot of time

14. (a) State the function of language processors. (01 mark)

- Translate source codes into object / machine codes
- Convert high level languages and assembly codes into machine code / low level languages

(b) Write any two examples of high level programming languages. (02 marks)

Python, JavaScript, Visual Basic, Delphi, Perl, PHP, ECMAScript, Ruby, C#, Java, C++, PASCAL, COBOL, FORTRAN, ADA, ALGOL

(c) Give any two advantages of using high level programming languages.

- They are machine independent
- They are easy to debug
- They are user friendly
- It gives programmer faster chances of making errors when writing codes (error free)

15. (a) Explain the concept of Cloud Computing. (02 marks)

It is the use of internet-based platform to manage / control or access a computer.

OR It is a hosting of remote servers over internet

OR Delivery of different services over the internet

(b) Give three merits of Cloud Computing. (03 marks)

- Provide unlimited storage space
- Faster sharing of resources
- Provision of security on data / data backup
- Improvement in performance as companies operate by virtual servers which are powerful than computers
- It provides employment opportunities
- It enables collaboration / team work

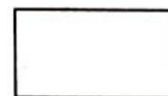
16. (a) State any three network attacks. (03 marks)

Eavesdropping denial of service data alteration vishing

Espionage Hacking cracking sniffing spamming etc

(b) Outline ways of protecting the network against any two of the attacks you have stated in (a). (02 marks)

- Apply secure / strong passwords
- Encryption of data
- Activating firewalls
- Using audit logs / trials



17. (a) Identify any one transmission media that is used in wired networks. (01 mark)

- Twisted Pair Cable
- Coaxial Cable and Fiber Optic Cable

.....

(b) Explain the following terms as used in data communication and networking:

(i) Line of Sight. (02 marks)

It is a signal target path from the transmitter to the receiver device.

OR It is a path in which the transmitter and receiver are proportional to each other

FM radio, microwave, and satellite transmission are examples of line-of-sight communication.

(ii) Attenuation.

(02 marks)

It is the loss or reduction / weakening in the strength or quality of signal during transmission

18. (a) Name any one type of text alignment in a document. (01 mark)

Left Alignment, Right Alignment, Center Alignment, Justified Alignment.

(b) Describe the following features as used in word processing:

(i) Word Wrap.

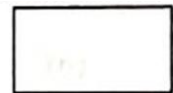
(02 marks)

It is a feature that automatically moves a cursor to the newline without pressing the enter key

(ii) Mail merge.

(02 marks)

It is a feature that allows the duplication of the same document to different recipients.



19. (a) Define a computer network.

(02 marks)

Is a collection of connected computers and network devices to enable communication and resources sharing

(b) Give any three benefits of a computer network.

(03 marks)

- I. Sharing of files
- II. Sharing of hardware
- III. Sharing of resources
- IV. Facilitates communication
- V. Faster data transmission
- VI. Data backup
- VII. Increased storage capacity
- VIII. Increases security
- IX. Enables centralized administration
- X. It is economical

20. The students' table below was extracted from a school database. Study it and answer the questions that follow.

STUDENTS' TABLE

STUDENT NO.	NAME	DISTRICT	TEL-CONTACT	DOB
KT-001	RUBABURA JOHN	SHEEMA	+256-778745445	12/04/1997
KT- 002	LATIM TIMOTHY	NWOYA	+256- 787866857	01/04/2002
KT - 003	SEMPA GEOFFREY	MPIGI	+256-774577887	28/06/1999
KT - 004	AMVIKO MALLET	ARUA	+256-395745564	12/04/2001

- (a) Identify the appropriate primary key. (01 mark)

STUDENT NO.

- (b) Suggest the data type that should be used for the **TEL-CONTACT** field. (01 mark)

Text

- (c) Give one reason for setting up suitable data types. (01 mark)

- For grouping of data, For easy and fast data entry, To reduce

- (d) Write a statement that would return all names of students born after 01/01/2000. (02 marks)

..... >01/01/2000 or >#01/01/2020#

