**Name: ....................................................................................personal number:...................**

**Signature: .............................................................**

**S850/1**

**Subsidiary ICT**

**Paper 1**

**July/August, 2024**

**2 ½ hours**

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**UGANDA TEACHERS’ EDUCATION CONSULT (UTEC)**

Uganda Advanced Certificate of Education

**SUBSIDIARY ICT**

Paper 1

**2 Hours 30 Minutes**

**INSTRUCTIONS TO CANDIDATES:**

*Attempt ALL questions in this paper.*

*This paper is made up of 20 compulsory and equally weighted questions.*

*Write all your responses in dark blue or black ink in the spaces provided.*

*All answers should be written in the spaces provided. No additional material will be provided to the candidate.*

*Unity work will lead to automatic loss of marks.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **FOR OFFICIAL USE ONLY** | | | | |  | |
| **1** |  |  | **11** |  |
| **2** |  | **12** |  |
| **3** |  | **13** |  |
| **4** |  | **14** |  |
| **5** |  | **15** |  |
| **6** |  | **16** |  |
| **7** |  | **17** |  |
| **8** |  | **18** |  |
| **9** |  | **19** |  |
| **10** |  | **20** |  |  |  |
|  |  |  |  |  | **Total** |

*Answer* **all** *questions in this paper.*

1. (a) Name **one** tool used to remove *malware* from a computer software system.

Anti-Virus software for example Microsoft Defender, Norton 360. Bit defender Antivirus, Malware bytes, McAfee Total Protection, ESET NOD32 Antivirus etc.

***(01 mark)***

(b) Give reasons why one would require the following in the computer laboratory;

1. Antistatic Wrist Strap (***01 mark)***

a key piece of protective gear that helps to prevent the build-up of static electricity that may shock the computer technician / User by channelling the electricity through the wire that connects the strap to the ground.

1. UPS.  ***(01 mark)***

* provide backup power as quickly as possible in the event of power loss
* offer some degree of protection from power quality issues that may damage equipment.

1. Dust blower  **(*01 mark)***

* Cleans the dust accumulation from your PC fans and any other hardware such as Keyboard.

1. Fire extinguisher  ***(01mark)***

putting out fires fuelled by electrical equipment, poor wiring and other poor connections

1. The secretary was typing an exam and accidentally deleted the entire content. Outline the keyboard shortcut that could be used retrieve the work. ***(01mark)*** **CTRL+ Z**

(b) Describe the steps that could be taken to save the exam above on a flash disk with a file name exams.docx ***(04 marks)***

* Clicking on the “File” menu.
* Selecting “Save As” to specify a new location or name.
* Naming the file with file name exams.docx and choosing the save location.
* Physically inserting the USB drive into the computer
* Select finally save command
* Tap, eject the USB flash disk

NB. Candidates that use the send too option must specify the fact that the file was already saved on the Hard drive etc.

1. Write the following in full as used in Information and Communication Technology

***(01 X 05=05 marks)***

1. GPU Graphics processing unit
2. RAM Random Access Memory
3. CPU Central Processing Unit
4. CMOS Complementary Metal-Oxide-Semiconductor.
5. BIOS basic input/output system
6. (a) In relation to file management, explain the meaning of file compression and state one example of a file compression utility. ***(02 mark)***
7. a process that reduces the size of one or more files so that they consume less storage space on the hard disk or other preferred storage media.

Example of file compression utility ***(01 mark)***

* WinZip
* WinRAR
* WinAce
* PeaZip
* 7-Zip

(b) Apio is a student who is allowed to use computers in ICT laboratory under the user account Student. She created three folders namely new movies, new pictures, and Personal work on the desktop under drive D. The personal work folder included the two folders Movies and pictures. She created a document with a file name notes.doc.

Write the file path that can be used to access the file notes.doc. ***(02 marks)***

D:\Admin\User\Desktop\personal work\notes.doc

Or

D:\user\desktop\personal work\notes.doc



(x) (y) (z)

(a) Identify the names of the following social media handles labelled x, y and z

***(01x03=03 marks)***

X Facebook

Y Skype

X WhatsApp

(b) Identify any two parts that made up the following URL ***(01 X 02=02 marks)***

https://www.unebassessor.com/ugfiles

https……………….Scheme/protocol

www………………..sub domain referred to as world wide web

unebassessor………..Domain name

.com…………………Top level domain

/ugfiles ………………. Fragment or Sub directory/ file directory

1. (a) Explain the meaning of computer Hardware. ***(02 marks)***

Physical components of a computer

Or

Tangible parts of a computer

Or

Hardware refers to the external and internal devices and equipment that enable you to perform major functions such as input, output, storage, communication, processing, and more.

Outline the functions played by the following parts of the CPU. ***(03 marks)***

1. Control unit

is a component of a computer's Central Processing Unit (CPU) that directs and coordinates the operation of all other parts of the computer

, managing the flow of instructions and data between various components.

NB

* Score candidates that write
* Fetching instructions from memory
* decoding instructions,
* controlling execution of instructions,
* managing data flow,
* monitoring input/output device synchronization.

1. Registers

* store and manipulate data during the execution of instructions.
* A register holds an instruction, a storage address, or any kind of data (such as a bit sequence or individual characters) during execution of instructions

1. ALU

perform arithmetic operations such as addition, subtraction, and multiplication, and logical operations such as NOR, NOT, AND, and OR on data

1. (a) What is the difference between system software and application software?

***(02 marks)***

System software is a computer programme designed to run a computer's hardware and application programs. /Software that manages and runs a computer

**While**

Application software is a programme that helps you perform specific tasks for end users

(b) Outline any three functions of windows operating system to a desktop computer.

***(01 X 03 marks=03 Marks)***

* Security management
* Control over System Performance
* Error Detecting and reporting
* Coordination between Users and Other Software
* Memory Management
* Process Management
* Device Management

1. Define the following terms as used in word processing.

(i) Footer. ***(01 mark)***

* May refer to a piece of text typed/located in the margin area at the bottom of a page

(ii) Word wrap  ***(01 mark)***

* is a feature or technique used in text editors, word processors, and other software applications to automatically wrap text to the next line when it reaches the end of a line or a specified margin.

(b) List any **two** proof reading tools in Microsoft Word ***(01X02 marks)***

* Spelling & Grammar.
* Correct Word Usage / Dictionary option

(c) Give one example of a word processor application. ***(01 X 01 =01mark)***

* Microsoft Word.
* Word star.
* Word perfect.
* Corel.
* Lotus.
* Word pro.
* K Word.
* Abiword.

1. (a) Give **two** software requirements required to connect a computer to the internet. ***(01X 02 =02 marks)***
2. Web browsers e.g. Internet Explorer, Google Chrome etc.
3. The operating system which supports the TCP/IP (Transfer Control Protocol) and HTTP e.g. Windows 7, Windows 8, Windows 10 etc.

(b) Outline **two** disadvantages of connecting computers to the internet ***(01X02=02 marks)***

* Computer Viruses
* Spam and unwanted advertising
* Pornographic and violent images.
* DDoS Attacks
* Cyberstalking.

(c) Mention ***one*** example of a wireless network***. (01 X 01= 01 mark)***

* cell phone networks
* wireless local area networks (WLANs)
* wireless sensor networks
* satellite communication networks
* terrestrial microwave networks

1. Choose the correct terms to complete the statements (a)-(e) in relation to spreadsheets.  ***(01X 05=05 marks)***

**Active cell #REF? #Name? Function formula**

* 1. Is an expression that operates on values in a range of cells **Formula**
  2. The predefined operations on values that perform calculations by using specific values, called arguments is **Function**
  3. When an operation on defined values refers to a named range that doesn't exist or has been deleted results in an excel error called **#NAME?**
  4. An Excel error displayed when a formula refers to a cell that's not valid **#REF?**
  5. **ACTIVE cell** is the selected cell in which data is entered when you begin typing.

1. (a) Give the use of the following windows buttons on the computer application window. ***(03 marks)***



A B C

A Minimize button ……. Rests an open/active application on the task bar

B Maximize button ……. Enlarges the running application to full screen view

C Close button ……..Exists the application to allow saving or proper shutdown of application or entire operating system.

(b). Explain the primary function of the following.

(i). Task bar. ***(01 mark)***

* used to give users quick access to all of their essential programs, applications, settings, and notifications

1. Recycle Bin.  ***(01 mark)***

* acts as a temporary storage location for files and folders that have been deleted from the computer by mistake or purposefully.

1. (a) Distinguish between Guided and Unguided transmission media. ***(02 marks)***

* Guided media is like a physical medium via which the signals are transmitted with use of specially designed cables or wires to aid transmission. Open Wire, Twisted pair, Coaxial Cable, Optical Fibre etc.

**While**

* Unguided transmission media are techniques that allow transmission of electromagnetic waves through a wireless medium for example Microwave Transmission, Radio Transmission, Infrared Transmission

1. State the functions of the following protocols. ***(03 marks)***
2. FTP

A protocol that allows or enables a computer user to download, upload, and transfer files from one location to another on the internet and between computer systems.

1. HTTP

* It allows us to access hypertext documents on WWW
* is used to transfer web pages between a client and a server.

1. TCP/IP

* is a data link protocol used on the internet to let computers and other devices send and receive data.
* Makes it possible for devices connected to the internet to communicate with one another across networks.

1. Study the following table of Library database and answer the following questions

**Book**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ISBN | School  ID | Student  ID | BookTitle | Author | Reader\_Remarks | Cost |
| 444 | 1 | S6B001 | Pure1 | B. | The contents in this book is very good. | $50 |
| 555 | 2 | S6P003 | Pure2 | B. | I like the book. I scored an A in p2 | $55 |
| 666 | 3 | S6P004 | Intro to Phy 3rd Edn | Nelkon | The book is very good for Phy’s students | $60 |
| 222 | 4 | S6A006 | Intro to Phy 6rd Edn | Nelkon | The book is very good for Phy’s students. The contents are brief | $62 |
| 111 | 5 | S6B007 | Sybex N/w 3nd Edn | Todd |  | $40 |
| 777 | 6 | S6A008 | Sybex N/w 6nd Edn | Todd | I like the 6th edn than the 3rd edn | $44 |
| 888 | 7 | S6P009 | Adv Chem | Oboth |  | $56 |

1. Identify the primary key field **ISBN**, **School ID** ***(01 mark)***
2. State any one candidate key field **Student ID**  ***(01 mark)***
3. Determine the number of records and fields respectively.

Total number of fields ***7 (SEVEN)*** ***(01 mark)***

Total number of records ***7 (SEVEN)*** ***(01 mark)***

1. State one validation check that can be performed on the school ID field. ***(01 mark)***

* Range check
* Format check
* Character check

1. (a) The primary vulnerabilities for end user computers are virus, worm, and Trojan horse attacks. (***01 X 03=O3 Marks)***

What are?

1. Viruses

* Is a type of malware that spreads between computers and damages data and software

or

* a type of malicious software, or malware, that spreads between computers and causes damage to data and software.

1. Worm

* a type of malware that can automatically propagate or self-replicate without human interaction, enabling its spread to other computers across a network. For example I LOVE YOU, Michelangelo, MSBlast worms

1. Trojan horse

* a type of malware that downloads onto a computer disguised as a legitimate program.

(b) Suggest any two state the mitigation strategies to stop to spread computer viruses. ***(02 marks)***

* Install an up to date anti-virus program
* Install anti-spyware and anti-malware programs
* Many of these programs are free and prevent viruses from doing any damage on your computer.
* Avoid suspicious websites, check site ratings
* Never open email attachments without screening/scanning them
* Set up automatic scans
* Avoid un necessary downloads
* Educate Your Workforce Teach all ICT users’ security best practices so that they become part of your network security solution rather than being yet another risk factor you have to guard against.

1. (a) List any three image input devices  ***(01X03=03 marks)***

* Digital scanner /Flatbed scanners or simply scanner
* digital still camera or simply digital camera
* Camcorder
* Webcam
* Film camera

(b) Suggest any two factors for the choice of I/O hardware devices to be used in an office environment. ***(01X02 =02 marks)***

* functionality
* reliability
* compatibility
* user-friendliness
* cost-effectiveness

1. (a) Distinguish between a storage medium and storage device. ***(01X 02=02 marks)***

* **A Storage medium** is the physical material on which a computer keeps data.

**While**

* **A Storage Device** reads and writes data to and from a storage medium.

(b) Give two examples of a storage media and one example of a storage device ***(03 marks)***

Storage media ***(Any 01x 02=02 marks)***

* Hard disk
* CD-R, CD-RW
* DVD-R, DVD –RW
* Flash disk
* SD card
* Tape
* Floppy diskettes

Storage device ***(Any 01x 01=01 marks)***

* Hard disk Drive
* Tape Drive
* Floppy disk drive
* CD-ROM drive
* DVD-RW drive
* Flash Drives

1. (a) Give **two** situations under which electronic presentations would be applied.   
    ***(01X 02 =02 marks)***

* Business presentations: PowerPoint is commonly used in businesses to create and deliver presentations to clients, colleagues, or investors.
* Educational presentations: Teachers and educators use PowerPoint to create presentations.

(b) State two advantages of using electronic presentations over the traditional chalk and talk. ***(01X 02 =02 marks)***

* Electronic presentation helps you to give pictorial or visual presentation of what you are saying.
* It is best for explaining complex ideas through diagrams, tables etc.
* It provides summary of the information in a very precise way which can be used in future, for further reference.

(c) Outline the use of slide sorter tool in presentation software. ***(01 mark)***

* Enables one to view entire presentation in one window
* Helps in re-arranging of slides
* Unwanted slides can easily be deleted, renamed and new ones inserted

18. (a) Define data communication. ***(01 mark)***

* Data communication is the process of transferring data, instructions and information from one computer to another computer.

(b) Outline any two benefits of networking computers in an organisation. ***(01X 02 =02 marks)***

* It facilitates easy communication for instance through electronic mail.
* Allow users to log on and access their work from any workstation on the network
* Computer network provides rapid method of sharing files instead of using movable disks.
* Computer networks enable workgroup computing
* It allows software to be upgraded easily on the network since it is done at ago on the server.
* It enable online learning and collaborative research
* Computer network allows sharing of data and information stored on any other computer on the network.
* It reduces on cost by sharing hardwires and software’s among the network since one device is jointly used in the network instead of installing a hardware and a software to each computer.

1. Explain any two causes of attenuation in a communication network. ***(01 X02=02 marks)***

* Range. Both wired and wireless transmissions gradually dissipate in strength over longer distances.
* Interference. Radio interference or physical obstructions, such as walls, dampen communication signals on wireless networks.
* Wire size. Thinner wires suffer from more attenuation than thicker wires on wired networks.

19. Use the terms below to complete the statements that follow. ***(05 marks)***

Webmaster WIFI Web developer   
 Digital forensics Pharming Neural network

1. **Digital forensics** is a branch of science encompassing the recovery, investigation, examination, and analysis of material found in electronic devices, often in relation to mobile devices and computer crime.
2. A method in artificial intelligence that teaches computers to process data in a way that is inspired by the human brain **Neural network**
3. The Technology that allows an electronic device to exchange data using Radio waves over a computer network is **WIFI**
4. Someone who creates and manages the content and organization of a website, manages the computer server and technical programming aspects of a website, or does both is a **Webmaster**
5. **Pharming**  is a type of online fraud that directs victims to spoofed websites in an attempt to steal their credentials and data.

20. Tick five operations that can be performed on a file and a folder ***(05 marks)***

|  |  |
| --- | --- |
| **FILE/FOLDER OPERATION** | **TICK** |
| 1. Copy |  |
| 1. Create shortcut |  |
| 1. Print |  |
| 1. Split or merge |  |
| 1. Pin to start |  |
| 1. Share |  |
| 1. Delete |  |
| 1. Open with | * (in case of zipped folder) |
| 1. Convert |  |

**END**