Candidate's Name:

………………………………………………….

Signature:……………………………………….…

Random No				Personal No.		

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

S850/1
Subsidiary
Information and
Communication
Technology
Paper 1
Nov./Dec. 2013
2 ½ Hours

UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Advanced Certificate of Education

SUBSIDIARY ICT

Paper 1

2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES:

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

The paper is made up of twenty equally weighted questions.

All answers should be written in blue or black ink in the spaces provided on the Question paper

For Examiners' Use Only																				
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.Modern computers transform data into information.

(a) List the **four** stages involved in transforming data into information.   (*04 mark*s)

(i).........data capture and collection ....

(ii).........input... .

(iii)................processing.. .

(iv).........storageand output... .

(b) Identify **one** device that can facilitate any **one** of the stages listed above.

✓ *Cameras, Microphones, etc for data collection.*

✓ *Keyboard, mouse, etc. for input,*

✓ *CPU, Motherboard, etc. for processing,*

✓ *Hard disk,flash disk, etc. for storage,*

✓ *Monitor, printer speakers,etc for output.. .*   .   (*01 mark*)

2. State any **five** characteristics of a computer.   (*05 mark*s)

✓ *Automatic (Spontaneous) the computers are automatic. They do not need any supervision in order to do tasks when instructed.*

✓ *Accuracy Computers are very accurate. The errors in made computing are due to the users but not technological weakness. If a user enters wrong data, the computer gives wrong Information. This trend is described as GIGO (Garbage In, Garbage Out)*

✓ *Versatility: Modern Computers can perform different kinds of tasks at the same time. For example you can play music while typing a document at the same time. This is also known as multi-tasking.*

✓ *Diligence (Endurance) Computers have the ability to perform the same task for a long time without getting tired. This is because a computer is a machine, and so does not have human behaviors of tiredness and lack of concentration. For example: Computers which are used for controlling the satellites.*

✓ *Adaptability: Modern Computers can be adapted to comply with different settings and environments. For example, they can be used as personal computers, for home use, banking, communication, entertainment, weather forecasting, space explorations, teaching, railways, medicine etc.*

✓ *Artificial intelligence: Computers are artificially intelligent i.e. They can be programmed to assume capabilities such as learning, reasoning, adaptation, and self-correction. For example computers can respond as if they were thinking by playing chess, recognize handwriting and speech. However, the computers themselves cannot think. The artificial intelligence is only supported by the power of the programs installed in them.*

✓ *Storage: For a computer to be able to work, it must have some form of work space where data is stored before being processed. All information is stored on a hard disk or in the Random Access Memory (RAM). Etc.*

✓ *Communication: Most computers today have the capability of communicating with other computers. We can connect two or more computers by a communication device such as modem. These computers can share data, instructions, and information. When two or more computers are connected, they form a network.*

3. (a) What is **computer literacy**? (*02 marks*)

✓ *Computer literacy refers to the skills and knowledge about the basic concepts, terminologies and applications in a computerized environment.*

(b) Servicing computers is an activity which should be done regularly. Give**three** reasons why computers should be regularly serviced. (*03 marks*)

✓ *To ensure that the antivirus software is up to date and able to secure the computer against viruses*
✓ *To ensure that the files on the hard disk are not fragmented.*
✓ *To ensure that the computer components are dust free and working smoothly*
✓ *To optimize the computer programs, delete junk and temporally files in order to improve performance and make them to run more quickly.*
✓ *To check for hardware failures and replace worn out components.*

4. (a) What is a **folder** in computer file management? (02marks)

✓ *A folder is a directory on a computer's secondary storage medium where files may be stored.*

(b) Identify the file extensions for the following files.

(i) A word processer document.........*doc, or .docx*.............. (*01 mark*)

(ii) A spreadsheet file.............*xls or .xlsx*.......... (*01 mark*)

(iii) A presentation file..............*ppt or .pptx... ....* (*01 mark*)

5. The following are functions of the Operating Systems. Indicate **True** or**False**. (*05 marks*)

(a) To process a word document	False
(b) To manage storage of documents	True
(c) To monitor system performance	True
(d) To administer security	True
(e) To enter data	False

6.(a) With the help of an example, define a **soft copy**. (*02 marks*)

✓ *A softcopy is the output shown on a display device which exists electronically and is displayed for a temporary period of time.*
✓ *For example, a copy of a document or PowerPoint Presentation that is stored on a disk and displayed on a Monitor or Projector.*

(b)   Judith wants to transfer a file from **one** computer to another. Suggest any **three** devices she could use.   (*03 mark*s)

- *She could use removable storage devices like*
  - ✓ *USB Flash Disk Drive.*
  - ✓ *Compact Disk*
  - ✓ *Digital Versatile Disk (DVD*
  - ✓ *Floppy Disk*
  - ✓ *Memory Card, etc.*
- *She could also transfer the file via a network using network hardware devices and cables.*

7. Use the following terms to complete the statements (a)- (e).   (*05 mark*s)

A Universal Serial Bus, A Control Unit, A register, An Arithmetic Logic unit, A cache memory, A serial port

(a) *A register*is a high speed memory built into the Central ProcessingUnit that temporarily stores data during processing.

(b) .*A Control Unit*is part of the Central Processing Unit that coordinates its operations.

(c) *A Cache memory*is a fast memory chip located on or near the CentralProcessing Unit to help speed up processing.

(d) A *Universal Serial Bus*is used to connect up to 127 peripheral devices to a computer without additional expansion.

(e) *An Arithmetic Logic Unit*is the part of the Central Processing Unit that performs logical operations.

8. List **five**elements that can be displayed on the desktop screen of a normal working computer.

(*05 marks*)

- ✓ *(a)Start Button. Or Start Screen.............................*
- ✓ *(b).Icons (for programs, system directories, file folders, shortcuts, and documents)*
- ✓ *(c)Task Bar.*
- ✓ *(d)Desktop Background Picture...............*
- ✓ *(e)Notification Area (for time, volume, Network notifications etc)...*
- ✓ *(f)Mouse Pointer, e.t.c.*

9.(a)Distinguish between **a Local Area Network** and a **Wide Area Network**.   (*02 mark*s)

- ✓ *A local area network (LAN) is a network that connects computers in a small geographic area such as a building like a computer laboratory, or an office.*

While

- ✓ *A wide Area Network (WAN) is a network that covers a large geographic area, such as a network that connects the district office computers of a company across the country or across several counties in the world.*

(b) Give **three** advantages of computer networks. (*03 marks*)

- ✓ *It allows sharing of hardware like printers.*
- ✓ *It allows sharing of software between two or more computers, hence reducing on cost. Networkable versions of many popular software programs are available at considerable savings when compared to buying individually licensed copies.*
- ✓ *It allows sharing of data and information stored on other computers on the network.*
- ✓ *Facilitate communications between people e.g. through electronic-mail, Mobile phones,e.t.c.*
- ✓ *Security. Files and programs on a network can be safe i.e. passwords can be established for specific directories to restrict access to authorized users. There is tight control over data access in computer networks.*
- ✓ *It allows flexible access to common databases for example in banks.*
- ✓ *Provides for online employment e.g. telecommuting.*
- ✓ *Speed. Networks provide a very rapid method for transferring files.*

10. What suitable application programs would you use to perform the following tasks?

(a) To prepare an invitation letter. (*01 mark*)

- ✓ *A Word processor like Microsoft Office Word.*

(b) To prepare a budget. (*01 mark*)

- ✓ *A spreadsheet application like Microsoft Office Excel*

(c) To produce business cards. (*01 mark*)

- ✓ *A desktop publishing application like Microsoft Publisher*

(d) To prepare an employee data bank. (*01 mark*)

- ✓ *A database management software like Microsoft Office Access*

(e) To prepare a presentation. (*01 mark*)

- ✓ *A presentations application like Microsoft PowerPoint*

11. (a) What is a **social networking website**? (*02 marks*)

- ✓ *A type of website where users can seek others who share their interests, find out what's going on in their areas of concern, and share information with one another.*

(b) List **two** examples of social networking websites. (*02 marks*)

- ✓ *(i).Facebook*
- ✓ *(ii) Twitter*
- ✓ *(iii) Google Plus, etc.*

(c) State **one** disadvantage of social networking websites. (*01 mark*)

- ✓ *They are addictive.*
- ✓ *They are not regarded as formal*
- ✓ *In case one forgets his/her password, signing in is not possible and this can lead to loss of information.*
- ✓ *Social Networks may violate privacy in case someone else gets to know your user password.*
- ✓ *Misinterpretation: One has to be careful while posting any kind of information on social networks. If typed in a hurry, the matter could be misinterpreted.*
- ✓ *Junk Messages: Social Networks are used a lot to send unsolicited messages and unwanted advertisements.*

12. Outline any **five** services that are offered by the internet service providers. (*05 marks*)

- ✓ *Telnet – One of the amazing features of the Internet that lets you use the resources of another computer in another part of the world. This is done by remotely logging to the distant computer which is called the host.*
- ✓ *Email – It allows the transfer of messages, documents, and pictures among others, across the Internet.*
- ✓ *Mailing list – This is based on the email protocol. As an electronic mailing list it is very convenient when somebody wants to send a message or newsletter, for example, to many people in one go.*
- ✓ *Internet Relay Chat (IRC) –Allows people to converse in real time by typing questions and responses. Chats are usually organized in what we call chat rooms.*
- ✓ *File Transfer Protocol – The standard method for transferring files, whether downloading or uploading, to and from your computer with another computer on the Internet.*
- ✓ *Newsgroups – This is an Internet equivalent of a discussion group or an electronic bulletin board. There are newsgroups for every conceivable topic and more, e.g. educational technology.*
- ✓ *World Wide Web – This refers to the global collection of electronic documents called Webpages stored on computers all over the world. As it is the most exciting feature that has revolutionized the Internet, people use this service to surf or browse for information.*

13.(a) State **two** advantages of using E-mail software over ordinary postalletters. (*02 marks*)

- ✓ *Easy to use. Emails applications have user friendly tools that help during composing messages.*
- ✓ *Email supports sending of attachments like documents, zipped files, e.t.c*
- ✓ *It is very fast in terms of speed: The e-mail is delivered instantly, anywhere across the globe.*
- ✓ *Easy to prioritize: Since the mails have subject lines, it is easy to prioritize them and ignore unwanted mails.*
- ✓ *Email messages can be sent to many recipients at the same time*
- ✓ *Emails can also carry hyperlinks that lead to other webpages with just a click*
- ✓ *One can subscribe to news and other online services through email*
- ✓ *Email software have management features that help users to organize their messages in folders like inbox, sent, draft, etc.*
- ✓ *Easier for reference: When one needs to reply to a mail, there is a provision in the mailing*

system to attach the previous mails as references. This refreshes the recipient's knowledge, on what he is reading.

✓ *Environment friendly: Postal mails use paper as a medium to send letters. Electronic mail thus, saves a lot of trees from being axed. It also saves fuel needed in transportation.*

✓ *Email software have address book features that may be sorted in alphabetical order.*

✓ *Email software has a good degree of security features such as username and password before sign in*

✓ *Email applications have inbuilt English dictionary which safeguards the sender from incorrect spelling and grammar.*

✓ *Email is a relatively cheap means of communication since there are no printing or postage expenses involved.*

✓ *There is flexibility in time of opening the e-mail for any time access. At any time of the day or night, one can communicate with friends, relatives, professors and business associates.*

✓ *Messages remain permanent for future and frequent accessing from anywhere.*

✓ *Use of graphics such as colorful greeting cards and interesting pictures can be sent through e-mails.*

✓ *Advertising tool: many individuals and companies are using e-mails to advertise their products, services, etc.*

(b) What are the uses of the following features of e- mail software?

(i) To:.. ....   (*01 mark*)

   ✓ *(To :). Captures the email of the recipient, as entered by the sender.*

(ii) BCC:.. .   (*01 mark*)

   ✓ *BCC: "Blind Carbon Copy" Enables copies of the mail message to be sent to the third party without acknowledging the other recipients.*
   NB: CC: "Carbon copy" enables copies of the email message to be sent to third party while acknowledging other recipients............ ....
                                                                                                                     (*02 marks*)

14.Indicate True or False for the following statements.   (*05 marks*)

(a)	Visual display units can be either input or storage devices...............	*False*
(b)	Output devices provide feedback to the users.............................	*True*
(c)	Dot-matrix printers produce better images than inkjet printers.........	*False*
(d)	Secondary storage media is volatile..	*False*
(e)	The more pixels per square inch on a computer monitor the higher the resolution. .	*True*

15.(a)Define the term **Bluetooth**? (*02 marks*)

✓ *Bluetooth is a communications technology that uses radio waves to transmit data between two devices. Many devices such as phones are Bluetooth-enabled, which means they contain a small chip that allow them to communicate with other Bluetooth-enabled computers and devices.*

(b)   Name any **three** ne**two**rking protocols. (*03 marks*)

✓ *Simple Mail Transfer Protocol (SMTP) - an internet protocol for transferring of e-mails.*
✓ *File Transfer Protocol (FTP): It allows files containing text, programs, graphics, numerical data, and so on to be downloaded off or uploaded onto a network.*
✓ *Internet Protocol (IP) - does the packet forwarding and routing.*
✓ *Transmission Control Protocol/Internet Protocol (TCP/IP) is a network standard that defines how messages (data) are routed from one end of a network to the other, ensuring the data arrives correctly.*
✓ *Transmission Control Protocol (TCP) - responsible for delivery of data over the network.*
✓ *Hypertext Transfer Protocol (HTTP): It allows Web browsers and servers to send and receive Web pages.*
✓ *Simple Network Management Protocol (SNMP): It allows the management of networked nodes to be managed from a single point.*
✓ *Telnet Protocol: It provides terminal emulation that allows a personal computer or workstation to act as a terminal, or access device, for a server.*
✓ *Sequential Packet Exchange (IPX/SPX) - works with the Novell's internet work' packet / sequential exchange; responsible for delivery of sequential data over the network.*

16. Identify **one** purpose of each of the following utilities.

File viewer:.. ... (*01 mark*)

✓ *A file viewer is a utility program that enables a user to open a file of a file extension whose program is not installed on the computer with limited functionality. For example, A PowerPoint viewer will open .ppt files, but will not have all features to handle the file the way PowerPoint does.*

(b)   Disc defragmenter:.. (*01 mark*)

✓ *DISK DEFRAGMENTERS can detect computer files whose contents are broken and spread across several locations on the hard disk, and move the fragments to one location to increase efficiency.*

(c)   Diagnostic:... (*01 mark*)

✓ *A DIAGNOSTIC UTILITY compiles technical information about your computer's hardware and certain system software programs and then prepares a report outlining any identified problems.*

(d)   Antivirus:...   (*01 mark*)

  ✓ *Anti-virus utilities are programs that scan for computer viruses, remove, disinfect and repair damaged files.*

(e)   File Compression:.. .   (*01 mark*)

  ✓ *A file compression utility shrinks the size of a file. A compressed file takes up less storage space than the original file.*

17.   (a) State any **three** computer security risks in the computer laboratory.   (*03 marks*)

  ✓ *Absence of Fire extinguisher poses a fire risk.*
  ✓ *Absence of a lightening conductor on a computer laboratory causes a risk or lightening*
  ✓ *Absence of burglar proofs and strong locks poses a risk of hardware theft*
  ✓ *Absence of strong passwords and firewalls poses a risk of data theft*
  ✓ *(v)Absence of updated antivirus software on a computer posed a risk to data*

(b)   Outline any **two** ways to enforce computer laboratory security.   (*02 marks*)

  ✓ *Configure settings with strong firewall and access passwords*
  ✓ *Establish burglar proofs and strong locks to keep the computers secure from thieves*
  ✓ *Ensure regularly updated antivirus software is protecting the computers against virus attacks*
  ✓ *Install lightening conductor to the computer lab to safeguard against lightening.*
  ✓ *Purchase fire extinguishers to help fight against fie outbreaks.*

18. Give **one** role of each of the following ICT specialists:

Database administrator.   (*01 mark*)

  ✓ *Designing and developing database applications for the organization*
  ✓ *Setting up security measures needed to control access to data and information*
  ✓ *Keeping the database up to date by adding new records, modifying or deleting unnecessary records*

(b) Programmer.   (*01 mark*)
Computer programmers

Large organizations such as insurance companies, banks, manufacturing firms and government agencies hire programmers to work together with system analyst in order to;

  ✓ *Write in house application programs or systems programs*
  ✓ *Customize commercial applications to suite the organization needs*
  ✓ *Test, debug, install and maintain programs developed or customized*

(c) Computer technician.   (*01 mark*)

Computer technicians

Since computers require regular maintenance, upgrading as well as emergency repairs, the demand for computer technicians continues to grow as more computerized workplaces and homes come up. Some responsibilities of a computer technician are:

✓ *Trouble shooting computer hardware and software related problems.* **Troubleshooting***refers to the process of performing a logical, systematic search for the source of a problem so that the product or process can be made operational again.*

✓ *Assembling and upgrading computers and their components*

✓ *Ensuring that all computer related accessories such as printers, scanners modems storage media and other devices are in good working condition*

✓ *Install new programs needed by the company / organization*

(d) Systems Administrator.   (*01 mark*)

Systems administrator

- *The Systems administrator controls, plans, staffs, schedules and monitors all the activities of the ICT department in the organization.*

Other responsibilities of an information system administrator include;

✓ *Making sure that all tasks in the IT departments are done correctly and on time in order to support business planning, control and decision making processes*

✓ *Preparing budgets for the department*

✓ *Keeping the department inventory records up –to – date*

✓ *Managing the Human resource within the department*

(e) Computer Instructor.   (*01 mark*)

Due to dynamic nature of computers and information technology, there is a high demand of qualified ICT trainers.

Roles of an ICT trainer are;

✓ *Training people on how to use various application programs*

✓ *Developing training reference material*

✓ *Guide learners on how to acquire knowledge through carrying out research*

✓ *Advising the learners on the best career opportunities in the broad filed of ICT*

✓ *Preparing learners for ICT examinations*

19. The table below displays information about some KB employees' data. Study it and answer the questions below.

IDNUMBER	EMPLOYEE NAME	DOB	TELEPHONE NUMBER
U01	ARINDARUTH	03/03179	07724311224
U02	NAMBA PERUTH	23/11/68	0413556594

(a) Which suitable application package might have been used to capture the information? (*01 mark*)

 ✓ ....*Database Management Software like Microsoft Office Access*......................................

(b) Name the data types for the following entries

(i) ID Number..................*Text*..............   (*01 mark*)

(ii) DOB..........................*Date/Time*.....   (*01 mark*)

(c) What is the appropriate primary key?   (*01 mark*)

 ✓ *IDNUMBER.*

(d) How many records are shown in the table?   (*01 mark*)

 ✓ *2 records*

20. (a) Define **electronic publishing**.   (*02 marks*)

 ✓ *Electronic publishingthe process of creatingstylishprint documents that contain text graphics and a mixture ofcolors. It is ideal for the production of high quality color documents.*

Name any **three** electronic publications.   (*03 marks*)

 ✓ Corporate newsletters,
 ✓ Business cards,
 ✓ Marketing literature (brochures, flyers, leaflets, banners, etc),
 ✓ Product catalogues,
 ✓ Calendars,
 ✓ Certificates, etc.

END