S850/1
Subsidiary ICT
Paper 1
August 2018
2 ½ hours

UNNASE MOCK EXAMINATIONS

Uganda Advanced Certificate of Education

S850/1 Subsidiary ICT

Theory Paper marking guide

2 Hours 30 Minutes

INSTRUCTIONS TO CANDIDATES:

- *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.*
- *Attempt ALL questions in this paper.*

FOR OFFICIAL USE ONLY						
1	05		**11**	05		
2	05		**12**	05		
3	05		**13**	05		
4	05		**14**	05		
5	05		**15**	05		
6	05		**16**	05		
7	05		**17**	05		
8	05		**18**	05		
9	05		**19**	05		
10	05		**20**	05	**Total**	100%

1. a) In which part of a computer system would the following processes be done:

i) Holding of firm ware

- **ROM chips** **(1 Mark)**

……

ii) Logic and statistical computation

- **Arithmetic Logic Unit (ALU)** **(1 Mark)**

……

iii) Holding of system configurations

- **CMOS Chip** **(1 Mark)**

……

iv) Demonstration of data being processed **(1 Mark)**

- **Monitor/VDU/screen**
- **Projector**

……

b) State ***one*** example of information for a school like yours **(1 Mark)**

- **Average age of a class**
- **Average arrival time of teachers**
- **Total teachers pay or school fees**
- **Average score of a class in a given subject**
- **School circular**
- **Anything that would come as a result of data processing**

……

2. a) As a student of ICT show ***three*** ways in which you would use ICT to improve the management of any sporting activity. **(Any 3x3 = 3 marks)**

- **Use goal line technology and DVRs to adjudicate goal decisions and conflicts**
- **Use spreadsheets to make fixtures of matches**
- **Use spreadsheets to record, manipulate and position winners**
- **Use video cameras and drones to record games for reference purposes**
- **Use radios, internet and Tvs to relay match proceedings to the world of fans**
- **Use databases to take participants profiles.**

……

b) Briefly explain the following ICT concepts

i) Virtualization **(1 mark)**

- **Creation of softwares (Apps) or ICT systems that simulate or work as physical products like radios, torches, watches, TVs, etc**

……

ii) Embedded ICT systems **(1 mark)**

- **Involves integration of several ICT functions in one unit**

……

3. a) Describe the role of the following computer system utilities; **(3 marks)**

i) Defragmenters

- **They reorganize several fragmented sector together**
- **They isolate bad media sectors from good ones** **(Any 1x1 = 1 mark)**

……

ii) Cryptographers **(1 mark)**

- **They secure data by making it not easy to be understood ordinarily without an encryption key.**

……

iii) Anti-virus utilities **(1 mark)**

- **They scan, remove, deactivate or stop virus/malware activity and entry**

……..…….

b) Briefly explain how a computer virus can fail a computer to boot. **(1 mark)**

- **Viruses like boot sector viruses attack and destroy program starter files (.exe files) and linkers in operating systems, making it hard for them to start**

……..…….

c) State **two** factors one would consider when buying a printer.

- **Printer speed – number of copies per minute**
- **Printer make and model**
- **Nature of work to be done**
- **Price of the printer against buyers budget**
- **Availability of printer drivers**
- **Compatibility issues (Any 2x1 = 2 marks)**

……..…….

4. a) Briefly describe how you would move a folder from drive D: to the desktop.

NB: it is about moving not copying. So

- **Locate the folder on drive D and cut it (by any method like Ctrl + X)**
- **Go to the desktop and Paste it (by any method – like Ctrl + V) (2 marks)**

……..…….

b) State ***one*** role of each one of the following default system folders;

i) My Documents folder **(1 mark)**

- **It is a default folder for holding ordinary users files and folders**

……..…….

ii) Program Files folder.

- **It is a default folder for holding system and apps files and folders (1 mark)**

……..…….

iii) My Pictures and my music folders

- **It is a default folder for holding multimedia files, files and folders (1 mark)**

……..…….

5. a) State ***one*** importance of ICT systems servicing.

- **Ensuring continued usage of ICTs without breakages**
- **Extending ICT use life span**
- **Saving costs of repair and buying of new devices early (Any 1x1 = 1 mark)**

……..…….

b) Explain the use of the following tools in ICT systems maintenance.

i) Flat-head screwdriver:

- **Used to tighten or loosen slotted screws. (1 mark)**

……..…….

ii) Flashlight

- **Used to light up areas that you cannot see well. (1 mark)**

……..…….

iii) Cable ties

- **Used to bundle cables neatly inside and outside of a computer (1 mark)**

……..…….

iv) A *digital millimeter*.

- **It is used to test the integrity of circuits and the quality of electricity in computer components.** **(1 mark)**

……

6. a) State ***two*** features of an ordinary keyboard

- **Function keys**
- **Arrow keys**
- **Cursor control keys**
- **Numeric key pad**
- **Shift keys**
- **Enter or return keys**
- **Space bar keys**
- **Typographic area** **(Any 2x2 = 2 marks)**

……

b) Give ***one*** example of scanning input devices.

- **OCR**
- **OMR**
- **Motion sensors**
- **Barcode reader** **(Any 1x1 = 1 mark)**

……

c) Give ***one*** reason to explain why a keyboard would not be treated as a peripheral device

- **A keyboard is a basic device which is central to the booting and functioning of the PC or ICT system. It does not just expand or increase functionality** **(1 mark)**

……

d) State ***one*** example of a cursor control key of the keyboard

- **Arrow keys**
- **Home key**
- **End key**
- **Page up key**
- **Page down key**
- **Delete key**
- **Backspace key** **(Any 1x1 = 1 mark)**

……

7. a) Distinguish primary storage from secondary storage

- **Primary storage is any form of media or device that is important for the system to boot or work. Whereas secondary storage only supplements basic storage that even if it is not there the system can work** **(1 mark)**

……

b) Give ***two*** examples of primary storage media

- **RAM**
- **Registers/Accumulators**
- **CMOS chip**
- **HDD** **(Any 2x1 =2 marks)**

……

c) State ***two*** characteristics of any storage device and media

- **Access time**
- **Capacity/space**
- **Size**

- **Read and write technology**
- **Drive type – spinning or solid state**
- **Media type or name CD, DVD, Flash, Memory stick, etc.**
- **Location or media path.**
- **Nature of partition.** **(Any 2x1 = 2 marks)**

……

8. a) One of the key components of a computer system is its Processor or CPU. As a learner of ICTs state one role of the CPU to the computer system

- **Fetching of instructions or commands:** Instructions are stored in memory and have their own addresses.
- **Decode** The CPU translates programs into Assembly instructions.
- **Execution of commands:** In this, the CPU can do one of three things: Do calculations with its ALU, move data from one memory location to another, or jump to a different address.
- **Store** The CPU gives feedback after executing an instruction and the output data is written to the memory. (Any 1x1 = 1 mark)

……

b) Give **one** example of a good processor for a graphics and animations designer.

- **AMD zen**
- **Core i7 and 5-6402P**
- **Intel Dual Core or Core2** (Any 1x1 = 1 mark)

……

c) State ***one*** example of ICT device or innovation that would be used to perform each one of the following activities:

i) Decide the paternity of a child

- **DNA Test kit** **(1 mark)**

……

ii) Give the speed of an automobile

- **Motion sensor or speed gun** **(1 mark)**

……

iii) Determine the warmth of an incubator

- **Temperature regulator**
- **Heat sensor** **(1 mark)**

……

9. a) Software is said to be the ***artificial intelligence*** of an ICT system. Briefly explain why software is said to be "***artificial intelligence***". **(1 mark)**

Because it is man-made intelligence by an ICT professional called a software engineer

……

b) State ***one*** other characteristic feature of software apart from artificial intelligence

- **Software is intangible**
- **It is the system intelligence.**
- **It performs specific**
- **It is in a variety of forms** (Any 1x1 = 1 mark)

(NB: the question is not looking at qualities of good software)

……

c) We are increasingly living in the world of Apps. What are Apps? **(1 mark)**

Apps are various user specific softwares for performing user specific duties

……

d) Give two examples of Apps common in mobile devices

- **Browsing Apps like Google Chrome, safari, Mozilla Firefox, Google, etc.**
- **Document processing Apps like – Ms Word, etc**
- **Gaming Apps like Cue club, motor racing**
- **Social media Apps like face-book, messenger, Viber, etc**
- **Etc** **(2 marks)**

……..…….

10. a) Distinguish a software version from a release.

- **A release is <u>a minor upgrade</u> in a software product, while version is a <u>major upgrade</u> in a software product (1 mark)**

……..…….

b) State ***two*** characteristics of a failed operating system

- **Blurred screen**
- **Display of a blue empty screen**
- **Failure to complete the booting process (Any 2x1 = 2 marks)**

……..…….

c) Explain ***two*** factors one should consider when buying computerized devices software.

- **Purpose/function. Different softwares are suitable for different functions.**
- **Price**
- **Compatibility. Ability to run on different platforms**
- **Safety provisions**
- **Bugs free**
- **Nature of interface**
- **Amount of space occupied on storage media**
- **Efficiency and effectiveness**
- **Loads easily**
- **Upgradability (Any 2x1 = 2 marks)**

……..…….

11. a) One of the features that make a software user friendly is its interface. With some help of a relevant example, state the meaning of a software interface.

- **Interface refers to tools and systems through which users interact with the computer or ICT system. E.g.; icons, dialogue boxes, menu systems, command boxes, touch screens, voice recognition systems, etc. (2 marks)**

……..…….

b) Give two unique distinctive features of a spreadsheet application software interface.

- **Inbuilt functions and formulas**
- **Inbuilt rows and columns**
- **Worksheet tabs**
- **Inbuilt charts**
- **Data manipulation menu** (2 marks)

……..…….

c) Briefly show how computer hardware is different from computer software.

- **Hardware is physical, tangible or electromechanical, while software is intangible (1 mark)**

……..…….

12. a) One of the dangers of the internet and WWW is their controversial content. As a student of ICT;
i) Distinguish the Internet from WWW

- **Internet is a network while WWW is a set hyperlinked electronic documents.**

(1 mark)

……..…….

ii) Give ***two*** examples of such content that circulates through the internet

- **Slander**
- **Malware** (2 marks)

……..…….

iii) State ***two*** examples of The Internet and WWW communication and collaboration tools

- **E-mails**
- **Skype**
- **Internet telephone**
- **Google hangouts**
- **Google Docs**
- **Google drive**
- **Drop Box**
- **One drive**
- **Media fire**
- **Hipchat**
- **Slack**
- **Go ToMeeting**
- **Messenger**
- **Whatsup**
- **Cage**
- **InVision**
- **Logo Maker**
- **Online websites**
- **Zoho**
- **Etc**

(Any 2x1 = 2 marks)

……...…….

13. a) Research is ***one*** of the kilos of The Internet and WWW. As their ardent fun state one of their tools that can support the following;

i) Research:

- **Online e-books like encyclopedias**
- **Search engines**
- **Online dictionaries**
- **Online journals or periodicals**
- **Various websites like blogs**
- **Etc** **(Any 1x1 = 1 mark)**

……...…….

ii) Business

- **Online banking and funds transfer systems that facilitate payments**
- **Websites for business promotions/adverts**
- **Business websites – like Tradecar view, Everbuying and Amazon.**
- **Online courier service providers who facilitate movement of business documents (Any 1x1 = 1 mark)**

……...…….

iii) Entertainment and leisure:

- **Online E-zoos**
- **Online movies and video sites like YouTube**
- **Online music sites – like mudundo.com**

- **Online TV and Radio services**
- **Online dating sites**
- **Online pastoral/preaching sites** **(Any 1x1 = 1 mark)**

……..…….

b) State ***two*** factors a research firm would consider when choosing hosting service provider:

- **Bandwidth** - lots of graphics, dozens of pages, and large amounts of traffic, you're going to need decent bandwidth and disk space.
- **Compatibility** – like supported operating systems
- **Reliability and availability** - looking at site "Uptime."
- **Security** – like host firewalls, daily backups, and user authentication (Any 2x1 = 2 marks)

……..…….

14. a) Explain how a student would make use of the following tools in his/her academic work:

i) Messenger and whatsup

Students would;

- **Update themselves about missed lessons**
- **Share electronic notes and other electronic study resources like practical videoz**
- **Forward assignments**
- **Make any academic inquiries** **(Any 1x1 = 1 mark)**

……..…….

ii) Discussion board

- **Students would use the facility to share research and knowledge about curriculum or subject topical issues** **(Any 1x1 = 1 mark)**

……..……

iii) News group

- **Update themselves about missed lessons**
- **Share changes in timetables and new topics or coverage**
- **Make any academic inquiries** **(Any 1x1 = 1 mark)**

……..…….

b) State ***one*** quality of a good website

- **Not biased – Has appropriate content**
- **Quick response – Fast download and upload**
- **Easy to navigate**
- **Well updated**
- **Appropriate design – Appropriate colour balance, variations and readable data (text and images)**
- **A good administrative tool for tracking visitors/hit counters, frequently used, downloads, etc.**

(Any 1x1 = 1 mark)

……..…….

c) Distinguish a ***podcast*** from a ***hit counter*** ***(1 mark)***

- ***Hit counter or web counter: Indicates the number of visitors, or hits, a particular webpage has received in a time. While*** a podcast is a digital audio file or radio series made available on the Internet for downloading to a computer or mobile device.

……..…….

15. a) A good document must be well processed, referenced, and retrievable. As a student of ICT;

i) Define document referencing **(1 mark)**

- **Document referencing is the provision of pertinent details for consultation about a phrase, word or topic in a document.**

……..……..…….

ii) Give **two** document referencing tools

-
- **Endnote**
- **Footnote**
- **Table of contents**
- **Index**
- **Caption**
- **Bibliography**
- **List of figures and tables**

(Any 2x1 = 2 marks)

……..…….

b) Give ***one*** common feature of document processors

- **Word wrap**
- **Mail merge**
- **Document creation, editing, saving and printing tools**
- **Document copying, pasting, moving and text deleting tools.**
- **Document text formatting for font type, bolding, underlining or italicizing.**
- **Table Creation and editing.**
- **Inserting elements from other software, such as illustrations or photographs.**
- **Correction of spellings and grammar tools** (Any 1x1 = 1 mark)

……..…….

c) Name ***one*** form of document layout

-
- **Print layout**
- **Web layout**
- **Outline layout**
- **Drafts layout**
- **Full screen layout**
- **(1 mark)**

……..…….

16. a) i) One of the most greatly abused software is presentations and desktop publishing software. As a student of ICT state ***two*** qualities of a good presentation/ Publication **Appropriate contrasts for colors and font**

- **Appropriate animations**
- **Appropriate content**
- **Relevant graphics**
- **Page or page balance of content**
- **Correct spellings, punctuations and grammar**
- **Appropriate layout** **(Any 2x1 = 2 marks)**

……..…….

ii) Distinguish presentation from desktop publishing software

- **Presentation software presents work in form of slides while DTP software uses in built templates for publications (1 mark)**

……..…….

b) State ***one*** tool that can help in the navigation of a presentation during a slide show

- **Hyperlinks**
- **Action buttons**
- **Remote control sensors (Any 1x1 = 1 mark)**

……..…….

c) Give ***one*** example of publication that can be created with Desktop Publishing Software.

-
- **Calendars**
- **Fliers**
- **Certificates**
- **Web pages**
- **Labels**
- **Catalogues**
- **Letter heads**
- **Brochures**
- **Postcards**
- **Newsletters (Any 1x1 = 1 mark)**

……..…….

17. a) Data transmission media can be guided (wired) or unguided (wireless). As a student of ICT;

i) Distinguish between guided and unguided data transmission media

- **Guided uses wires or cables for data transmission while unguided uses wireless transmission technology to as data pathways** (1 mark)

……..…….

ii) Give ***one*** example of unguided data transmission media

- **Broadcast radio waves**
- **Cellular radio waves**
- **Infrared waves**
- **Communications satellite**
- **Microwaves. (Any 1x1 = 1 mark)**

……..…….

iii) Of the many guide data transmission media choose one with a supporting reason for use in your school.

- **Fiber optic cable – because of its faster data throughput (2 marks)**

……..…….

b) Show how you would distinguish simplex from full duplex data transmitters. **(1 mark)**

- **Simplex transmitters only allow data to move in one direction at all times while full duplex transmitters can allow data from any direction at any time**

……..…….

18.a) Study the function structure below and answer its related questions.

=IF(D2<80,No Money,50000)

i) State the reason for using equal signs at the beginning of the function structure. **(1 mark)**

- **It is a programmed spreadsheet instruction that initiates a function or formula**

……..…….

ii) State the category into which the above function falls

- **Logical function (1 mark)**

……..……..
iii) State whether the above function will run or not when executed. Give the reason for your answer.

- **<u>It will not run because a label</u> "No Money" is not in quotation marks (2 marks)**

……..……..
b) Explain ***one*** feature of good database design

- **Avoided data redundancy**
- **Minimized data restructuring**
- **Data integrity.**
- **Appropriate I/O transaction sizes** (Any 1x1 = 1 mark)

……..……..
19. a) State ***one*** application areas of data communication

-
- **Voice mail services**
- **Fax services**
- **E-mail services**
- **BBS services**
- **Instant messaging services**
- **Chart rooms services**
- **Newsgroups services**
- **Internet telephony services**
- **Video conferencing services**
- **Groupware services**
- **Telecommunicating services**
- **GPS services**

(Any 1x1 = 1 mark)

……..……..
b) Give ***one*** factor that can influence the data transmission speed of any network

- **Transmission mode: asynchronous versus synchronous or Serial and parallel transmission**
- **Line configuration**: **Point to point and multipoint.**
- **Nature of transmission media**
- **Nature of transmitter**
- **Nature of data being transmitted like multimedia Vs. Text data**
- **Weather**
- **Timing – peak hours are typical of slow data movements (Any 1x1 = 1 mark)**

……..……..
c) State ***one*** role of each one of the following data transmission and networking devices:
i) Network interface card (NIC) **(1 mark)**

- **A NIC connects a computer to a local data network or the Internet.**
- **It also translates computer data into electrical signals it sends through the network**

……..……..
ii) MODEM: **(1 mark)**

- **Interprets or changes computer binary data format for air space movement and vice versa**

……..……..
d) Briefly describe ***one*** network model that can be adopted by your school networking team.

- **Peer-to-peer network model**
- **Client server net model**

- **OSI or Open System Interconnection: responsible for generating and promoting industrial and commercial standards applicable for all the users or universally.**
- **TCP/IP Model** (Any 1x1 = 1 mark)

……..…….

20. a) Distinguish between the following in relation with ICT;

i) ICT ethics from legal issues **(1 mark)**

- **ICT ethics are generally acceptable moral ICT behaviors, while legal issues are practices backed by sanctions in case they are done or omitted.**

……..…….

ii) Hacking from cracking **(1 Mark)**

- **Cracking involves gaining advantage by tampering with the security and tracking system of a software product. While hacking involves gaining unauthorized access into an ICT system.**

……..…….

b) State one emerging ICT trend in the field of education. **(Any 1x1 = 1mark)**

- **Interactive whiteboards replacing blackboards**
- **Electronic pens replacing chalk**
- **Digital books and documents replacing print media**
- **Computer based assessment replacing manual tools of the same**
- **Computer based simulations for physical practical sessions.**
- **Literacy now embracing the ability to create and respond to video, music and art as well as text.**

……..…….

c) State ***one*** example of an ICT professional who would execute each of the following ICT professional works;

i) Write electronic instructions for computers to follow:

- **Software engineer/writer or programmer** **(1 mark)**

……..…….

ii) Design promotional clips for business organizations and individual people.

- **Animations and graphics designer** **(1 mark)**

……..…….