Name……..…….Signature ……

MARKING GUIDE

UTEC 2022

Uganda certificate of education

COMPUTER STUDIES

Paper 1

SECTION A(20 Marks)

1. Ancient counting and calculating devices included;-

   i. Abacus
   ii. Babbage machine
   iii. Napier Rods
   iv. Slide rule
   v. Jacquard's Loom

   A. i.; ii.; v.
   B. ii.; iii.; v.
   C. i.; iii.;iv.
   D. i.;iii.;iv

   C

2. Laptops, Desktops belong to _____category of computer classification.
   A. Size
   B. Processor power
   C. Purpose
   D. Generation

   A

3. Information on a Flash disk said to be
   A. Permanent and volatile
   B. Permanent and non-volatile
   C. Temporary and volatile
   D. Temporary and non-volatile

   B

4. The continuous data presentation represents
   A. Personal computers
   B. Analog computers
   C. Digital computers
   D. Hybrid computers

   B

5. A_____ printer is connected to a computer systems unit through a Parallel connection port.
   A. Laser Jet
   B. Bubble cannon Jet
   C. Thermal printer
   D. Dot Matrix printer

D

6. BASIC isone of a High level programming Language introduced in the
   A. Second computer generation
   B. Third computer generation
   C. First computer generation
   D. Fourth computer generation

B

7. The general name given to software that is designed to meet needs of a particular institution such as a bank, School is called……
   A. Application software
   B. Off shelf software
   C. System software
   D. In-house software

D

8. The Internet service that facilitates real-time exchange of multimedia on portal computing devices is……
   A. Chat
   B. E-mail
   C. Information retrieval services
   D. Newsgroup

A

9. A student designed a table with the following fields, Item ID, Item Name, Quantity, Unit Cost and Total Amount and wanted to calculate the Total Amount using a Form. Which formula will apply in the above situation?
   A. Total Amount:[Quantity]*[Unit Cost]
   B. Total Amount =[Quantity]*[Unit Cost]
   C. Total Amount=[Quantity*Unit Cost]
   D. Total Amount:[Quantity*Unit Cost]

B

10. A(n)……is an example of wireless type of transmission media
    A. Twisted pair
    B. Co-axial
    C. Bluetooth
    D. Optical fiber

C

11. The file extension .Doc is associated with
    A. System files
    B. Word processing applications
    C. Executable files
    D. Power point applications

B

12. A student attempted to transfer a copy of a file – marks.xls stored on D:\ to F:\ for backup purposes.This willrequire the student to select
    A. Save
    B. Rename
    C. Save as
    D. Cut and Paste

C

13. John would like to upload media files to a server located outside Uganda. Which protocol would best suite this task?
    A. HTTP
    B. FTP
    C. UDP/IP
    D. TCP

B

14. A data type in database that storesBoolean type of data is…….
    A. Date and time
    B. Memo
    C. Yes/No
    D. Currency

C

15. Peter was asked to create personal user accounts and password on the computer which they were going to use for a mock practical exam: Identify the most secure password he can set.
    A. luswatalik
    B. Mock@2022!
    C. mock123
    D. S4 mock 2022

B

16. The best way to reduce the effect of e-waste on Environment is by…
    A. Selling off damaged hardware
    B. Put strict laws governing disposal of e-waste
    C. Encouraging recyclability of e-waste
    D. Punish all those who violet the laws

C

17. Which of these is likely to happen in future about the Internet?
    A. Very expensive
    B. Faster connection
    C. Fewer users
    D. Extensive use of wires

B

18. A computer with a . . . . . .specification will load programs slowly.
    A. 900MHz
    B. 1 GHz
    C. 700MHz
    D. 600MHz

D

19. . . . . Is an 8-bit character-coding scheme.
    A. ASCII
    B. EBCDIC
    C. Hexa-decimal
    D. Binary

B

20. An area of artificial intelligence that an extension to hypertext providing multimedia facilities, such as those handling sound and video.
    A. Multimedia
    B. Virtual reality
    C. Hypermedia
    D. Digital forensics

C

SECTION B(60 Marks)

21 a).Describe the term **evolution** of computers ***(02 Marks)***

Evolution of computers refers to the historical developments through which computers and technology have passed, from the time they started to exist in ancient forms to their current state.

b). Outline any ***two*** features of computers developed in First generation.***(Any 2x1= 02 marks)***

- ✓ *They used punched cards and paper tape for input.*
- ✓ *They used magnetic drums for memory.*
- ✓ *The had memory size of approximately 2kilobytes of RAM.*
- ✓ *They used binary number system.*
- ✓ *Speed was about 10,000 instructions per second.*
- ✓ *First generation computers used machine language, the lowest-level programming language understood by computers.*

c). State ***two*** differences between Analog and Digital computers. ***(04 Marks)***

Analog computers	**Digital computers**
Produce data in continuous form	*Produce data in discrete form*
Continuous voltage	*Not continuous (discrete pulse)*
Can have any voltage levels	*Can only have one of two voltage levels*
Wave voltage as time progress	*Voltage jumps between levels*

Or

- ✓ *Digital computers. These are computers which handle/present/process/compute data in digital form i.e "0" and "1"(binary) OR These are computers which handle/present/process/compute data in discrete / values/discontinuous/ form. While*
- ✓ *Analog computers. Are computers which handle data in a continuous variables/ physical quantities/ changing phenomenon form / measureable quantities.*

d) List down ***two*** examples of Hybrid computer***.*** ***(02 marks)***

- ✓ ***Ultrasound Machine****Ultrasound is the high-frequency sound waves that a normal human cannot hear directly. These sound waves are very advantageous in medical technology.*
- ✓ ***Gasoline Station****The fuel vending machine at a gas station measures the amount of fuel via analogue technology and displays the information regarding cost in digital form*
- ✓ ***Electrocardiogram Machine***
  Electrocardiogram or ECG machine is designed to measure heart activity. It makes use of 12-13 sensors that pick the body signals and translate them to the digital data

✓ *fuel vending machine*

22. (a).Explain the function of each of the following computer hardware components.

Audio ports ***(02 marks)***

They provide a link between the computer's sound hardware with your speakers, microphone, headsets or other audio equipment.

Motherboard ***(02 marks)***

Provides the path through which the processor communicates with internal and peripheral devices.

Adapter cards ***(02 marks)***

Adapter cards are used for many supplemental capabilities or provide additional functionality, such as more memory, higher-quality sound devices, a modem, extra ports, or graphics capabilities

b) Give one use of a device driver to a computer. ***(01 mark)***

- ✓ *Operates or controls a particular type of device that is attached to a computer or automaton.*
- ✓ *A driver provides a software interface to hardware devices, enabling operating systems and other computer programs to access hardware functions without needing to know precise details about the hardware being used.*
- ✓ *A driver communicates with the device through the computer bus or communications subsystem to which the hardware connects.*
- ✓ *Provide the interrupt handling required for any necessary asynchronous time-dependent hardware*
- ✓ *- Device drivers act as translator between a hardware device and the applications*

c) Below are some of the specifications provided for two printers sold by MK LTD.

	Printer A	Printer B
Printer Speed	Up to 30ppm	Up to 150ppm
Printer dpi	Up to 2400 x 600dpi	Up to 3400 x 800dpi
Printer Monthly duty cycle	Up to 10000 pages/Month	Up to 20000 pages/Month
First page out (seconds)	Less than 8.5 seconds	Less than 600 seconds
Printer memory	8MB	6MB

Identify which printer;-

(i) Prints faster *Printer B* ***(01 mark)***

(ii) Has a high buffer capacity*Printer A* ***(01 mark)***

(iii) Produces low quality output*Printer A* ***(01 mark)***

23. a).The data below represents an extract from a spreadsheet containing results from End of term one examinations 2022. Use it to answer the questions i).to iii).

	A	B	C	D	E
1	Name	MTC	SST	SCI	ENG
2	Opio M	40	50	45	34
3	Musaazi J	45	78	50	67
4	Ssemitego F	56	68	87	34
5	Okello F	78	56	19	12
6	Range(max/Min)				

i. Identify the values entered in the range C3:D5 ***(02 marks)***

78	***50***
68	***87***
56	***19***

ii. What function/Formula will be used to calculate the range (max/min) in the cell B6 In the above spreadsheet? ***(02 marks)***

=MAX (B2:B5)-MIN (B2:B5)

Or

=Large (B2:B5,1)-small (B2:B5,1)

iii. If the school decides that for those subjects whose range is above 50is marked "**GOOD PROGRESS"** below 50"**POOR PROGRESS"** write a formula using IF function for this information to be reflected in the spreadsheet.

(02 marks)

=IF(B6>=50, ˝GOOD PROGRESS", ˝POOR PROGRESS")

b). State the keyboard shortcuts used to perform the following during word processing

i. Cut text *ctrl + X* ***(01 mark)***

ii. Duplicate text*ctrl c and Ctrl v* (***01 mark)***

c) Outline two examples of presentation application software. ***(02 marks)***

- ✓ *Microsoft PowerPoint*
- ✓ *Corel Presentations*
- ✓ *Google Docs*
- ✓ *Harvard Graphics (obsolete)*

- ✓ *Lotus Freelance Graphics (obsolete)*
- ✓ *Kingsoft Presentation*
- ✓ *OpenOffice.org Impress (open source)*
- ✓ *SlideRocket*
- ✓ *Prezi*
- ✓ *Apple Keynote*
- ✓ *Adobe Persuasion*

Check for errors in spellings

24. a). i).What is a server in computer networking? ***(02 Marks)***

A server is the central or host computer that manages the resources on a computer.

ii).List **two** examples of physical transmission media used in data communication.

(02 Marks)

- ✓ Twisted pair,
- ✓ Coaxial cable

b).Explain the concept **peer to peer networks** ***(02 Marks)***

- ✓ *This is a type of network where each computer can share the hardware, data, or information located on any other computer on the network and does not require a dedicated server to control the network.*
- ✓ *Each computer stores files on its own storage devices.*
- ✓ *Each computer on the network contains both the network operating system and application software.*

c).Explain any **two** considerations you would put in mind when designing a website for your school. ***(02 Marks)***

- ✓ *Domain name*
- ✓ *Number of web pages*
- ✓ *Type of website e.g. informative or Data handling site*
- ✓ *Content, color balance, links etc.*
- ✓ *Website security*
- ✓ *Programming language to use CSS,HTML,etc*

d) Write in Full ***(02 Marks)***

(i) FTP *File Transfer protocol*

(ii) SMTP *Simple Mail Transfer protocol*

25a).Give two circumstances under which the following features can be put into use during data processing.

i. Queries ***(02 Marks)***

- ✓ *Extracts records from a database*
- ✓ *Facilitates sorting of data*
- ✓ *Allows calculations on numerical data types*

ii. Forms ***(02 Marks)***

- ✓ *Allows entry of data in the database table*
- ✓ *Performs calculations on data*

b).Name any **two** document editing features. ***(02 Marks)***

- ✓ *Spell checker*
- ✓ *Cut and copy*
- ✓ *Thesaurus*
- ✓ *Copy and paste*

c). State any four functions of utility programs ***(04 marks)***

- ✓ ***Antivirus utility****: used to search, find and remove viruses from the computer*
- ✓ ***System archivers****: These output a stream or a single file when provided with a directory/set of files.*
- ✓ ***Backup utility****: makes a copy of all information stored on the hard disk onto another storage medium e.g external hard disk, dvds, etc.*
- ✓ ***Cryptographic utilities****: used to encrypt and decrypt streams of files.*
- ✓ ***Data compression utilities****: output a smaller file when provided with a file.*

26. (a) Explain the following terms in relation to computer crimes.

(i) Hacking ***(02 marks)***

is the act of gaining access to a computer system or network without legal authorization

(ii) **Spam** ***(02 marks)***

is electronic junk mail and is a type of advertising from a company sent out to a target mailing list. It is usually harmless but it can clog up the networks, slowing them down, or fill up a user's mail box.

(c) Mention **three** ways of preventing unauthorized physical access to computer installations and systems. ***(03 marks)***

- ✓ *Use of CCTV cameras*
- ✓ *Use of Biometrics*
- ✓ *Use of alarm systems*
- ✓ *Use of possessed objects*
- ✓ *Burglar proofs*
- ✓ *Use of locked door systems*

Note physical access

(d) Give three ways computers and data can be protected against computer viruses.

(03 marks)

- ✓ *Discouraging use of external diskettes*
- ✓ *Installing Up to date antivirus program version*
- ✓ *Write protect the recovery disk before using it*

SECTION C

27. ICC Uganda plans to donate 50 computers to your school community andInternet connectivity. As a computer student you have been approached to give a list of some hardware requirements, giveknowledge on the drawbacks associated with Internet usage at school and what Topology to setup.

a) Explain any **four** Hardwarerequirements that will make it possible for the students to attend an online lesson conducted outside Uganda. ***(08 Marks)***

- ✓ *Computer or computer server*
- ✓ *Speakers/Headsets*
- ✓ *Microphone*
- ✓ *Webcam*
- ✓ *Projector*

b) State **four** draw backs the school community will face after introduction of internet.

(04 Marks)

- ✓ *Computer viruses these can be downloaded and spread across machines and have destructive effects.*
- ✓ *Internet provides unsuitable material such as Pornography, the biggest threat related to healthy mental life.*
- ✓ *Spamming: Spamming refers to sending unwanted e-mails in bulk, which provide no purpose and needlessly obstruct the entire system.*
- ✓ *Some people are getting addicted to the internet and thus causing problems with their interactions of friends and loved ones.*
- ✓ *The initial cost of connecting to the internet is high. e.g. buying computers.*
- ✓ *There is a lot of wrong information on the internet. Anyone can post anything, and much of it is deceit/garbage*

c) With the help of diagrams describe the **star** and **bus** network topologies

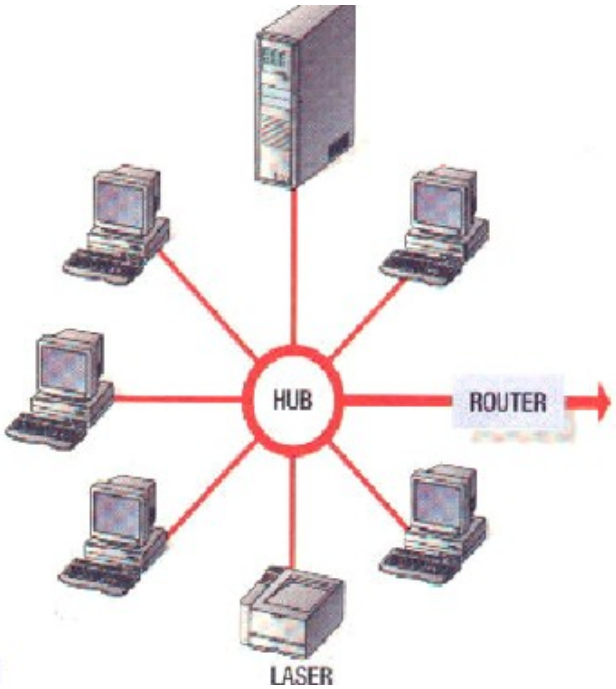
(08 Marks)

Star Topology. A star topology is laid out so that every node in the network is directly connected to one central hub via coaxial, twisted-pair, or fiber-optic cable.

Or

On a star network, all of the computers and devices (nodes) on the network connect to a central hub or switch.

All data that is transferred from one computer to another passes through the hub.

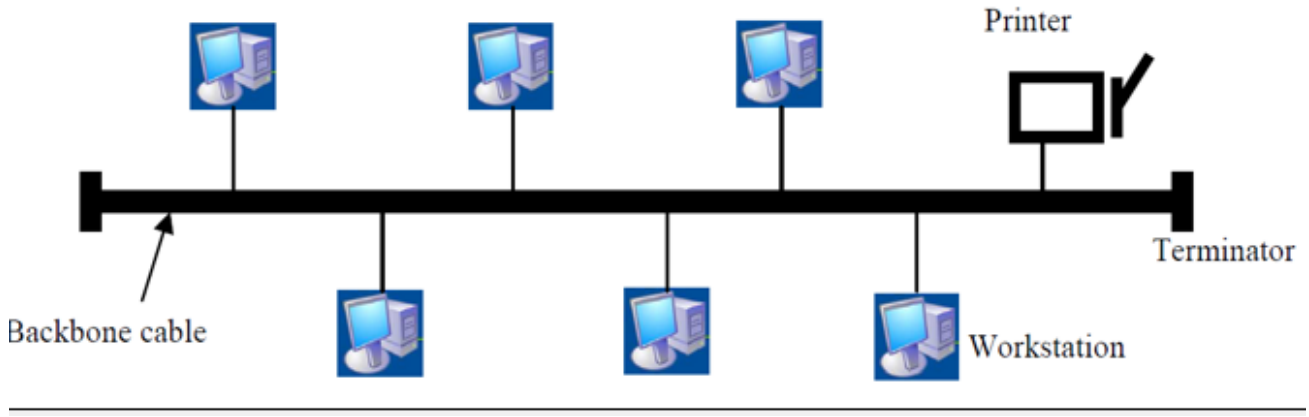


While

Bus/Line/Backbone Topology A bus topology orients all the devices on a network along a single cable running in a single direction from one end of the network to the other.

Or

- **A bus or linear network topology consists of a single central cable that connects all computers and devices together.**
- **The physical cable that connects the computers and other devices is known as the bus or the backbone.**



28. (a) What is a Keyboard? ***(02marks)***

A keyboard is an input device, consisting of a set of keys (buttons) used to operate a computer. Each press of a key corresponds to a single written character of text, but to produce some symbols, it requires pressing and holding several keys simultaneously.

b) Explain any four functions of the keyboard ***(08marks)***

- ✓ *Keyboards are used to input data into applications software (e.g. text into word processors, numbers into spreadsheets, etc.).*
- ✓ *They are also used for typing in commands to the computer (e.g. Prnt Scrn, Ctrl+P to print out, etc.)*
- ✓ *Facilitate the booting process during the initial stages e.g. F1 is pressed to continue with booting*
- ✓ *Facilitates entertainment by allows to interact or play computer based games*

d) Briefly explain any five causes of computer hardware and software malfunction***(10marks)***

Hardware malfunctioning may be caused by

- Dust
- Depreciating hardware/Aging hardware
- Poor connections
- Poor system configurations/Wrong drivers installed for a particular hardware to work

Software Malfunctioning may be caused by

- Computer Virus
- Outdated software
- Too many running programs, interrupt requests not properly executed
-

29. Describe how you could setup a new windows 10 installation on a newly bought Desktop computer. ***(20 marks)***

- ✓ ***Check your device meets the Windows 10 system requirements***.
- ✓ ***Create USB installation media.***
- ✓ ***Run the installer tool.***
- ✓ ***Use your installation media.*** *Insert your installation media into your device and then* ***access the computer's BIOS or UEFI****. These are the systems that allow you to control your computer's core hardware.*
- ✓ ***Change your computer's boot order.*** *Once you have access to your computer's BIOS/UEFI you'll need to locate the settings for boot order. You need the Windows 10 installation tool to be higher up on the list than the device's current current boot drive: this is the SSD or HDD that your existing OS is stored on.*
- ✓ ***Restart your device.*** *Save your settings in the BIOS/UEFI and reboot your device.*
- ✓ ***Complete the installation.*** *Your device should now load up the Windows 10 installation tool on restart. This will guide you through the rest of the installation process.*

NB. ANY STEP CORRECTLY WRITTEN IN ORDER CARRIES 4MARKS

END