

**SECTION B:**

21. (a)  
(i) Word processing is the creation of documents on a computer.

**1x1 = 1 mark**

- (ii) Examples of word processing software

- MS Word
- Lotus word perfect
- Word star
- Open office write
- Abi word

**Any 3x1 = 3marks**

- (b) - Data could be deleted
- Data could be given to third party
  - Data could be changed
  - Use it for uncalled for personal gains
  - Black mailing people

**Any 3x1 = 3marks**

- (c) Ways of preventing misuse of personal data on a computer

- Use of user accounts with passwords
- Data could be encrypted
- Limit connection to other computer networks e.g. internet
- Use filtering software to create firewalls
- Limit physical access to the computer
- Enacting and enforcing data protection laws
- Networking with administrative servers
- Use of biometric facilities such as voice, face, finger print and voice recognition.

**Any 3x1 = 3marks**

22. (a) **Application software** is for performing particular user tasks on the computer such as word processing or editing a graphic.

**1x1 = 1mark**

**While**

**System software** is to ensure the normal working and

management of a computer.

**1x1 = 1mark**

(b) Ms Word

Ms Excel

Ms PowerPoint

Ms Access

Ms Publisher

Tally

Sage

Abi word

Page make

Pastel

Quick books

Word processors

Presentation software

Spread sheet software

**Any 2x1 = 2marks**

(c) (i) Operating system

**1x1 = 1 mark**

(ii) Utility programs

**1x1 = 1 mark**

(iii) Programming language and tools

**1x1 = 1 mark**

(d) (i)

- Operating systems provide an interface between the user and hardware
- File management
- Process management
- Memory management

**1x1 = 1 mark**

(ii)

- Utilities such as defragmenters reorganize files.
- Screensaver utility to avoid ghosting
- Antivirus utility used to protect and remove viruses
- Backup utility use to make disk copy, save data on storage devices
- Disk scanner/cleaner used to create more space by removing unwanted files
- Disk compressor used to compress files to make them smaller

**1x1 = 1 mark**

(iii)

- Programming languages are used to make computer programs/software.
- Compilers help to translate high level codes to low level codes at once.
- Interpreter helps to translate high level to low level language in smaller bits.
- Debugger helps to remove errors in programming codes **1x1 = 1 mark**

23. (a) A computer network is an interconnection of two or more computers to share resources  
**1x2 = 2 marks**

(b) A **LAN** (short for local area network) is a computer network in a room, building or group of buildings.

**1x1 = 1 mark**

**While**

A **WAN** (short for wide area network) is a network across several cities or town or regions.

**1x1 = 1 mark**

(c) Types of network topologies

- Star
- Bus
- Ring
- Mesh
- Tree
- Point – to – point
- Hybrid

**Any 3x1 = 3 marks**

(d) Requirements for connecting to the internet

- Internet Service Provider (ISP)
- Modem
- Computer(protocol, NIC)

**Any 3x1 = 3 marks**

24. (a) 5  
(b) A1, B1, C1, D1, E1,

**OR**

A4, A5, A6, A7, A8

Show by **circling** on the diagram any of the above cells(NB: check both space and table)

**Any 1x1 = 1 mark**

(c) Center alignment

Middle alignment

**1x1 = 3 mark**

(d) Number

Currency

Value

**Any 1x1 = 1 mark**

(e) =+@(E4+E5+E6+E7)

**OR**

=+@SUM(E4:E7)

**OR**

=+@SUM(E4,E5,E6,E7)

**Any 1x1 = 1 mark**

(f) =D4-C4

**1x1 = 1 mark**

(g) (i) = D6-E6

**1x1 = 1 mark**

(ii) £2700

**1x1 = 1 mark**

(h) (i) =Average(C4:C7)

**OR**

=Average(C4,C5,C6,C7)

**OR**

=(C4+C5+C6+C7)/4

OR =SUM(C4+C5+C6+C7)/4

**Any 1x1 = 1 mark**

(ii) = 3012.5

**1x1 = 1 mark**

25. (a) The computer can store a maximum of 25GB of data on its hard disk.

**1x1 = 1 mark**

(b) Advantages of Hard disks (HDDs) over flash disks

- HDDs have larger storage capacities
- HDDs have faster access speeds
- HDDs can be partitioned, hence increasing data security
- HDDs have a lower cost per unit of data
- HDDs are more durable
- HDDs are fixed

**Any 2x1 = 2 marks**

(c) Why computer games and other programs are commonly supplied on CD-ROMS

- They are read only hence virus cannot write themselves on them.
- Are readily portable
- Have larger storage capacities
- They are cheaper to produce

**Any 2x1 = 1 marks**

(d) (i) Impact printers are those where the print head makes physical contact with the paper/print media.

**1x1 = 1 mark**

**While**

Laser printers are non-impact printers which use laser light technology for printing.

**1x1 = 1 mark**

(ii) **Advantages** of laser printers over dot-matrix printers

- Laser printers produce better quality output
- Laser printers are faster in printing
- Laser printers can print colour output
- They are relatively quiet whenever printing

**Any 1x1 = 1 mark**

**Disadvantages** of laser printers over dot-matrix printers

- Laser printers are more expensive to maintain
- Laser printers cannot print on multi-paper
- Laser printers are less resistant to dust, heat or rough treatment

**Any 1x1 = 1 mark**

26. (a) **Digital computers** only two states (1 or high) and (0 or low) for their internal processing.  
**1x1 = 1 mark**

**While**

**Analog computers** use continuous data and their display is by a pointer or  
They understand and represent analog signals

**1x1 = 1 mark**

- (b) Characteristics of **mini-computers**

- They are larger in size than micro computers
- They are much faster than micro-computers
- They are specifically made for multi-tasking
- They contain multi-processors.
- They are reliable as they serve for relatively long periods
- They are used for business purposes

**Any 1x1 = 1 mark**

- (c) (i) **PC** – Personal Computer

**1x1 = 1 mark**

- (ii) Advantages of PCs over mini-computers

- They are relatively portable
- They are relatively cheaper
- They can fit in or occupy a smaller space

**Any 3x1 = 3 marks**

### SECTION C

**No.27.** Reasons why it is important for a school to have a website:-

- **Communication**
  - The school can reach out to a wider audience world wide e.g. in student recruitment.

- **Resource mobilization.** The website can be used for resource mobilization as it can reach out to a wide supporting audience
- **Advertisement**
  - The website can provide general information about the school.
  
- The website can provide a forum for discussion of issues by using say, blogs.
  
- **Teaching and Learning**
  - The website can provide subject content notes to students.
  - The website presents an opportunity for technology skills building for students involved in its design.
  - The school community can collaborate with other students worldwide for project based Learning (PBL)
- **Collaboration and networking.** The website can provide a forum for students and teachers to collaborate with the out side world.
- **Forum for evaluation**
  - The website can provide a forum for parent and alumni feedback across the board.
- **Storage facility:** The Student achievement data can be posted on the website for easy access by stakeholders.
  
- **Teacher collaboration**
  - The website can provide a forum for teachers to collaborate with other teachers worldwide as a community of practice.
  
- **Publishing**
  - The website can enable both students and teachers to publish their work.

**Any 10x2 = 20 marks**

**Stating a point =1 mark**

**Explanation =1 mark**

**No.28.** Health hazards associated with the use of computers include:-

- Eye strain
- Back pain due to poor sitting posture
- Electromagnetic radiation especially with CRT monitors
- Addiction from use
- Wrist pain to do non-ergonomic
- Repetitive Strain Injury(RSI)
- Headaches
- Neck pain
- Stress due to noise from fans, printers, power inputs
- Ear problems for use of ear phones especially with embedded systems

**Any 5x4 =20 marks**

**Stating a point =2 marks**

**Explanation =2 marks**

**No.29.** Storage devices on a computer include:-

○ **HARD DISK**

**Description Keywords**

It consists of metallic platters with magnetic coating. The data is read/written to by read/write heads on both sides of each platter.

**Strengths**

- Large storage capacities
- Faster (Shorter) access times.
- Internal hard disks are safer from physical damage.
- A hard disk on a stand alone computer is safer from viruses.
- They are cheaper in terms of cost per unit of storage compared to say floppies.

**Limitations**

- An Internal hard disk is not portable.
- The platters when exposed to heat can lead to expansion and cause head crash

**Mentioning = 1mark**

**Description =1 mark (by definition or characteristic)**

**Strength = 1 mark**

**Limitation = 1 mark**

**Subtotal = 4 marks**

○ **Optical Disks (CDs, DVD)**

**Description Keywords**

They are circular discs and the data is stored and read by using laser (optical) technology.

**Strengths**

- They are portable
- Some can allow continuous write processes.
- They are cheap to buy.
- It allows faster random access as opposed to tapes.

**Limitations**

- CDs can easily be damaged when cracks form on their surfaces.
- Have limited storage
- Can not allow deletion of one file or folder in many
- Can not scan to recover or repair bad sectors

**Mentioning = 1mark**

**Description =1 mark (by definition or characteristic)**

**Strength = 1 mark**

**Limitation = 1 mark**

**Subtotal = 4 marks**

○ **FLOPPIES/ZIP DISKS**



### **Description Keywords**

A floppy is a thin flexible disc with magnetic coating enclosed in a rectangular plastic jacket with a write protection notch.

#### **Strengths/**

- They are portable
- The read/write notch can help in protection of data against accidental writes or erasure.
- They are cheap.

#### **Limitations**

- They have small capacity.
- They have long(slower) access speeds
- Prone to damage in the vicinity of strong magnetic fields

**Mentioning = 1mark**

**Description =1 mark (by definition or characteristic)**

**Strength = 1 mark**

**Limitation = 1 mark**

**Subtotal = 4 marks**

### ○ **FLASH DISKS/Memory sticks**

#### **Description Keywords**

They are plug and play devices that connect through the USB port.

#### **Strengths**

- They are portable
- Large storage capacity
- Random access of data.

#### **Limitations**

- Prone to viruses attack

**Mentioning = 1mark**

**Description =1 mark (by definition or characteristic)**

**Strength = 1 mark**

**Limitation = 1 mark**

**Subtotal = 4 marks**

### ○ **FLASH Memory/Micro SD/Memory cards**

#### **Description Keywords**

They are micro storage devices found in a wide range of devices such as phones, digital cameras, video cameras, radios etc..

#### **Strengths**

- They are portable/flexible

- Relatively large storage capacity compared to floppies
- Random access of data.

**Limitations**

- Prone to viruses attack
- They may be hard to handle because of their small size.
- Easily lost or misplaced

**Mentioning = 1mark**

**Description =1 mark (by definition or characteristic)**

**Strength = 1 mark**

**Limitation = 1 mark**

**Subtotal = 4 marks**

- **Magnetic tapes**

**Description Keywords**

Tape is a storage device made of a reel of thin plastic material coated with magnetic particles.

The data on a tape is accessed sequentially.

**Strength**

Stores a big amount of data and used for data back up

Can store data for a long period of time

**Limitation**

Data access is slow and sequential

Data stored on it can be distorted by strong magnetic fields

Relatively scarce

**Mentioning = 1mark**

**Description =1 mark (by definition or characteristic)**

**Strength = 1 mark**

**Limitation = 1 mark**

**Subtotal = 4 marks**

21. (a) Pascaline machine or

Pascaline Arithmetic calculator

Pascaline calculator/Machine

Pascaline mechanical calculator

**Any1x1= 1 mark**

(b) Stating reasons for each of the following characteristics given

(i) – Not wide spread or not common

- Rare or scarce
- Consumed a lot of electrical energy/power
- Many frequently replaceable parts e.g. vacuum tubes
- based on real natural materials
- Constant break down
- Had maintenance problems
- Based on real natural materials
- Very bulky parts

Any1x2=

2marks

(ii) - Consumed alot of electrical energy/power

- Underdeveloped cooling systems like heat sinks
- Based natural raw materials
- They were bulky
- Had many vacuum tubes

Any1x2=

2marks

(c) **Characteristic features of modern computers**

- Upgradable
- Multiprocessing
- Multitasking
- They are cheaper
- They are communicative/collaborative/interactive
- They need electrical power
- They are generally portable
- They are cheaper
- They are generally portable
- They are collaborative/interactive/communicative
- **speed**-means they are very fast and do work in negligible time. E.g. perform a million instructions in one microsecond
- **Accurate**- means they are accurate and errors are due to human error or program error.
- versatile** –means they are capable of performing different tasks in many different ways.
- Diligence** –means that are capable of handling repetitive and boring tasks over and over again.
- Storage-capable of storing data in large amounts temporarily and permanently
- They Are Automatic
- Have Artificial intelligence

Any3x1=

3marks

(d) Virtual reality is a technology/system that simulates real world happenings on a computer e.g. flying a plane, cyber school's technology.

**OR**

One can perform a task as if he or she is in the real world using a computerised system.  
E.g. Cyber Science Solution, Games

**Any 1x2=**

**2marks**

**TOTAL=10 MARKS**

22. (a) A peripheral device is a device which is **connected externally** through ports or by wireless connectivity to the motherboard and can be removed and lives the computer working.

**Or**

A peripheral device is a device which is connected externally through ports or by wireless connectivity to the motherboard and can be removed and are outside the basic computer devices.

**Or**

Any device that can be added to the system to increase/enhance its functionality.

**Any1x2=**

**2marks**

(b) **Categories of computer hardware**

- Input hardware
- Output hardware
- Processing hardware
- Storage hardware
- Communication hardware

**Any4x1=**

**4marks**

(c) **Why carry out warm booting**

- After/during installing new software
- After installing new hardware
- When switching from one operating system to another
- When a computer application hangs/freezes or a deadlock state
- After uninstalling a software
- After uninstalling a hardware
- After updating a hardware or software
- After scanning for viruses
- Computer system slows down
- Application fails to load
- When a device is not ready
- When there is a possible attack on a system

— After configuring server or changing CMOS settings

**Any4x1=**

**4marks**

**TOTAL=10**

**MARKS**

23. (a) (i) Sort **1mark**  
(ii) Filter **1mark**

(b) =IF(C2>=200,"PROMOTION","REPEAT")

**Or**

=IF(C2<200,"REPEAT",IF(C2>=200,"PROMOTION"))

**Any1x2=2marks**

(c) =Max(C2:C8) or =Max(C2,C3,C4,C5,C5,C6,C7,C8)

**Or**

=MAXA(C2:C8)

**Or**

=LARGE(C2:C8,1)

**Any1x1= 1mark**

(d) A database management system is a specialised program/software that permits easy creation of data, access, retrieval and make use of data.

**Or**

A software used to create a database

**Or**

A software used to manage a database

**Or**

A software used to manipulate information in a database

**Any1x2**

**2marks**

(e) **Activities where database management system can be used**

- Cataloguing books in a library
- Making telephone directory
- Making inventories
- Capturing patient's biodata in health units
- Capturing student's biodata in schools
- Hotel reservation systems
- Employee payroll system
- Supermarket goods/stock updating
- Accounting/financial system
- School management system
- Registration system

— Report making system

Any1x1=

1mark

(e) (i) Form

1mark

(ii) Query

1mark

**TOTAL=10**

**MARKS**

24. (a) (i) **Simplex transmission** is a mechanism/mode of data transmission where data is transmitted in one direction only.

2marks

**Example:**

- Radio transmission
- Tv Transmission/telecast
- Buzzer alarms

Any1x1=

1mark

(ii) **Full duplex transmission** is a mechanism/mode of data transmission where data is transmitted back and forth (both directions) at the same time(simultaneously).

2mark

s

**Example:**

- Telephone transmission
- Cellophone Transmission

Any1x1= 1mark

(b) **Advantages of the method**

- Transactions and business updates can occur instantaneously and globally, there by saving time.
- Transactions can occur 24/7(24hours per week).
- Businesses have the ability to gather customer's information, analyse it and react if appropriate.
- Gives businesses a competitive edge.
- The costs of promotion are reduced
- Businesses have access to millions of customers
- Feedback is immediate
- manufacturers can sell directly to customers avoiding the cost of middle men.
- Distribution costs for information is reduced or eliminated.
- Consumers have got an opportunity to view products before buying
- Provides for online tracking of products in transit
- Allows for electronic transfer of money

-Businesses can share resources

**Any3x1=  
3marks**

**Disadvantages of the method**

- Fraud by hackers
- Frequent servicing reduces the profit margin
- Frequent break downs in network affects transactions
- Non-existing online companies may cone people
- Online advertised items may not be of the expected quality
- Caters for the urban person who has access to the internet and a computer.
- Limits face-to-face interaction between sellers and buyers
- Credit card predators
- Faster spread of negative feedback

**Any1x1= 1mark**

**TOTAL=10 MARKS**

25. (a) **Wrapt text** is a feature in a word processor that enables a user to surround an image/picture with text.  
Or A wrap text is a word processing feature/facility that allows/enables a user to automatically align and place text in relation to an image.

**While**

Word wrap is a feature in word processor that allows text/cursor or word to automatically move to the next line when it gets to the right margin.

**Or**

Wrap text word with objects while word wrap works with the cursor.

**Any1x1= 1mark  
(for both parts  
correct)**

**(b) Advantages of using word processor over typewriter**

- Errors can easily be identified and corrected
- The work can be saved and got later
- The work can electronically be edited which is not the case with a typewriter
- Produces neat work
- The work can be displayed in different formats like font face, size
- Spell checks/gramma can be done to improve accuracy
- Data can be imported/exported to another application
- Security of document is assured through passwords
- Very silent during working
- Allows for automatic generation of figures, indices, groceries etc,
- Offer easy and readymade templates e.g. macros, CV formats

- Letters/documents can be produced and sent to many people at ago saving time

**Any3x1=  
3marks**

**(c) Why sound may be added to a presentation**

- Make impact and grab attention of the audience
- To cater for people who cannot see
- Play a sound to reflect corporate image-like a melody
- To indicate the start and end of a presentation
- Appealing to emotions

**Any1x2=  
2marks**

(d) **A slide master** is a slide that holds all the formatting features for the title, text and any other background items that appear on all slides in the presentation.

**Or**

**A slide master** is a slide that controls or manages effects or appearance of a particular slide in a presentation

**2marks**

**(e) Example of presentation software**

- Microsoft PowerPoint
- Harvard Graphics
- Adobe Persuasion
- Corel presentation
- Freelance Graphics

**Any1x1= 1mark**

**TOTAL=10 MARKS**

26. (a) A **utility program** is a system software program that helps in servicing other programs or devices for purposes of enhancing the performance of computer system.

**2marks**

**(b) Examples of utility programs**

- Screen saver
- Debugger
- Data compressor
- Anti-virus
- Diagnostic tool
- File viewer



- Disc debragmentor
- Disk cleaner
- Backup utility
- Uninstaller

**Any3x1=  
3marks**

**(c) Advantages of off-shelf software**

- They are cheap
- Few cases of errors
- They have documentation and help provided/tutorials/user manuals
- They can easily be got online
- User friendly since they made to serve/benefit a bigger market
- Flexible
- Can be customised to suit user needs
- Can do several tasks
- Can be acquired for free
- There is online software support
- No need for specialised skills
- Less time consuming in acquiring the software.

**Any2x1=  
2marks**

**(d) Consideration to be made for developing a program**

- Cost of the software.
- Nature of business/needs.
- Available skills or personnel available.
- Compatibility/flexibility.
- Platform/portability.
- Time.
- Number of users/capacity of the program.
- Hardware e.g. hard disk capacity, RAM size.
- Future needs/scalability or expandability.
- Legal framework off the country.
- Security level.
- Portability.
- Copyright.
- Quality of the software.
- Availability of software or software integration

**Any3x1=**

**3marks**

**TOTAL=10 MARKS**

## SECTION C

**27(a) the help of a laboratory technician can give when the following error messages appear.**

**(i) Non-system disk error when the computer system is switched on**

- He would eject the disk from the drive press any key on the keyboard to enable the boot process to continue
- Restart the computer
- Check hardware connection
- Reformat the hard disk

**Any 1x2 = 02 marks**

**(ii) Low disk space and computer is slow**

- He can fix this by deleting some files using disk cleaner utility
- He can close some files which are open and would occupy the Ram
- Back up and delete from computer
- Use of cloud computing
- Increase the Ram
- Defragmenting the hard disk
- File compression
- Run anti-virus to scan the device
- Increase/slave/add new HDD

**Any 1x2 = 02 marks**

**(iii) Access denied when a user wants to access a particular file**

- Exit or stop programs that are running and could be blocking the users' tasks from running
- Install and run the anti-virus
- Adjust users setting to allow access
- Provide password
- Adjust windows firewall and allow access

**Any 1x2 = 02 marks**

**(iv) Our of memory**

- Exit or stop programs that are running and could be blocking the user's tasks from running
- Install or upgrade the Ram by buying another Ram chip and fixing it on the memory slot of the mother board and restarting the computer to implement the upgrade
- Run a virus scan
- Restart the system

**Any 1x2 = 02 marks**

**(v) Device not ready**

- Disable particular disk drive from the device manager
- Give it time to activate
- Re-install drivers
- Check and change power connection points e.g. USB
- Restart the device
- Re-install the Operating system
- Scan for viruses/malware
- Uninstall and or deactivate software blocking the hardware by Deep freeze
- Changes ports where applicable
- Disable and enable the device

**Any 1x2 = 02 marks**

**(b) Reasons why Adania's laptop started to slow down**

- Not enough Ram
- Virus attack or malware infection because of connection to the internet
- Low disk space due to many programs stored
- Some system files being corrupted
- When there is any scanning program runs in the background eg anti-virus
- When files on the disk are fragmented and access time is reduced
- Automatic updates
- Wear and tear

**Any 5 points x 2 = 10 marks**

**28 (a) Possible observable symptoms that a computer has a malware**

- Freezing is very often
- Unfamiliar graphics /images on the screen
- Pop up of scary /warning messages
- Posts which you did not post appears on your pages
- Denial of access to some system tools
- Files disappear mysteriously
- Disks change volume e.g. volume name
- System speed reduces
- Alteration of files
- The computer shut down and restarts without any command from user.
- Un expected anti-virus disabling
- Un precedent loss of memory
- Change of keyboard stroke
- Corrupting of files

- Duplication of files
- Creation of shortcuts

**Any 5 points x 2 = 10 marks**

**(b) Explain five measures to put in place to safeguard computers against malware.**

- Install anti-virus and regular updating
- Activate firewalls
- Enforce strict policies on malware
- Block unwanted file types at the email gateway
- Password computers to stop unauthorised users
- Downloading attachments whose source you know
- Educate or train users on what to be done in case of misuse
- Minimise foreign storage media
- Join/connect to secure networks
- Buy software from genuine sources
- Regulate automatic updates

**Any 5 points x 2 = 10 marks**

**TOTAL=20 MARKS**

**29(a) Benefits of networking computers in school**

- It lowers expenses on hardware and software eg printer, anti-virus
- Software is easily upgraded via the server
- Allow multiple access to the school database or internet
- Easy sharing of files and file transfer
- Allow flexible access to the as students and teachers can logon and access their work from any work station
- Collaborative learning is made possible
- It enables easy and faster communication
- It enables easy access to the internet resources by many students at the same time
- Improved security through centralised administration via the server

**Any 5 points x 2 = 10 marks**

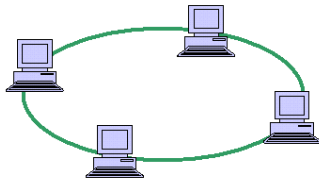
**(b) Definition**

Computer network topology is the way various components of a network (like nodes, links, peripherals, etc) are arranged. Network topologies define the layout, virtual shape or structure of network, not only physically but also logically.

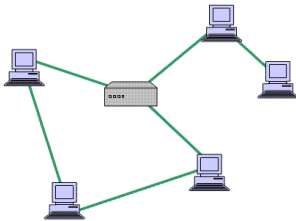
**1 mark**

**1 Ring:** The ring network connects each node to exactly two other nodes, forming a circular pathway for activity or signals - a ring. The interaction or data travels from node to node, with each node handling every packet.

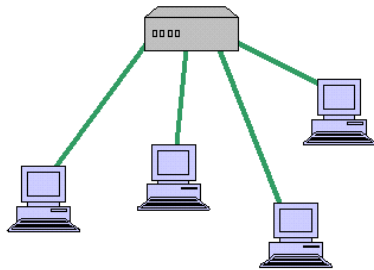
Diagram of ring topology



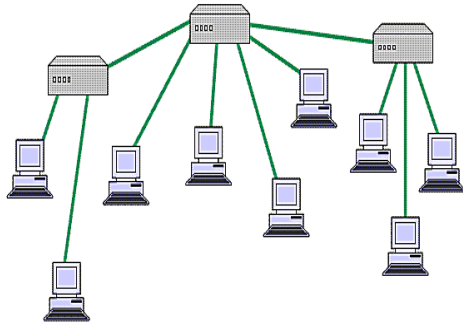
**2 Mesh** is a way to route data, voice and instructions between nodes. It allows for continuous connections and reconfiguration around broken or blocked paths by “hopping” from node to node until the destination is reached.



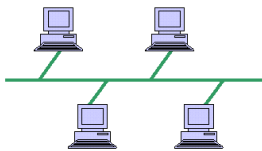
**3 Star:** The star network consists of one central element, switch, hub or computer, which acts as a conduit to coordinate activity or transmit messages.



**4 Tree:** This consists of tree-configured nodes connected to switches/concentrators, each connected to a linear bus backbone. Each hub rebroadcasts all transmissions received from any peripheral node to all peripheral nodes on the network, sometimes including the originating node. All peripheral nodes may thus communicate with all others by transmitting to, and receiving from, the central node only.



5 **Bus:** In this network architecture a set of clients are connected via a shared communications line, called a bus.



Any 3 x3 =9 marks

Mentioning =2mark

Explanation=1 mark

Any one diagram =1mark

## SECTION B

21. (a) **Definition of computer evolution**

Computer evolution is the gradual development/improvement/modification/advancement/growth of computing devices/technology from simple to more complicated and advanced forms.

**NB: Deny marks for stages/generations.**

*02 marks*

(b) **The correct terms to complete the statements**

- (i) Computer
- (ii) Data processing
- (iii) Data
- (iv) Information.

*Each 4x1=4 marks*

(c) **How computers are used in the following sectors**

(i) **Health**

- Disease diagnosis using computer based x-rays, ultrasound scan etc
- Carrying out computer based medical research over the internet
- For computerized accounting purposes and billing of patients

- Keeping records of patients in a computerized database.
- Computerized scheduling of medical staff on duty.
- Providing healthcare lessons to patients using digital notes
- Communication between medical staff and patients
- Computer assisted life savers
- Incubating machines for premature babies
- For carrying out complex operations on sensitive body organs
- For drug prescription
- Determination of DNA

*Any 2x1= 2marks*

(ii) **Security**

- For forensic computing as in gathering evidence from scenes of crime
- Used to monitor places using CCTV cameras
- Access control using biometrics devices
- Computer based recording keeping by security organs
- Communication using internet and mobile equipment in cases of security emergency
- Research on criminal cases using internet
- Computer guided fighter planes
- Monitoring of security situations by drones
- Weapon assembly by the military manufacturing firms
- Computer based alarm systems in homes and cars
- Detection and detonation of booms and dangerous items like landmines
- Tapping and tracking calls for security purposes
- Training and educating forces using simulated models
- Locating and launching missiles

*Any 2x1= 2marks*

22. (a) **Defining computer hardware**

Computer hardware refers to the physical or tangible parts of a computer.

*02 marks*

(b) Filling in the appropriate categories of hardware

<b>Hardware device</b>	<b>Category</b>
(i) Compact Disc	<b>Storage</b>
(ii) MODEM	<b>Communication</b>
(iii) Projector	<b>Output</b>
(iv) Barcode Reader	<b>Input</b>

*Each 1x4=4 marks*

(c) **Explaining the functions of components**

(i) **Power Supply Unit**

- Steps down voltage
- Converts A.C voltage to D.C voltage
- Splits or distributes the voltage in different values as required by the components.

*Any 1x2= 2marks*

(ii) **ROM Chip**

- Permanently Store/hold manufacturers system instructions/information
- Used to hold instructions necessary for the booting of the computer.

*Any 1x2= 2marks*

23. (a) (i) **What a wild card is in database management system**

A **wild card** is a special character that can/used/combined/ stand for either a single character or a string of text in a query criteria or while searching for information. That can be used to return/filter/generate results from a given query.

*02 marks*

(ii) **Importance of a wildcard in a query criterion**

- Useful when one wants the query to look for a given range of different possible values.
- Useful when one is not certain of what one is looking for but can give the query some clues to work with.

*Any 1x2= 2marks*

(iii) **Naming examples of frequently used wildcards**

- Asterisk (\*)
- Question (?)
- Percentage (%)
- Underscore ( \_ )
- Exclamation mark !
- Square brackets []

*Any 1x1= 1mark*

(b) (i) **Characteristics of label in a spreadsheet cell**

- Labels are left aligned by default
- Labels are not subject to basic arithmetic operations/not used for basic calculations
- Labels go into quotations whenever in logical functions
- Labels are majorly text data



*Any 1x2= 2marks*

(ii) Outlining uses of electronic spreadsheets

- Data sorting or arranging
- Data filtering
- Logical operations/functions
- Statistical operations/data analysis
- Financial and accounting operations
- Graphical representations/charting
- Data capture, import and export
- Editing and formatting of data

*Any 1x3= 3marks*

24. (a) (i) **Ways of preventing access to information on the internet**

- Keyword blocking
- Site blocking
- Web rating systems
- Pass wording/parent control
- Registration and subscription to logins into the site as a member
- Financial restrictions to access content
- By encryption
- Using anti-virus software to block data from certain sites
- Putting down the site
- Using firewalls to filter information in a private network

*Any 2x1= 2marks*

(ii) **Reasons for preventing access to information on the internet**

- Prevent online crimes like bullying, fraud etc
- Limit or prevent access to illicit materials e.g. pornography
- For moral and ethical uprightness
- Limit or prevent unsolicited messages from filtering through
- Prevent piracy (illegal copying and duplication of information without authorization)
- Limit plagiarism by putting information in a format that cannot be easily changed
- Commercial benefits to promote copyright and property right.
- Offers privacy/confidentiality
- Preventing data alteration

*Any 3x1= 3marks*

**(b) (i) Explaining the term data transmission media**

These are communication lines or channels or path through which data is transferred from device to another.

Or channels used in transferring data/information

*02marks*

**(ii) Listing examples of data transmission media**

- Infra red light
- Radio waves
- Micro waves
- Optical fiber cable
- Twisted pair cable
- Coaxial cable
- Or wireless/unguided/unbounded technology
- Cabled/guided/physical/tangible

*Any 3x1= 3marks*

25. **(a) Importance of features in word processing**

**(i) Footnote**

Helps in providing explanatory/ or clarifying notes comments about a concept or phrase used in a particular page of a document

*02marks*

**(ii) Toggle case**

It helps the user to hurriedly change or switch case of text to upper case or lower case and vice versa.

*02marks*

**(b) Distinction between cut and copy**

To cut is to move data or text or word from its original place to a new location/clipboard/buffer/

**While**

Copy is to create an extra or duplicate copy of the data or file.

*(For both sides correct)02marks*

**(c) What presentation software is**

Is an application software/program used to create and display information or data in form of slides/slide show.

*02marks*

(d) Outlining ways where presentation software may be used

- Advertising/promotion of products
- Publishing web contents
- Presentation to large audience in seminars, workshops, conferences etc.
- Business presentations
- For teaching

*Any 1x2= 2marks*

26. (a) Explanation of programming concepts

(i) **Termination**

It indicates the end of a statement in a program code.

To end a line of code in a program

Indicate syntax error

*02marks*

(ii) **Variable declaration**

It tells the program the nature of data to store or retrieve.

It assigns a datatype to a variable in a program

Tells the compiler to correctly interpret each statement

*02marks*

(b) **Stating the use of a compiler to a programmer**

- Translate enter/whole/at once source code into machine code
- Error detection
- Convert program code into executable code

*Any 1x2= 2marks*

(c) **Explanation of the term device driver**

- Device drivers are software programs that enable the computer system to communicate or interact well with connected system components or peripherals.
- Computer program used to configure peripheral devices

*02marks*

(d) Forms of interfaces that can be provided by the operating system to the computer user

- Command line interface Or Command
- Menu driven interface Or Menu
- Graphical user interface Or Graphical

*Any 2x1= 2marks*

## SECTION C

27. (a) **Factors to consider when to choose a LAN model (Peer to Peer or Server based)**

**network)**

- Amount of network traffic(through put/band width//no of users.
- Organizational business
- Network budget/ availability of financial resources/cost of establishment.
- Level of administration support required
- Security levels required.
- Type of business or organization/size
- Ease of expansion in future
- Technical advice and support

*Any 5x2= 10marks*

**(b) Explanation of limitations to full internet use in Uganda**

- Cost implication for the initial outlay and maintenance are so threatening
- Government policy are not favorable e.g. taxes on IT equipment
- Ignorance due to high illiteracy rates
- Limited internet infrastructure/network coverage
- Poverty levels are high
- Fear for internet flaws e.g. pornography, network viruses and invasion of privacy
- Technological phobia
- Natural calamities/causes like lightening, fires, obstacles e.g hills
- Limited electric power supply
- Digital divide
- Nature and quality of some ISPs

*Any 5x2= 10marks*

28. **(a) Factors to consider before buying a computer**

- Needs/purpose of the school like different needs like curriculum, students, teachers etc
- Nature of the school e.g. a school for the deaf would need some hardware for the deaf.
- Ergonomics Safety provisions for the hardware e.g. comfort, safety, efficiency etc

- Cost of hardware components given the available school budget like installation, initial hardware cost and maintenance plus repair.
- After sale services provision such as free maintenance, warrants/guarantees for a period of time like one year.
- Source of hardware given the school foundation body and virtues
- School and government policy governing procurement laws and procedures.
- Data/information security provisions/concerns
- Computer hard disk
- RAM capacity
- Processor speed.
- Compatibility with the existing infrastructure in the school
- Provision for future growth and development (upgradeability)
- Past experience of working state of the nature of the computer.
- Reputation of the supplier
- Environmental concerns
- Technical advice and support
- Space for storage
- Consider the internal Network Interface Card
- Consider Resolution for high Graphics

*Any 5x2= 10marks*  
**Mentioning 1 mark**  
**Explanation 1 mark**

**(b) Ways of caring for computer hardware**

- Legislation/setting up working laws e.g. computer lab rules, ICT use policy, Code of conduct around computer use ranging from hardware movement, installation etc
- Burglar proofing
- Regular servicing and maintenance
- Servicing through professionals
- Avoiding dust and water into hardware by use of dust and water proof covers.
- Education/sensitizing users about basic hardware care/practices
- Electric power surge protectors/Proper electrical wiring/earthling /insulation.
- Bolting hardware on walls, tables and ground
- Engage alarms systems e.g. smoke, fire detectors
- Authentication systems like biometric, swipe cards, identity cards etc
- Hardware audits on regular basis
- Engraving/labeling hardware
- Security guards to take an eye on the installations
- Use of CCTV cameras for surveillance for feedback and evidence.

- Installation of lightening arrestors
- Keeping rooms under lock and key
- Avoid exposure to direct sunlight and extreme temperatures.
- Turning off the computer system when not in use.
- Proper turning on/off the computer system

*Any 5x2= 10marks*  
**Mentioning 1 mark**  
**Explanation 1 mark**

29. **Describing conditions that can lead to a computer system reboot**

- When an application or operating system freezes/hangs/ does not respond
- After installation of a new software (application or utility)
- When a peripheral or hardware component has failed to function/work
- During/After installation of operating system.
- After changing use control settings(CMOS/BIOS settings)
- When a user wants to clear a malicious infection like malware, spyware, viruses that are in memory
- After software update
- After uninstalling software
- After uninstalling hardware
- After installing a new hardware
- When the computer system slows down
- When there is suspected system tapping
- When a user wishes to switch from one operating system to another (Multiple O.S)
- After malware/virus scanning
- When a deadlock occurs
- Before Installing software
- When application software fails to work

*Any 5x4= 20 marks*  
**Mentioning 1 mark**