

SECTION A

1. A term in computer terminology is a change in technology a computer is/was being used.
 - A. Development
 - B. Generation
 - C. Advancement
 - D. growth

B
2. This is a high-speed memory located between the main memory and the CPU. What is it called
 - A. DRAM
 - B. Cache memory
 - C. EEPROM
 - D. EPROM

B
3. What is used to increase the apparent size of physical memory?
 - A. Disks.
 - B. Virtual memory.
 - C. Hard-disk.
 - D. Secondary memory.

B
4. Dot-matrix, DeskJet, Laser, and Inkjet belong to which type of computer hardware?
 - A. Monitor
 - B. Scanner
 - C. Hardware
 - D. Printer

D
5. Which of the following computer used in weather fore casting, nuclear research, and scientific application?
 - A. Mainframe computer
 - B. Minicomputer
 - C. Supercomputer
 - D. Microcomputer

C
6. Which term is used to refer to the computers that are used for storing web pages as files?
 - A. Internet

C

- B. Web clients
- C. Web servers
- D. World Wide Web

7. An HTML _____ takes text in one format and changes it to HTML code

- A. A browser
- B. Editor
- C. Converter
- D. Processor

C

8. Computers process data under the control of sets of instructions termed

as _____

- A. Computer programs
- B. Computer data
- C. Computer buses
- D. Computer instructions

A

9. When you save the following the data would remain intact even after turning off computer?

- A. RAM
- B. Motherboard
- C. Secondary and Storage Device
- D. Primary Storage Device

C

10. Which among the following hardware you usually can't find inside

a

CPU Casing?

- A. Power Supply box
- B. Video card
- C. Video display unit
- D. Graphics processor

C

11. Which view helps to rearrange the slides easily and quickly?

- A. Notes page
- B. Slide master
- C. Slide sorter
- D. Normal

C

12. Which of the following enables us to view data from a table based on a specific criterion

- A. Form

B

- B. Query
- C. Macro
- D. Report

13. Which data type allows alphanumeric characters and special symbols to be entered?

- A. Text
- B. Memo
- C. Auto number
- D. Mixed

A

14. _____ refers to a computer's ability to run more than one application at the same time.

- A. Serial computing
- B. Operating system
- C. Parallel computing
- D. Multitasking

D

15. To safely remove a program from your computer, you might want to

use what type of utility?

- A. backup program
- B. file compression program
- C. troubleshooting program
- D. Uninstall.

D

16. You can use what utility to update all of your device drivers at the same time?

- A. Driver Update
- B. Device Manager
- C. Driver Verification Service (DVS)
- D. Windows Update install program

D

17. How will Microsoft word respond in a repeated word.

- A. A red wavy line under the repeated word
- B. A green wavy line under the repeated word
- C. A blue wavy line under the repeated word.
- D. A yellow wavy line under the repeated word.

A

18. A person who analyse the information system and have practical experience of computers is classified as

- A. System modifier
- B. System analyst
- C. System updater
- D. System promoter.

B

19. are difficult virus to identify as they keep on changing

their type and signature.

- A. Multipartie Virus
- B. Polymorphic Virus
- C. Boot Sector Virus

B

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- C. Macro
- D. Report

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B

- D. Non-resident Virus
20. DHCP stands for
- A. Digital host communication provider
 - B. Dynamic Host Configuration Protocol
 - C. Digital host communication protocol
 - D. Dynamic Host Configuration Provider

B

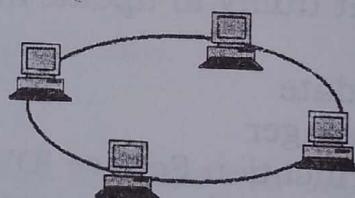
SECTION B

21. (a) What is a topology.
(2Marks)

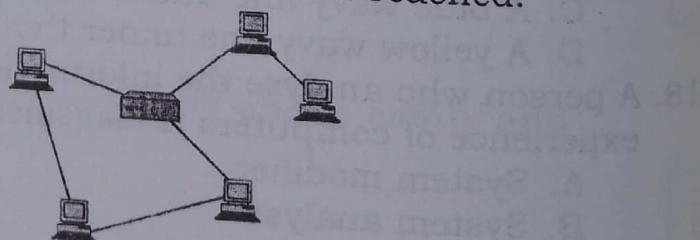
- Is the way various components of a network (like nodes, links, peripherals, etc) are arranged. Network topologies define the layout, virtual shape or structure of network, not only physically but also logically.
- (b) With illustration explain any two network topologies (4Marks)

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.

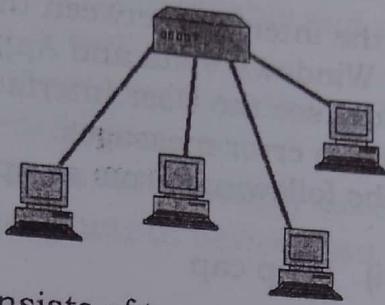
Diagram of ring topology



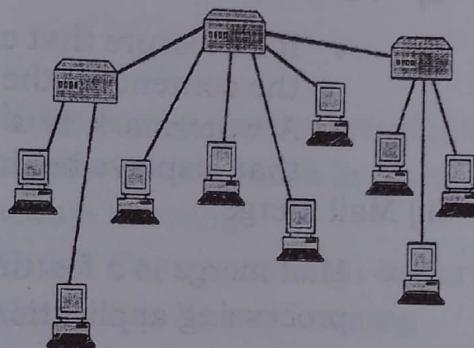
2 Mesh is a way to route data, voice and instructions between nodes. It allows for continuous connections and reconfiguration around broken or blocked paths by "hopping" from node to node until the destination is reached.



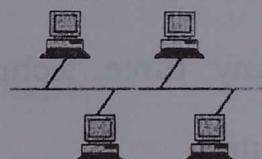
3 Star: The star network consists of one central element, switch, hub or computer, which acts as a conduit to coordinate activity or transmit messages.



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.



(c) List any four functions of an operating system.

(4Marks)

- Starting and restarting of a computer
- Controls the backing store and peripherals such as scanners and printers.
- Deals with the transfer of programs in and out of memory.
- Organizes the use of memory between programs.
- Organizes processing time between programs and users.
- Maintains security and access rights of users.
- Deals with errors and user instructions.
- Allows the user to save files to a backing store.

- Provides the interface between the user and the computer - for example, Windows Vista and Apple OSX. For more information, see the User Interfaces study guide.
 - Issues simple error messages.
22. (a) Explain the following terms as applied to word processing (3Marks)
- i) Drop cap
 - is a large capital letter used as a decorative element at the beginning of a paragraph or section
 - It's a feature in word processing that inserts a large capital letter at the beginning of the paragraph.
 - ii) Watermark
 - It's a feature that creates ghosted text behind the content on the page.
 - A watermark is a faded background image that displays behind the text in a document.
 - iii) Mail merge
 - Mail merge is a feature within most data processing applications that enables users to send a similar letter or document to multiple recipients.

(b) Give any three technological characteristics of fifth generation

computers

(3Marks)

- The ULSI {Ultra Large Scale Integrated Microprocessor} Technology is used in fifth generation computers.
- They use parallel processing.
- They primarily use a superconductor for a computer processor.
- Artificial Intelligence is used in these 5th generations of computers, and these characteristics are considered the most acknowledged and utilized.
- The fifth-generation computer uses high GUI {Graphical User Interface} in operating systems, applications software, and multimedia. They are used to make the system more user-friendly.

- These computers are more reliable and portable compared to other generations of computers.
- They are relatively cheaper than their counterparts.
- They are commercial products.
- High-Level Languages can be easily used with them.
- Advanced input and output devices can be used and utilized with them.
- They play a vital role in the development of the internet and enhancement of www {World Wide Web}.

(c) Explain any two applications of computers in the field of Education

(2Marks)

- Huge & organized store of information
- Audio-visual guides in teaching process for a viable learning
- Quick Communication & Correspondence
- Computer Based Training
- Quick Access to Education

(d) (i) What is a dumb terminal?

(2Marks)

- A dumb terminal is a terminal that does not perform local processing of entered information, but serves only as an input/output device for an attached or network-linked processor.

(ii) Distinguish between Super computers and main frame Computers

Computers

(2Marks)

- Supercomputers are used for large and complex mathematical computations. Supercomputer's speed is more than Mainframe computers so they can execute billions of instructions or floating-point instructions within a second while as Mainframe Computers

are less costly, small in size, and slower in speed than the supercomputers. They are used as a storage for large database and serve as a maximum number of users simultaneously.

23. (a) (i) Computers have both hardware and software. Hardware as physical

parts of the computer are essential to the functioning of a computer. As a

student of computer studies explain the term gaming input hardware

devices give one example

(2Marks)

- is an input device used with video games or entertainment systems to provide input to a video game, typically to control an object or character in the game. Gaming keyboards, joysticks, gaming mouse.

(ii) Briefly explain how we use a finger print scanner as a biometric device

(2Marks)

- Optical scanner works by shining a bright light over your fingerprint and taking a digital photo. The light-sensitive microchip makes the digital image by looking at the ridges and valleys of the fingerprint, turning them into 1's and 0's, and creates the user's own personal code.

(iii) What is a system clock as related with the Cpu?

(1Mark)

- A system clock or system timer is a continuous pulse that helps the computer clock keep the correct time

(b) Write short notes on the following utilities

(5Marks)

- i) Formatting
- Preparing of a storage device for data storage
- ii) Backup

- refers to the copying of physical or virtual files or databases to a secondary location for preservation in case of equipment failure or catastrophe

iii) Antivirus

- is a program designed to detect and remove viruses and other kinds of malicious software from your computer or laptop
- iv) Firewall
- A network security software that monitors and filters incoming and outgoing network traffic based on an organization's previously established security policies.
- v) Defragmentation
- is the process of locating the noncontiguous fragments of data into which a computer file may be divided as it is stored on a hard disk, and rearranging the fragments and restoring them into fewer fragments or into the whole file.

24. (a) (i) Distinguish between absolute cell referencing and relative cell reference

as used in spreadsheets.

(2Marks)

- Absolute cell referencing is a cell reference which doesn't change when copied to another cell while relative cell referencing is a cell reference which changes when copied to another cell.

(ii) What is a worksheet in spreadsheets?

(1Mark)

- A worksheet is a collection of cells where you keep and manipulate the data.

(b) Write the terms below in full

(3Marks)

- | | | |
|----------|---|------------------------------------|
| i) HTTPs | - | Hypertext transfer protocol secure |
| ii) FTP | - | File transfer protocol. |
| iii) URL | - | Uniform resource locator |

(c) (i) Nsegumire has start a school would like to use a computer and

computer software to establish easy the operation of his school by entering all record, modifying when necessary and easy retrieval . As a Student of computer studies advice which software to use to enter the data of all his students.

(1Mark)

- Microsoft access
- Oracle
- dBASE
- FoxPro
- Paradox
- FoxBase
- FileMaker Pro
- Lotus Approach

(ii) List any three advantages of using such software to ease the operation of the school.

(3Marks)

- **Control of data redundancy:** The database approach attempts to eliminate the redundancy by integrating the files so that multiple copies of the same data are not stored.
- **Data consistency:** If a data item is stored only once in the database, any update to its value has to be performed only once and the new value is available immediately to all users.
- **More information from the same amount of data:** With the integration of the operational data, it may be possible for the organization to derive additional information from the same data
- **Sharing of data:** Typically, files are owned by the people or departments that use them. On the other hand, the database belongs to the entire organization and can be shared by all authorized users.
- **Improved data integrity:** Database integrity refers to the validity and consistency of stored data.
- **Improved security:** Database security is the protection of the database from unauthorized users. Without suitable security

measures, integration makes the data more vulnerable than file-based systems.

- **Economy of scale:** Combining all the organization's operational data into one database, and creating a set of applications that work on this one source of data, can result in cost savings.
- **Improved data accessibility and responsiveness:** Again, as a result of integration, data that crosses departmental boundaries is directly accessible to the end-users.
- **Increased concurrency:** Many DBMSs manage concurrent database access, ensuring that two or more users are allowed to access the same file simultaneously, without interfering with each other, or resulting in loss of information or its integrity.
- **Improved backup and recovery services:** modern DBMSs provide facilities to minimize the amount of processing that is lost following a failure.

25. (a) Distinguish between hacking and Cracking
(2Marks)

- Hacking is any attempt to intrude into a computer or a network without authorization cracking is the process of breaking into the system with a malicious purpose and damages data intentionally.

(b) Mention any three ways of preventing Computer crimes.
(3Marks)

- Activity your firewall
- Using updated antivirus software.
- Use a full-service internet security suite. For instance, Norton Security provides real-time protection against existing and emerging malware including ransom ware and viruses, and helps protect your private and financial information when you go online.
- Use strong passwords. Don't repeat your passwords on different sites, and change your passwords regularly. Make them complex.
- Keep your software updated. This is especially important with your operating systems and internet security software.
- Manage your social media settings. Keep your personal and private information locked down.
- Strengthen your home network It's a good idea to start with a strong encryption password as well as a virtual private network

- Talk to children about the internet. You can teach your kids about acceptable use of the internet without shutting down communication channels.
- Keep up to date on major security breaches
- Take measures to help protect you against identity theft. Identity theft occurs when someone wrongfully obtains your personal data in a way that

(c) List any four basic items required to gain access to the internet.

(4Marks)

- Computer/laptop
- Network software
- Internet service provider
- Modem

(d) What was the distinct technological advancement of computers in the third generation?

(1Mark)

- integrated circuits

26. (a) Mention any three areas where artificial intelligence is applied
(3Marks)

- AI Application in E-Commerce-Personalized Shopping
- Artificial Intelligence technology is used to create recommendation engines through which you can engage better with your customers
- Applications Of Artificial Intelligence in Education-Creating Smart Content
- Digitization of content like video lectures, conferences, and text book guides can be made using Artificial Intelligence. We can apply different interfaces like animations and learning content through customization for students from different grades.
- Applications of Artificial Intelligence in Lifestyle-Autonomous Vehicles
- Automobile manufacturing companies like Toyota, Audi, Volvo, and Tesla use machine learning to train computers to think and evolve like humans when it comes to driving in any environment and object detection to avoid accidents.
- Facial Recognition-Our favorite devices like our phones, laptops, and PCs use facial recognition techniques by using face filters to detect and identify in order to provide secure access.

- Applications of Artificial intelligence in Navigation. GPS technology can provide users with accurate, timely, and detailed information to improve safety.
- Applications of Artificial Intelligence in Robotics. Robotics is another field where artificial intelligence applications are commonly used. Robots powered by AI use real-time updates to sense obstacles in its
- Applications of Artificial Intelligence in Human Resource. Did you know that companies use intelligent software to ease the hiring process?
- Applications of Artificial Intelligence in Healthcare. Artificial Intelligence finds diverse applications in the healthcare sector, AI applications are used in healthcare to build sophisticated machines that can detect diseases and identify cancer cells..
- Applications of Artificial Intelligence in Agriculture. Artificial Intelligence is used to identify defects and nutrient deficiencies in the soil. This is done using computer vision, robotics, and machine learning applications, AI can analyze where weeds are growing.
- Applications of Artificial Intelligence in Gaming. Another sector where Artificial Intelligence applications have found prominence is the gaming sector. AI can be used to create smart, human-like NPCs to interact with the players.
- Applications of Artificial Intelligence in Automobiles. Artificial Intelligence is used to build self-driving vehicles. AI can be used along with the vehicle's camera, radar, cloud services, GPS, and control signals to operate the vehicle.
- Applications of Artificial Intelligence in Social Media. On Instagram, AI considers your likes and the accounts you follow to determine what posts you are shown on your explore tab.
- Applications of Artificial Intelligence in Marketing. Artificial intelligence (AI) applications are popular in the marketing domain as well.
- Applications of Artificial Intelligence in Chatbots. AI chatbots can comprehend natural language and respond to people online who use the "live chat" feature that many organizations provide for customer service.
- Applications of Artificial Intelligence in Finance. Artificial intelligence can also detect changes in transaction patterns and other potential red flags that can signify fraud, which humans can easily miss, and thus saving businesses and individuals from significant loss.

(b) Lwanga's printer has stop working and flashes an orange light.
 List any
 three problems associated with that sign
 (3Marks)

- The print machine is about to print, or it is in motion to print.
- The machine is out of paper.
- Tray is fully of paper.
- Ink cartridge is not fixed properly
- Paper jam.
- Insert appropriate ink cartridge.

(c) List any two factors that you would consider in order to buy a printer.

(2Marks)

- The Cost of hardware. Printers are available in many reasonable prices these days.
- Laser or inkjet.(type of printer). You can use both laser and inkjet printers for occupational purposes. But laser printers are a better option than inkjet printers as they can print at a faster rate.
- Print speed. The other main issue is the speed of the printer. Papers per minute.
- Print quality. This is important aspect that you should check. Everything depends on the print quality of the printer
- Reliability. It is a big issue if the ink cartridge starts giving you problem. The printer that you should select must be reliable and have a proper warranty so that in the case of any situation.
- Connectivity. Connectivity is a major point because you don't want a device that does not connect with the existing network that you are already having.
- Ease of use. If you are professional, then, you don't require a device that is way more complicated for anyone to understand.
- Cost per page. Cost per page is the aspect that helps you determine how much your printer is going to cost you on a per page basis.
- High-volume or low-volume. High-volume printers are basically photo printers.

(d) Distinguish an animation and a transition in presentation software.

(2Marks)

- Animations in PowerPoint are special visual or sound effects that can be applied to elements present on a slide such as text, shape, image,

icon, etc. Whereas, Transitions in PowerPoint are special visual effects applied to a complete slide.

SECTION C

27. (a) Define computer hardware text input devices giving at least one example. (2 Marks)
- Computer hardware text input devices is a physical computer component used to enter text electronically into the computer.
- (b) Distinguish between optical storage media and solid state media (2 Marks)
- Optical storage media refers to a media on which data is stored & retrieved using a beam of light whereas solid state media is a media on which data is retrieved and stored electronically.
- (c) The computer has slowed down gradually and it takes long to respond to instructions. The major problem is associated with some of its hardware components .List any four hardware components and explain how they influence the speed of a computer.
- Ram is used to hold information in a location that can be accessed quickly, allowing programs to run fast, and large data calculations to be made efficiently.
 - Hard disk - The bigger the hard disk space the faster the computer.
 - Speed- Processor cores and clock speeds determine how much information can be received at a time, and how quickly that information can be processed on your computer.
 - Video graphics card-it helps to help some programs improve speed.
 - Software also determines computer speed, specifically how many programs — or processes — are running in the background and taking up computer power and resources.
- (16 Marks)
(2 Marks)
28. (a) What is a router?
- A router is a device that connects two or more packet-switched networks or sub networks.
- (b) Explain any four factors which influence the speed of a network (8 Marks)

(i) Frequency and bandwidth of the medium; [rate of transmission]

The higher the frequency, the wider the bandwidth, the more data will be sent over a medium and vice versa.

- ❖ NB; Bandwidth; is the difference between the highest frequency and the lowest frequency.

(ii) Line configurations; These are either point – to – point or Multipoint.

- ❖ A point – to – point connects the sending and receiving devices such that a terminal with a central computer.

(iii) Direction of transmission

- ❖ In simplex, data can travel only in one direction.
- ❖ In half duplex, data travels in both directions but only one direction at a time.
- ❖ In full duplex, data travels back and forth at the same time.
- ❖ Transmission mode

(iv). Protocols (rules for data transmission)

A protocol specifies the type of electrical connections used, the timing of message exchange, error detection techniques, specify how the receiving devices will acknowledge sending devices (handshaking) etc.

(v) Capacity of hardware in the network. The speeds of hubs, switches and NICs will

greatly determine the speed of the network.

(vi) The server. The amount of RAM installed in the server and the speed of the hard disk greatly affects the speed of the network.

(vii) Location of software and files. If software is stored on the workstation hard disks, it increases (speeds up) performance and reduces network traffic.

(c) Identify any two computer faults and suggest ways of overcoming them

- ❖ Over heating of the computer-Resolved by changing the processor. (8Marks)

Restarting of the software.

-Re-installation of the operating system.

CLOUD COMPUTING

It is all about delivery of computing services including servers, storage, databases, networking, etc., over internet.

It offers utility-oriented IT services to users worldwide.

Its main goal is to provide magnitude improvement in cost effective, dynamic provisioning of IT services.

It reduces energy consumption, waste, and carbon emissions, reduce carbon foot print, etc.

It increases revenue of business organizations and help them to achieve business goals, provide faster communication, secure network collaboration, promote efficient utilization of existing resources, etc.

GREEN COMPUTING

It is all about utilizing energy to perform operations in most efficient way possible.

It helps in using least amount of computing resources for doing most amount of work.

Its main goal is to attain economic viability and improve way of how computing devices are used.

It reduces use of hazardous materials, increase energy efficiency during product's lifetime, manage power and energy efficiency, create sustainable business processes, etc.

It reduces carbon footprint of business and provide a reputation boost, help business responsibly use energy and keep business running on energy-lean diet.

- **Entertainment and Leisure.** ITs offers lots of leisure and entertainment activities in form of Computer games, Computer audio music and video players
- **Health & Medicine.** ITs are now being used for;
 - ✓ Medical tests for instance blood, cancer, Brain damage etc
 - ✓ Carrying out sensitive operations on sensitive body parts like the brain, heart, kidney, etc.

-**Transport & communication.** ITs are also being used for;

- Units of carriage surveyarance in logistics management, Gps.
- **Accounting and Finance.** Software/programs are now available for producing financial reports like income statements, Balance sheets, and cash flow statements.
- **Climate and Weather:** Programs have now been developed to accurately predict and report changes in climate and weather to aid travelers and farmers.
- **Security and military.** IT Laser guided cameras and satellites are now used for national and domestic security.
- **Manufacturing:-** Computer Aided Design (CAD) and CAM (Computer Aided Manufacture) are also in this category.

(d) Explain these terms: (2 Marks)

- (i) Hard boot- is a boot process in which a computer system starts up from a complete powerless state.
- (ii) Soft boot- is an action that uses software to restart a computer without removing the computer's power.

(e) Describe any two situation which necessitate restarting of a computer

(4 Marks)

- ❖ If your computer is running slow.
- ❖ If your computer is acting "weird"
- ❖ Unexpected system freeze-ups.
- ❖ Driver or hardware error.
- ❖ Lagging Internet speeds.
- ❖ Connecting to the internet.
- ❖ After a software or patch update.
- ❖ After any type of software or hardware installation.

(f) Demonstrate how you would perform formatting of a hard disk

(4 Marks)

- ❖ Select the hard disk to format.
- ❖ Right click/format/Are you sure you want to delete/cancel
- ❖ Select format to format hard disk.

It is internet service that provides computing needs to computer users.

It is that a computer and technology is how much responsible for environmental change.

- ❖ Blinking of the monitor- Change the monitor.
- (d) Define the term Computer virus (2Marks)
- ❖ A computer virus is a computer code or program specially designed to damage or cause irregular behavior in other programs in a computer. Or It is a program which attaches itself to the system and alters the normal functioning of a computer.

29. (a) Distinguish between Cloud computing and Green Computing (2 Marks)

- ❖ Cloud computing is basically a service-oriented architecture that involves delivering hosted services over internet whereas Green computing is the study and practice of environmentally sustainable use of computers and related IT resources.

(b) Explain any four areas of application of computers

(8 Marks)

• **Education and training.**

Many Universities, Colleges, schools and public libraries are online with websites for purposes of making easy access to educational information..

• **Information plus data storage.**

ITs have got immense internal and external storage devices for storage of huge volumes Data. Hence the common paperless society

• **Business-E-Business and E-commerce** facilitate the buying and selling of goods, services and works online. Businesses have got websites and networked computers they use to advertise, processing of orders, receipting of purchased products, etc.