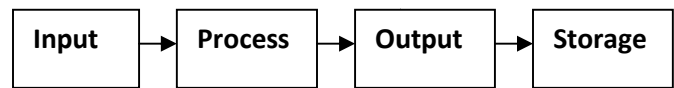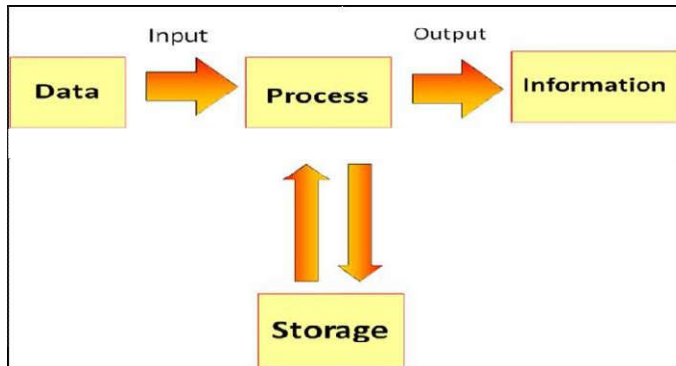**1a) List three major specifications one would consider when buying a laptop computer.**

Processor speed/power/model/type
Amount of memory installed (RAM)
Hard disk space/amount of storage space
Ability to communicate with other peripheral hardware
VGA capacity
Screen specifications-resolution and size
Batter life span
Compatibility with software-operating systems
Laptop size

b) Illustrate the information processing cycle.

2a) Distinguish between cold booting and warm booting

- Cold booting refers to starting a computer that had been powered off completely whereas warm booting refers to restarting a computer that is already powered on or running.

b) Give three circumstances under which a computer can be warm booted.

- When the computer freezes-memory is full

- When the computer freezes-memory is hangs (does not respond)-CPU overheated

- 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)/computer configurations

- When a user wants to clear a malicious infection like malware, spyware, viruses that are in memory

- When a user wishes to switch from one operating system to another (Multiple O.S)

- After software update
- After software upgrade
- After uninstalling software
- After uninstalling hardware
- After installing a new hardware
- When the computer system slows down
- When there is suspected system tapping

- After malware/virus scanning
- When a deadlock occurs
- Before Installing software
- When application software fails to work
- When power voltage suddenly lowers
- To activate a boot scan
- After performing a system restore

- During troubleshooting

3a) What is information and communication technology (ICT)?

- *A collection of related technological tools used to create, store, manage and disseminate information.*

b) Outline any three measures that can be taken to prevent environmental degradation through the use of ICT.

- *Minimize the use of paper by using the internet to send e-mails than physical letters*
- *Through properly recycling, disposing off of e-waste.*
- *Sensitize people about environmental management through social media platforms*
- *Through use of Google maps to spot areas where degradation has occurred so as to mitigate the effect*
- *Through use of television talk shows to sensitize people about environmental management*
- *Through use of radio announcements to disseminate information about environmental management*
- *Through use of pop-up messages sent to phone to alert or remind people about environmental management*
- *Through use of drone to plant trees, spay, irrigate, put off fire in hard to reach areas*
- *Through use of grid computing*
- *Through use of virtualization of computing hardware*
- *Through use of low power hardware like LCD monitors and laptops*
- *Through use of cloud computing*
- *Through developing bio-degradable computing devices*
- *Switch off hardware when not in use*

4a) Give two reasons why file management is important in a computer system

- *To improve file security through passwords and file conversions*
- To free up storage space for more files through file compressions
- For quick transfer of files
- To quickly access files through grouping files and naming files

b) List three operations which can be performed on a file

- *Creating a file*
- *Opening a file*
- *Updating a file*
- *Deleting a file*
- *Closing a file editing a file*
- *Sending a file*
- *Converting a file*
- *Printing a file*
- *Saving a file*
- *Zip or compress a file*
- *Sorting files*
- *Combine/split a file*
- *Encrypt a file*
- *Backup a file*
- *Restore a file to a previous version*
- *Share a file*
- *Scan a file*
- *Hide a file*
- *Drag a file: method of moving a file from one location to another on the screen by use of a mouse.*
- *Creating a duplicate of a file*
- *Move/cut a file: transferring a file form one location to another*

5a) Explain the term troubleshooting as used in computers

- Troubleshooting *is a process of identifying and solving/fixing a computer problem*

b) State three ways in which one can troubleshoot a computer that has failed to start

- *Remove/replace/re-fix properly hardware like keyboard, mouse, display device, RAM chips, bus connections*
- *Start the computer from an external startup disk*
- *Repair the operating system*
- *Remove any external storage media like flash disks at start-up*
- *Ensure the power connections are properly fixed*
- *Ensure the computer is connected to required power voltage amount*
- *Restart the computer to correct any software problems before it completes the boot process.*
- *Run properly recommended system settings*

6a) Define an input device

- *An input device is a device used to feed/enter data and instructions into a computer.*

b) Name two basic input devices associated with common desktop computers

- *Mouse*
- *Keyboard*

c) Identify an input device for each of the following data
Sound-*Microphone*
Images-*Camera/Camcorder/Scanner*

7a) Outline any three functions of an operating system

- *Allocating system resources*
- *Offering data and software security*
- *Monitoring system performance*
- *Establishing network connections*
- *Providing a platform for applications to run*
- *Booting the computer*
- *Memory management*
- *Configuring devices*
- *Providing the user interface*
- *Spooling print jobs*
- *Managing storage and storage media*
- *Error management*

b) Name any two operating system software
- *Disk operating system*
- *Windows operating system*
- *UNIX*
- *LINUX*
- *Solaris*
- *Google operating system*
- *Android*

8) Ali has a DVD full of data and would like to transfer the data to CDs. The capacity of the DVD is 4.7GB and each CD is 700MB. Calculate the number of CDs he would need to transfer all his data.

- *1 GB*   *=1073741824*
- *1MB*   *=1048576*
- *4.7GB*   *=4.7*1073741824*   *5046586573*
- *700MB*   *=700*1048576*   *734003200*

- *5046586573/734003200*   =   *6.875428571*
- *7 CDs would be needed to store 4.7GB of data*

9a) Define the term tailor-made software

- *Tailor-made software is software designed at a user's request in order to meet the user's particular needs*

b) Outline any four qualities of good application software

- *Should be error free-operate without bugs*
- *Should provide help incase of user errors*
- *Should be flexible*
- *Should be compatible or machine independent*
- *Should not stop working no matter the errors made by the user-robust*
- *Should be easy to use*
- *Should be easy to learn*
- *Should be easy to update/upgrade*
- *Should have user manuals and documentation*
- *Should be reliable*

- *Should be capable of displaying error messages to the users*
- *Should be scalable-easy to change to meet user needs*
- *Should be interoperable-work with other software*
- *Should be accurate in retrieving results*
- *Should be portable-work on multiple operating systems*
- *Should be efficient*
- *Should be readily available*
- *Should be authentic/genuine/licensed*

10a) Write the following computer abbreviations in full

CPU
- *Central processing unit*

ALU
- *Arithmetic logic unit*

- *Arithmetic and logic unit*

b) State the role of each of the following CPU components

Bus
- *Carries data and instruction between different computing components*

Control unit

- *Manages the activities in the CPU*
- *Fetches instructions*

- *Decodes instructions*
- *Executes instructions*

Registers

- *Temporarily hold data and instructions needed by the CPU*
- *Helps the CPU to access data and instructions quickly*

11a) Distinguish between utilities and application software

- *Utilities are service programs that enhance the computer system operations whereas application software refers to software designed to meet the needs of the user.*

b) Give three examples of utility programs
- *File viewer*

- *Backup utility*

- *File compression utility*
- *Screen saver*
- *Diagnostic utility*
- *Antivirus utility*
- *Uninstaller*
- *Sorting utility*
- *Disk scanner*
- *Disk defragmenter*
- *Software monitors*
- *Copying utility*
- *Merging utility*
- *Debuggers*
- *Disk partitioners*
- *Disk cleaner*
- *Memory testers*
- *Anti spy utility*
- *Delete utility*
- *Network utility*

12) Explain the following as applied to Internet

Hotspot

- *A location where an internet connection can be accessed wirelessly*
- *A specific location that provides a data link or connection on a wireless network.*

Internet service provider

- *An ISP is a company that provides Internet connections to individuals and other companies.*

Search engine

- *A program used to find web contents using keywords or leading statements on the World Wide Web.*

13) Give five symptoms of a computer infected by a virus

- *Changes to disk volume identification*
- *Executable files changing size for no obvious reasons.*
- *Programs/files mysteriously disappearing*
- *Access lights turning on for non referenced devices*
- *Less memory available than usual*
- *Unusual error messages occurring more frequently*
- *Disk accesses seeming excessive for simple tasks*
- *Programs taking longer than usual to load*
- *Unfamiliar graphics or quizzical messages appearing on the screen*
- *Failure to do print jobs*
- *Computers may not start at all*
- *Computers may freeze or hang*
- *Pop up of scary /warning messages*
- *Denial of access to some system tools*
- *The computer shut down and restarts without any command from user.*
- *Unexpected anti-virus disabling*
- *Change of keyboard stroke*
- *Corrupting of files*
- *Duplication of files*
- *Creation of file shortcuts*
- *System properties fluctuate*
- *Uncalled for musical or sounds appearing randomly*
- *Booting failure*
- *Deletion of files*
- *Alteration of file names*
- *Screen blackout*

14a) Give two reasons to justify ownership of institutional websites

- *To have copyright over the site*
- *To have patent rights over products on the site*
- *To have the right to sell products online*
- *To have a right to post information online*
- *To have a right to advertise goods and services*
- *To have a right to edit and format the content on the site*
- *When the company has online interaction with the public*
- *To welcome criticism or feedback from the public*

- *To encourage pride of ownership*
- *To advertise the business*
- *To sell products online*

b) What is a web browser?

- *Software used to navigate content on websites*

c) Under what circumstances can someone use a uniform resource locator (URL) in web browser?

- *When a person wants to access a specific resource directly on the internet*
- *Incase a person knows a particular link of a given site or webpage*
- *Incase a person wants to quickly access a particular site/page/resource*
- *Incase a search engine fails to locate the site link*

15) Give any five advantages of using automation in an industry

- *Increased productivity*
- *Improved remote access to materials in hazardous areas*
- *Improved monitoring or supervision of industrial activities*
- *Efficient handling of repetitive tasks*
- *Reduced production time making goods available on market in a short time*
- *Reduced accidents*
- *Reduction in cost of production-no need to pay workers*
- *Improved quality of products and range of products*
- *Efficient utilization of raw materials leading to reduction in operational costs*

16a) Define data communication

- *Data communication refers to transferring data, instructions and information to another computer or some other devices over a channel.*

b) State any four requirements for setting up a computer network

- *Network interface cards*
- *Router*
- *Repeater*
- *Hubs/Switches*
- *Ethernet cables/ Transmission media*
- *Modem*
- *Computers*
- *Wireless access points*
- *Bridges*
- *Network software*
- *RJ45 connectors*
- *Qualified/skilled personnel in networking*
- *Crimping tool/terminator*

17. For questions a)-e), fill in the missing words from the list below.

Formula bar	Worksheet	Active cell	Workbook
Cell	Column	Name box	

a) The **Cell** is the intersection of a column and a row

b) The content of a current cell is also displayed in the **formula bar**

c) The **active cell** is one with a thicker boundary and is the insertion point in a spreadsheet

d) The cell address of the current cell is displayed in the **name box**

e) A spreadsheet file is referred to as *workbook*

18a) Give three disadvantages of electronic communication

- *Associated with unreliable networks*
- *Prolonged use of electronic gadgets leads to health problems like eye strain, backache, neck ache, headache, stress, wrist pain and body fatigue*
- *Associated with quick and widespread computer malware/viruses*
- *Change in technology-obsolescence*
- *Facilitates cyber terrorism and defamation*

b) Name any two manual communication methods

- *Ringing a bell or using a bell*
- *Drumming or using a drum*
- *Word of mouth or by a messenger*
- *Using gestures/signs/posture*
- *Postage or ordinary mailing*
- *Whistling or using whistles*
- *Making an alarm or ululation*
- *Use of fire throws/fireworks/smoke*

19a) Give two situations under which electronic presentations would be used

- *During teaching*
- *When presenting or addressing a big audience*
- *During advertisements*

b) State three advantages of using electronic presentations over traditional chalk and talk

- *An electronic presentation can be save for future reference compared to traditional chalk and talk*
- *Makes the presentation more interesting due to use of multimedia like animations and transitions*
- *Visual explanations/illustrations are more clear*
- *An electronic presentation is more systematic and precise*

20a) Differentiate between intranet and extranet

- *An intranet is a network that allows sharing of resources only among members within an organization whereas an extranet is a network that extends resources to authorized members outside the organization related to that organization.*

b) Define a local area network (LAN)

- *A LAN is a network that spans a limited/small geographical area like a building or room.*

c) Suggest an area network which is restricted to connecting users in a city.

- *Metropolitan area network (MAN)*