

ICT Seminar AT KINAAWA HIGH SCHOOL – KASANGATI 2018

THEORY QUESTIONS A' LEVEL SUB ICT

1. (a) Identify two types of crime that are associated with the widespread use of IT.

Answers may include:

- ❖ Phishing or description
- ❖ hacking or description
- ❖ identity theft
- ❖ coordination of criminal activity or terrorism
- ❖ disseminating viruses
- ❖ denial of service
- ❖ credit card fraud
- ❖ fraudulent selling from web sites
- ❖ cyber bullying / harassment
- ❖ any copyright issue (must clearly indicate an IT situation)

(b) Describe two pieces of advice that a bank can give to customers to help them avoid such dangers.

- ❖ Don't disclose PIN / passwords / other details over the web [the bank never requests this via email].
- ❖ Report scams [by forwarding suspicious emails to the bank / other competent organization].
- ❖ Don't click links in emails [type in the known URL in the browser address bar].
- ❖ Look for evidence of site security [such as padlock or https].
- ❖ Evidence of verification [such as Veri sign]

(c) Discuss how it may be possible for a bank to become aware of fraudulent transactions taking place in its customers' accounts

- ❖ unusual transactions
- ❖ software to detect this
- ❖ transactions from countries other than customer's residence
- ❖ customer complains
- ❖ serious overdraft.

2(a) To what extent are employees' concerns about telecommuting outweighed by the advantages to both the employer and the employee?

Employee concerns may include:

- ❖ Lack Of Technical Support At Home If Computer/Connection Malfunctions
- ❖ Less Involvement In Meetings/Potentially Fewer Opportunities For Promotion
- ❖ Less Social Contact With Fellow Workers
- ❖ Inability To Separate Home And Work – Work Encroaches On Family Life
- ❖ Difficulty Concentrating In Home Environment/Greater Need For Self motivation
- ❖ the company no longer needs to hire employees locally leading to an increase of unemployment in the area
- ❖ lack of support for the home office (e.g. no photocopies, staplers, secretaries)
- ❖ employees may need to setup/set aside a workspace in the home
- ❖ expectations of being available longer hours – this may lead to expectations of more work
- ❖ lack of IT skills to use all the hardware devices and software tools

- ❖ the need to have Internet access and other equipment (e.g. fast computers, mobile phones, etc.) might involve costs for employees
- ❖ if the connection or technology at home fails (reliability of home equipment) then communication with the office is not possible, files may not be available or a meeting might have to be cancelled
- ❖ if the employer monitors the employee's home computer there could be a privacy issue as it is also used for personal files and communications.

Employer advantages may include:

- ❖ cost saving on office space/parking
- ❖ ability to employ global workers/handicapped people/parents with small children
- ❖ increased productivity/less absenteeism
- ❖ Reduced liability risks e.g. reduced accidents in the work place.

Employee advantages may include:

- ❖ time saved in travelling to and from work
- ❖ may work at home if ill/injured
- ❖ reduced costs e.g. petrol
- ❖ less interruptions
- ❖ more control over organization of work
- ❖ more control over factors outside work e.g. flexibility with child care/family time.

(b) Describe how the barcode on a product is used at the checkout to produce the product description and price on the bill.

- ❖ Barcode is a key field for the product database – key field is unique.
- ❖ Barcode number is used to search the product database – using index.
- ❖ Corresponding record is retrieved – copied into RAM/terminal.
- ❖ Matching record contains price and product details – as fields in the record.

(c) State two ways UCHUMI SUPERMARKRT targets its advertising to customers, using information gained from the customer loyalty programme.

Answers may include:

- ❖ e-mail customers
- ❖ customized DTP flyers
- ❖ identify a client at the cash point when loyalty card inserted and provide the targeted advertising on the screen
- ❖ supermarket web site with a personalized screen at logon (which advertises products/use of cookies to do this)
- ❖ Sending texts to mobile phones of customers.

3. (a) Identify two ways in which photo editing software can be used to create a photo of a situation that never existed

- ❖ Superimposition idea: e.g. two or more original photos to appear as one and create a fictitious situation
- ❖ editing / alteration of existing image: e.g. add/erase information.

(b) Describe how such photographs might be verified for their authenticity.

- ❖ add authentication code to image file
- ❖ add additional data about the picture [compare with the appearance of the image]
- ❖ software to tell if image has been altered [detects if changes made since Original photo taken]
- ❖ biometric data stored at same time as photo taken [compared with data from suspected fraudster]
- ❖ attempting to locate the original source [by typing keywords in an Internet search engine]
- ❖ open in a photo editing program [to look for evidence of merging of more than one photo]
- ❖ contact the institution or person photographed [to verify the truth of the situation]
- ❖ Inconsistencies in photograph [example such as colours / shadows / pixellation / resolution / logic (item in photo that couldn't be there in reality)].

(c) Discuss how the enhancement of digitally produced photographs may be misused.

Answers may include:

- ❖ false enhancements to advertisements
- ❖ for political gain
- ❖ to malign someone
- ❖ embarrass a person for humorous reasons
- ❖ Falsely claiming that a photograph is your own.

4. (a) Identify two technological requirements for people to use Internet telephony

- ❖ headset
- ❖ microphone
- ❖ VOIP / software that connects caller and person called
- ❖ high speed / broadband and Internet connections
- ❖ analogue to digital input / output devices
- ❖ personal computing devices (accept computer)
- ❖ sound card
- ❖ compression software
- ❖ Accelerator cards.

(b) Describe one advantage for individuals who use Internet telephony compared with using a conventional telephone service.

- ❖ reduced cost [no extra cost apart from regular Internet connection cost whereas a regular phone call is charged per call]
- ❖ text messaging can be done simultaneously [which can be printed whereas a regular phone call is voice only]
- ❖ record of calls made [details stored on own computer of date / time / user called / length].
- ❖ calls can be made from any connected computer [no problems with calling different numbers according to location].

(c) Describe one disadvantage for individuals who use Internet telephony compared with using a conventional telephone service.

- ❖ [
- ❖ telephones are more Computer must be switched on [unlike the telephone which rings to alert you to a call]
- ❖ Potential invasion of privacy [digital data is more subject to unauthorized access compared with the analogue telephone]

Sender and receiver must have VOIP software and be registered as users common in homes than **computers]**

(d) Discuss how developments in Internet telephony might affect the nature of the services offered by conventional and mobile phone (cell phone) providers

Answers may include:

- ❖ One number for an individual / no distinction between land line and mobile devices
- ❖ mobile networking services
- ❖ televoting services
- ❖ one bill for all telecom's services
- ❖ any other technologically feasible suggestion.

5. (a) Define the term WAN.

Answers may include:

- ❖ Wide Area Network
- ❖ connects several LANs
- ❖ covers large geographical area
- ❖ computers are linked between health call centers in different locations.

(b) Identify two services that an ISP can provide to users.

Answers may include:

- ❖ Internet access
- ❖ e-mail accounts
- ❖ web space hosting
- ❖ spam or adware filtering
- ❖ web page filtering
- ❖ technical support
- ❖ virus protection.

(c) To what extent are the negative effects of government control of the Internet, outweighed by the benefits to families of using the free filtering software?

Negative effects of government control:

- ❖ lack of freedom of access to information
- ❖ government could also filter opposing political or cultural information
- ❖ government will decide on the appropriateness of information
- ❖ children will not learn to protect themselves
- ❖ cost which could be passed on to the tax payer.

Positive effects on families:

- ❖ parents do not need to worry or supervise children
- ❖ children will have a safe environment
- ❖ computer can be placed anywhere in the house
- ❖ some parents may now decide to have Internet access.

6. (a) Define the term operating system.

Answers may include:

- ❖ manages the hardware and software resources of the system
- ❖ manages the memory – optimizes use of RAM
- ❖ file management – locates files and programs requested
- ❖ provides the user interface
- ❖ Provides a (software) platform on top of which other programs(applications) can run.

(b) Describe two utilities provided by an operating system that would be helpful in enabling the author to use his computer effectively despite his injury.

Answers may include:

- ❖ sticky keys – for accessing capital letters, control sequences etc.
- ❖ voice input – alternative to typing
- ❖ filter keys – to ignore accidental repetition of keystrokes
- ❖ mouse keys – control mouse with keyboard
- ❖ Onscreen keyboard – to provide an alternative to a physical keyboard(as long as it is clear that it is provided by the operating system).

7. (a) Describe how a password-protected web site operates.

Answers may include:

- ❖ provides a restricted area of the web for authorized users
- ❖ only users with a login and the correct password may have access to the screen that shows the school material
- ❖ web site uses a database to check valid passwords against a password file
- ❖ different logons could have different privileges/permissions e.g. a teacher logon may enable read / write access but a student may only be able to read information on the site
- ❖ users have to register providing user name and password, then every time they need to enter they need to give their user name and password to be allowed access.

(b) Describe two IT features that a computer user would require to access or use this site.

Answers may include:

- ❖ web browser – software needed to open and navigate the web site, that interprets the markup of files in HTML, formats them into web pages, and displays them to the user
- ❖ Internet connection – needed to have access to the Internet and through it to

- ❖ the school web site, it is the connection which allows you to get on the Internet through an Internet Service Provider (ISP)
- ❖ web site address of the school – users need to have the school URL to be able to access the web site to be able to identify the page to be loaded
- ❖ login and password – user has to be provided with these to be identified as an authorized user and gain access to the site
- ❖ modem/cable modem/any sort of physical or wireless connection to the Internet
- ❖ appropriate software for viewing/running applications included in the web page – in some situations specific software may be needed to access material in the web page (a reader for portable documents/flash player).

(c) Explain how the new web site could improve student learning.

Answers may include:

- ❖ in the web site work can be interactive, use animations and/or have links to other sites
- ❖ tasks in the website may be done several times by students until the topic is understood
 - ❖ when using application in the web site feedback may be provided instantly by the program in use
 - ❖ motivation: some students may prefer to work using the computer than working with pencil and paper
 - ❖ access: students and parents will always have access to the materials as long as they have a computer with an Internet connection (papers may get lost)
 - ❖ web site may provide different types of tools for different learning abilities: students with different learning abilities may have new possibilities to study if different types of tools are uploaded in the web site
 - ❖ organization: this may be more organized than a student's file/will help students who lose papers, and may help some students find past exercises to revise
 - ❖ by using the web site parents may follow students' needs and help them at home
 - ❖ the web site will allow students to have access to the materials from home or from any other location (even when sick or on holidays)
 - ❖ Resources in the web site (applications, links and others) are selected by the teacher – they are reliable and directly related to the topic being studied.

(d) This system may be a great advantage for students, but it may place teachers with limited IT skills under great pressure

Discuss the concerns of some teachers when they are asked to make this new resource available for the students

Answers may include:

- ❖ Teachers may not feel competent in the use of technology
- ❖ Teachers may need to spend extra time learning the tools/creating the new resources
- ❖ Teachers may be expected to pay for their own training to learn these new tools
- ❖ Teachers may be worried that not all students have the facilities at home to access the site

- ❖ Teachers may be worried that the school IT systems will not be always available because of system failures and that students may use that as an excuse to not do their work on time
- ❖ Teachers may not like parents interfering with students work as they would like students to be independent
- ❖ Teachers may be worried about copyrights when placing their materials on the web
- ❖ Teachers who are used to traditional methods of teaching may have reservations about this system
- ❖ Teachers may be concerned that students may not know how to use the system – training for students will be required
- ❖ Teachers may be concerned about privacy of photos placed on the web site – images of students can be copied, shared and even manipulated
- ❖ teachers may be concerned that information on the site could be changed – integrity of the data would be at risk if a hacker could gain access and change information making it unreliable for students.

8. (a) Identify two processes involved in data logging.

Answers may include:

- ❖ Physically collecting the data using hardware
- ❖ using a computer to collect data through sensors
- ❖ Analyzing/processing/verifying the data
- ❖ saving/storing results
- ❖ outputting results
- ❖ converting analogue signals to digital.

(b) Describe two other ways that automatic data logging may be used.

Answers may include:

- ❖ Weather stations – to capture information about weather conditions (temperature, wind, pressure, humidity)
- ❖ Medicine – capturing information from sensors attached to patients at ICU
- ❖ Greenhouses – capturing information about temperature and humidity to actuate and change the conditions
- ❖ Engine management – collection of data about driving history
- ❖ driving patterns – to automatically detect the speed of a car
- ❖ Stock control using smart shelves – shelves automatically scan the RFID tags in products and alert the store when supplies are getting low
- ❖ RFID tags worn by athletes – used for entry to club/finishing positions in races
- ❖ RFID tags worn by travellers boarding a plane – used to check the passenger list
- ❖ Criminals can be tracked through an electronic device worn as a bracelet or belt – using GPS the location of the criminal is found and data is automatically sent to a police control station
- ❖ Use of RFID tags on products – used to automatically record the prices as customers walk through checkout counters
- ❖ Use of sound sensors – to capture sound levels in different areas of a building (school/hospital) – to help provide a better work/study/hospital environment

- ❖ Use of movement sensors to record seismic activity – data is recorded to study patterns and make predictions
- ❖ data logging – to monitor seasonal water levels in a river that tends to flood or to determine the rate of increase of water levels and give predictions about flooding
- ❖ Reading of car number plates – to identify drivers who are breaking speed limits
- ❖ Tracking tagged wild animals – to study behavioral patterns.

(c) Explain two advantages of using automatic data logging to keep records compared with manual data logging.

- ❖ Data can be captured 24/7 without the need for people to make measurements.
- ❖ Data from automatic logging is exact and no mistakes are made unless equipment is faulty.
- ❖ Data is in digital form from the moment it is captured and can be used straight away to produce graphs or statistics.
- ❖ Data from data logging can be analyzed immediately and results can help prevent disaster.
- ❖ Automatic data collection allows for data to be collected faster and more efficiently than manually collecting the information.
- ❖ After the initial startup cost, no one has to be paid to collect the data
- ❖ Data can be captured in places which are too remote or dangerous for humans e.g. in deserts or on top of a volcano.

(d) Information obtained at automatic tolls may also be used to map traffic information and help telecommuters travel on the highways. Some cards may also contain customer's information or an identification number to relate the customer to a record in a driver database for later use.

To what extent do the concerns about invasion of drivers' privacy outweigh the advantages of using this system to improve the traffic of cars in a city?

Concerns about driver's privacy invasion:

- ❖ Information may be saved to track people e.g. politicians, criminals
- ❖ Information saved may be made available to others
- ❖ Databases may not have appropriate security, hackers may gain access.

Advantages for improvement of traffic control:

- ❖ Maps may be produced to understand traffic flow at different times, days
- ❖ Drivers who use the highways may get information about better ways to plan routes and avoid traffic jams
- ❖ Information about highways with less traffic may be made available to navigation systems in cars and drivers may choose better routes.

9(a) Distinguish between data and information giving an example of each

Data is a collection of raw or disorganized facts, figures and symbols usually of little meaning while Information is a collection of organized data that has been processed and is meaningful data information

- ❖ Musical notes
- ❖ Alphabetical letters
- ❖ Songs

- ❖ words

(b) Briefly explain the four stages of the information processing cycle

- ❖ **Data collection:** data is acquired from its source and recorded onto some media such as questionnaires & voice/video recordings. In this stage the data may also be prepared for input
- ❖ **Data Input:** Data is entered into the computer for processing eg by use of keyboard, downloading document from internet
- ❖ **Data processing:** Meaning is added to the data input depending on the instructions of the user. Processed data usually results into some kind of output such as word processed file, spreadsheet
- ❖ **Output of information:** Result of processing is given out for consumption eg print out of a report, music

10(a) Distinguish between a file and a folder

- ❖ A folder is a storage location for related files while a file is a collection of related data

(b) Describe three features of a file name

- ❖ A file name is made up of two parts: The file name which relates to the contents and the file extension which identifies the file type
- ❖ The file name should be associated with the content
- ❖ Special characters such as “ / ” , “ & “ must be avoided in file names

(c) Describe the following Path: C:\Windows\system32\subICT.doc

The file subICT.doc is in the system32 subfolder which is in windows folder found on the hard disk, C,

11(a) A computer file comprises a file name and a file extension separated by a dot. Explain the function of the file extension

- ❖ It identifies the type of file for example files with extensions .exe are executable
- ❖ It helps in categorizing the files for easy retrieval for example during search of files, the Operating system can first isolate files of a particular extension then search among them and this makes the search process faster

(b) Give four examples of file extensions and the file types they represent

File Extension

File type

Example

- ❖ Doc Ms word SubICT.doc
- ❖ Bat Batch file Autoexe.bat
- ❖ Exe Executable file Kav.exe
- ❖ Txt Text file Kensfile.txt
- ❖ XlsMsExcel Security.xls

12(a) Distinguish between a surge protector and the UPS

- ❖ A Surge protector only protects the computer from high voltage while a UPS protects the computer from sudden power loss

(b) Mention four ways of preventing dust accumulation in a computer laboratory, on computer systems and equipment's

- ❖ Remove shoes when entering the Lab
- ❖ Cover the computers with plastic dust covers
- ❖ Fit heating, ventilation and Air conditioner systems
- ❖ Put a door mat at the door for dusting off
- ❖ Fit a carpet on the floor and vacuum clean it regularly
- ❖ Put curtains on the windows
- ❖ Vacuum clean the laboratory often and dust blow the equipment

13(a) Explain the importance of each of these as used in the computer laboratory

i. Gaseous fire extinguisher: this is suitable for extinguishing or control of small fires often in emergency situations

ii. CCTV: This is used for surveillance of the inside and the outside of the Lab from security threats

(b) State and explain three behaviors that must be avoided while in the computer laboratory

- ❖ No eating and drinking: food particles may attract flies. Spilled drinks may cause rusting and short circuiting
- ❖ attempting to fix computer faults without authorization: This is because it could easily lead to further damage, electrocution and short circuiting
- ❖ Smoking: Smoking is a nuisance to other computer users. It also increases the risk of fire outbreaks in the Lab

14(a) State the function of each of the following parts in the computer

(I) PCI slot : This allows additional hardware to be connected

(II) Mother board : This is used for mounting the computer components

(iii) VGA port : This is an external port used to connect the system unit to display unit

(b) Explain the specifications below

(i) 3GHZ Processor: the processing speed is 3 gigahertz

(ii) 3.00GB RAM: The Random Access Memory has a capacity of 3 Gigabytes

(iii) 320GB HDD: The hard disk has a capacity of 320 gigabytes

(iv) 17" LCD Monitor : The monitor is 17" inch in size and has a liquid crystal display

15(a) List any four factors that a buyer should consider before purchasing any computer hardware

- ❖ Portability
- ❖ User needs

- ❖ Upgradeability and compatibility
- ❖ Processor speed and type
- ❖ Warranty given and its scope
- ❖ Multimedia capability

16(a) What do you understand by the term “removable storage”?

- ❖ This is a kind of storage device which can be plugged into the computer in case of the need to use the device with the computer and later be unplugged when done

(b) A student wishes to store data on an optical storage medium. List two optical media and give one advantage and one disadvantage of using optical media when compared with fixed hard discs.

- ❖ Optical medium 1
- ❖ CD-R or CD-ROM
- ❖ Optical medium 2
- ❖ DVD-R or DVD-ROM

Advantage

- ❖ It is a portable storage device
- ❖ It is cheap to buy

Disadvantage

- ❖ It is prone to scratches which can easily lead to its damage

17(a) What is meant by the term Computer software?

- ❖ This is a collection of computer programs and related data that provides instructions to the computer hardware

(b) System software may be categorized into Operating systems, Utility programs and programming languages. Briefly explain, giving an example to each category

(i) Operating systems: this is a set of programs containing instructions that coordinate all the activities among computer hardware devices example: DOS, Windows, Linux, etc

(ii) Utility programs: this is system software designed to help analyse, configure, optimize or maintain a computer

Example: Antivirus, Disk cleaners, screen savers, Memory testers, etc

(iii) Programming language: this is an artificial language designed to communicate instructions to a machine particularly a computer example: BASIC, COBOL, FORTRAN, Pascal

18(a) What is meant by application software?

These are programs which are designed to help a user to perform a specific task

(b) Name any two application software used in the following fields

(i) Spreadsheets: MS excel, VisiCalc, Lotus 1-2-3, Jazz, etc.

(ii) Data bases:Microsoft Access, Oracle, My SQL, Visual Basic

(iii) Word processors:MS word, AbiWord, Lyx, La Tex editor

(vi) Presentations:Ms Power point, Lotus freelance, Harvard graphics

(v) Publications:Ms Publisher, Corel draw, Adobe illustrator

19(a) Define the term Data communication

- ❖ This refers to the electronic transmission of information that has been encoded digitally from source to destination

(b) Outline the elements of data communication

- ❖ Sender
- ❖ Receiver
- ❖ Messages
- ❖ Transmission medium
- ❖ Protocol
- ❖ Communication device

(c) With examples Distinguish between Physical and Wireless transmission medium

- ❖ Physical transmission medium provides a physical path usually (restricted path) along which the signals are propagated e.g. Twisted pair cables, coaxial cables, optical fibers while Wireless transmission medium is used to transmit data signals from one point to another without physical connections e.g. Satellites, Blue tooth, infra-red, Wi-Fi(Wireless Fidelity)

19(a) What is a computer network?

- ❖ This is a collection of computers and other hardware linked together using transmission medium for purpose of resource sharing and communication

(b) Give the functions of the following in networking

i. Hub: it connects computers on a net work and transmits signals from one terminal to another

ii. Network Interface card (NIC): this hardware physically allows computers to access a networking medium

iii. Router: this is a device that connects multiple computers and forwards data packets from one point to another on the network. It also connects multiple computers to a single DSL line for internet access.

20(a) Define the following terms

i. **MAN:** Metropolitan Area Network (MAN) refers to the inter connection within geographical limits of a city or town. MAN is usually owned by a single company with many branches within the MAN

ii. **WAN:** Wide Area Network(WAN) is used to interconnect a number of a widely dispersed computers in various cities of a country or different countries

(b) Distinguish between Peer to peer and client server networks

- ❖ A peer to peer network allows any user to share files & resources with any other user and does not require a dedicated server. While In A client server Network files are stored on a centralized high speed file server PC that is made available to all Client PCs

21(a) State three causes of computer data loss

- ❖ Power fluctuations
- ❖ Computer virus infections
- ❖ Accidental deletion of files
- ❖ Improper shutting down of computers
- ❖ Disk crushing

(b) State three precautions taken to protect data loss in a computer

- ❖ Install an antivirus software and update it frequently
- ❖ Connect the computer to a power backup such as UPS
- ❖ Shut down the computer using the correct procedure always
- ❖ Avoid careless handling and storage of disk

22. a) What is a device driver?

- ❖ Is a small program that tells the operating system how to communicate with a device?

b) Give two devices that may require the installation of a device driver

- ❖ *Keyboard*
- ❖ *Mouse*
- ❖ *Scanner*
- ❖ *Digital camera*
- ❖ *Flash disk*

c) Name two kinds of information normally requested to log on to a multiuser operating system

- ❖ Username
- ❖ Password

d) Name four functions that are normally carried out by an operating system

- ❖ Starting up the computer
- ❖ Managing memory

- ❖ Managing programs
- ❖ Managing security
- ❖ Monitoring print jobs

23. a) (i) What is a primary key?

- ❖ An attribute selected to act as the unique identifier for each occurrence of an entity or relationship.
- ❖ Is a candidate key to uniquely identify each row in a table.
- ❖ A set of one or more columns in a database table whose values, in combination, are required to be unique within the table.

ii) Give two examples of database management programs

- ❖ Microsoft Access
- ❖ dBase
- ❖ FileMaker Pro
- ❖ Paradox
- ❖ Lotus Approach

(ii) Mention four merits of using electronic databases

- ❖ **Data Integrity** – By having one location for the data, it is more convenient and easier to make sure that the stored data is correct. A database can also be set up to verify that input data is correct for the type of field.
- ❖ **Data sharing** – Computerized databases can be easier to share between a large group of people over vast locations. For example, the counters at the banks all share the same customer accounts information.
- ❖ **Data security** – The computerized database can be shared with everyone, and only allow authorized people to make changes or look at confidential reports in the database.
- ❖ **Editing / keeping the Data Current** – By making changes in a single location all available data is kept up to date. Instead of having to change attendance records in different files (class roll, duty roll, etc) changing it in one location means all information is current.
- ❖ **Tables** – Tables can be created to store data. When new relevant information needs to be included in a database tables can be easily modified to include new files.
- ❖ **Queries** – Queries can be used to create custom views of data. Custom views allow you to limit the data to only those items you want to see. You can even sort the information so it is easier for you to find items.
- ❖ **Reports** can be generated to display the information in a prettier format.

24. a) (i) What is a browser?

❖ A computer program for viewing web pages.

Or

❖ Is a software application which enables a user to display and interact with text, images,

Or

- A program (software) that is used to look at various kinds of Internet resources.

(ii) Give two examples of browsers

- ❖ Opera
- ❖ Google Chrome
- ❖ Mozilla Firefox
- ❖ Internet Explorer
- ❖ Safari
- ❖ Netscape
- ❖ K-Meleon
- ❖ SeaMonkey
- ❖ Galeon
- ❖ Konqueror
- ❖ Camino
- ❖ iCab
- ❖ Mozilla Suite
- ❖ Sunrise

Mention **three** advantages of using email as a means of communication (3 marks)

- ***You can communicate quickly with anyone on the Internet.*** Email usually reaches its destination in a matter of minutes or seconds.
- ***You can send letters, notes, files, data, or reports all using the same techniques.*** Once you learn how to use your email program, everything is sent the same way.
- ***You don't have to worry about interrupting someone when you send email.*** The email is sent and delivered by one computer system communicating with the Internet. Although it is put into someone's mailbox, the recipient isn't interrupted by the arrival of email.
- ***You can deal with your email at a convenient time.*** You don't have to be interrupted when email arrives, and you can read it or work with it when you have the time. Also, you can send it at a convenient time. It doesn't have to be written or sent at a time when you know the recipient will be available. This is what we mean by the term **asynchronous communication**.
- ***You don't have to be shy about using email to communicate with anyone.*** Email isn't anonymous-each message carries the return address of the sender-but you can write to anyone with an Internet address. All the messages appear the same to the person who gets the email. The messages are generally judged on what's in them, not where they're from.
- ***The cost to you for email has nothing to do with distance, and in many cases, the cost doesn't depend on the size of the message.*** Most Internet access charges are based on the number of hours per month you access the Internet, or you pay a flat monthly fee.

c) Outline **three** limitations of using email as means of communication (3 marks)

- ***Email isn't necessarily private.*** Since messages are passed from one system to another, and sometimes through several systems or networks, there are many opportunities for someone to intercept or read email. Many types of computer systems have protections built in to stop users from reading others' email, but it's still possible for a system administrator to read the email on a system or for someone to bypass the security of a computer system.
- ***Some email systems can send or receive text files only.*** Even though you can send and receive images, programs, files produced by word processing programs, or multimedia messages, some folks may not be able to properly view your message.
- ***It's possible to forge email.*** This is not common, but it is possible to forge the address of the sender. You may want to take steps to confirm the source of some email you receive.
- ***It's difficult to express emotion using email.*** The recipient doesn't have the benefit of seeing your facial expressions or hearing your voice. You have to be careful with humor or sarcasm, since it's easy for someone to take your message the wrong way.

- ***You can receive too much or unwanted email.*** You can receive "junk" email in the same way you receive other types of junk mail. On the Internet, junk mail is called **spam**. You may have to take active steps to delete the email you receive and try to stop it from being sent to you in the first place
- ***You may not know about the person with whom you are communicating.*** The communication is often all in text and it's possible for us to get an incorrect impression of the person sending us email. Also, some people misrepresent themselves.

25. a)(i) Differentiate between a **cold boot** and a **warm boot**

A cold boot is the process of turning on the computer after it has been powered off completely while a warm boot is the process of restarting, or resetting, a computer that is already turned on.

(ii) Name **two** kinds of information stored in the CMOS of a personal computer

- ***Amount of memory installed***
- ***Current date and time***
- ***Type of disk drives***
- ***Type of keyboard, mouse and monitor***

b) Give **two** examples of secondary storage devices

- ***Floppy disk drive***
- ***Hard disk drive***
- ***Compact Disk drive***
- ***Tape drive***

c) Give **four** examples of secondary storage media

- ***Floppy disk***
- ***Hard disk***
- ***Compact Disk***
- ***Tape***
- ***Flash disk***

26. a) Name any **four** output devices you

- ***Plotter***

- **Monitor/Visual display unit**
- **Projector**
- **Smart Board**
- **Speakers**
- **Headphones**

b) Suggest **one** suitable input device for each of the following tasks

1. To enter instructions in a CLI – **Keyboard**
2. To move the pointer in a GUI – **Mouse**
3. To input text/graphics from hard copies into electronic format – **Scanner**
4. To read the barcodes of products in a supermarket – **Barcode reader**
5. To record human voice into the computer – **Microphone**
6. To control a video game – **Joystick/game controller**

27. a) What is a **computer network**?

- ***Two or more computers that are connected together to share resources such as hardware, data, and software.***

b) Mention **three** network types you know

- **Local Area Network (LAN)** – *Connects network devices over a relatively short distance – building, school or home.*
- **Wide Area Network (WAN)** – *Spans a large physical distance. The Internet is the largest WAN, spanning the Earth. In short, it is a geographically-dispersed collection of LANs.*
- **Metropolitan Area Network (MAN)** – *A network spanning a physical area larger than a LAN but smaller than a WAN, such as a city. A MAN is typically owned by a single entity such as a government body or large corporation.*
- **Personal Area Network (PAN)** – *A network used for communication among computer devices (including telephones and PDAs) close to one person.*
- **Storage Area Network, System Area Network, or Server Area Network, or sometimes Small Area Network (SAN)** – *Links high-performance computers with high-speed connections in a cluster configuration.*

- **Wireless Local Area Network (WLAN)** – A LAN based on WiFi wireless network technology. WiFi (“Wireless Fidelity”) technology is one that uses radio waves to provide wireless high-speed Internet and network connections.
- **Campus Area Network, Controller Area Network, or Cluster Area Network (CAN)** – A network spanning multiple LANs but smaller than a MAN, such as on a university or local business campus.

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c) List any **two** network media

- **Unshielded Twisted Pair cable**
- **Shielded Twisted Pair cable**
- **Coaxial cable**
- **Fibre Optic cable**

d) Write the following in full:

1 **IRC- Internet Relay Chat**

2 **FTP - File Transfer Protocol**

3 **NIC- Network Interface Card**

28. a) Explain any **five** features of a spreadsheet application.

- **Insert text:** Allows you to insert text anywhere in the spreadsheet.
- **Delete text:** Allows you to erase characters, words, charts, or worksheets as easily as you can cross them out on paper.
- **Cut and Paste:** Allows you to remove (cut) a section of text from one place in a spreadsheet and insert (paste) it somewhere else.
- **Copy:** Allows you to duplicate a section of text.
- **Page layout:** Allows you to define various page sizes and margins.
- **Search and Replace:** Allows you to direct the spreadsheet to search for a particular word or phrase. You can also direct the spreadsheet application to replace one group of characters with another everywhere that the first group appears.
- **Headers, Footers, & Page Numbering:** Allows you to specify customized headers and footers that the spreadsheet file will put at the top and bottom of every worksheet. The

spreadsheet automatically keeps track of page numbers so that the correct number appears on each page.

- **Merges:** *Allows you to merge text from one file into another file. This is particularly useful for generating many files that have the same format but different data.*
- **Spell Checker:** *A utility that allows you to check the spelling of words in a spreadsheet file.*
- **Print:** *Allows you to send a spreadsheet file to a printer to get a hardcopy or many hardcopies as you would like.*
- **Thesaurus:** *A built-in thesaurus that allows you to search for synonyms (words with similar meaning) and antonyms ('opposites') without leaving the word processor.*
- **Graphics:** *The spreadsheet application permits the addition of various types of graphics, such as bar charts, line charts, clip art, and photographs.*

b) Briefly explain **five** advantages of using Microsoft Excel.

- ***The ability to reuse the data as many times as required***
- ***The ability to automatically recalculate the spreadsheet***
- ***The ability to share the data from one application to another***
- ***The ability to be able to apply different types of fonts and cell formatting to your spreadsheet***
- ***The ability to be able to include drawing objects such as photos, lines, Excel art, cartoons, moving and text and even video***
- ***The ability to spell check the whole spreadsheet in one go or at once***
- ***The ability to add up and apply different formulas to your spreadsheet***
- ***The ability to carryout What If scenarios in "real time"***

29. Explain any **ten** end-user application programs available in the market today.

- **Word Processor** – *Used for producing text-based documents like letters, notes, reports, memos, etc.*
- **Spreadsheet software** - *Used to create reports, financial data, etc that require the calculation of numbers, including the creating of graphs.*
- **Accounting software** – *Used for preparing payrolls, capturing cash inflows and outflows, generating financial statements as well as balance sheets, etc.*

- **Database management software** - Used to collect data that will be used for sorting and querying, including reports to reflect the selected data/information.
- **Presentation software** - This application will be ideal for making presentations and slide shows that can enhance a speech presentation.
- **Computer aided design (CAD) software** - Used by engineers and architects to produce plans for houses, bridges, car parts, roads, etc.
- **Desktop publishing software** - This application specializes in creating cards, flyers, calendars, brochures, etc which can be useful for projects.
- **Graphics software** – Used by graphic designers to design book covers, cartoons etc.
- **Web authoring software** – Used by webmasters for building websites.
- **Audio and video editing software** – Used by movie editors to create and edit movies with various transitions and animations.
- **Communications software** – Can be used for taking cyber classes, sending and receiving emails, e.g. Internet Explorer.
- **File Recovery software** – A unique application used for recovering accidentally or just deleted files from the computer; an example of this kind of software is Recover My Files.

30. a) Explain **four** services of the Internet that you know.

- **Telnet** – One of the amazing features of the Internet that lets you use the resources of another computer in another part of the world. This is done by remotely logging to the distant computer which is called the host
- **Email** – It allows the transfer of messages, documents, and pictures among others, across the Internet.
- **Mailing list** – This is based on the email protocol. As an electronic mailing list it is very convenient when somebody wants to send a message or newsletter, for example, to many people in one go.
- **Internet Relay Chat (IRC)** –Allows people to converse in real time people ay actually see you type your questions and responses. Chats are also organized in chat channels and chat rooms according to different factors.
- **File Transfer Protocol** – The standard method for transferring files, whether downloading or uploading, to and from your computer with another computer on the Internet.

- **Newsgroups** – *This is an Internet equivalent of a discussion group or an electronic bulletin board there are newsgroups for every conceivable topic and more, from educational technology to software engineering.*
- **World Wide Web** – *As it is the most exciting feature that has revolutionized the Internet, people use this service to surf or browse for information.*

b) Give your arguments in favor and against the impact of computers in Uganda.

Arguments in favor

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Arguments against