K M C

O LEVEL

COMPUTER STUDIES

Paper 1

Oct./Nov.2000

2½ hours

SECTION A (20 marks)

1. John Napier invented calculating rods called.
A. Calculators
B. Napier's Bones
C. Arithmetic machine
D. Napier's
2. Which of these generations in the evolutions of computers is characterized by
the use of very large integrated circuits?
A. First generation
B. Second generation
C. Third generation
D. Fourth generation
3. Which of these is the easiest to carry from one place to another?
A. Super computer
B. Main frame
C. Mini computer
D. Laptop
4. The ability of computers to handle more than one task is

called
A. Mobility
B. Veracity
C. Analog
D. Multiple
5. Tangible components of a computer are called
A. Equipment
B. Hardware
C. Software
D. Live ware
6. How many bits are found in the word MAD?
A. 3
B. 8
C. 12
D. 24

7. Which of the following is a group of operating systems?
A. DOS, windows NT AND UNIX
B. Lotus, windows 98 and Excel
C. Spreadsheet, Linux and DOS
D. Windows NT, DOS and word

8. Formatting a disk does one of the following
A. Makes the letters bold
B. Changes the font type
C. Erases the contents
D. Increases the indent

9. Which of these are done in word processing?
A. Writing letters, formatting disks and processing graphics
B. Creating, saving and printing of documents
C. Printing of documents, information sharing and processing

work
D. Documenting, processing and sending information.

10. Which of the following utilities can provide words that have the same
meaning?
A. Spellchecker
B. Auto correct
C. Thesaurus
D. Grammar checker

11. In spreadsheets, rows and columns intersect to form
A. Cells
B. Work area
C. Cell pointer
D. Cell areas

12. In spreadsheets, Row 6 and column D form a cell reference
A. 6:D
B. D:6
C. 6:D
D. D:6

13. The electronic transfer of text message from one geographical location to
another using computer is referred to as;

A. Internet communication
B. Electronic mail
C. Downloading
D. Uploading

14. Which one of the following statements, best explains the term “Internet”?
A. Email
B. International connections
C. Global connection of computers
D. Globalization

15. Which one of the following is a primary database structure ?
A. Form
B. Query
C. Report
D. Table

16. What is the most appropriate data type for a photograph in a database ?
A. OLE objects
B. Texts
C. Hyperlink
D. Field

17. Which one of the following software displays slides as an output ?
A. Internet explorer
B. Word processing
C. Presentation
D. Spreadsheet

18. What does a slide master do?
A. It controls sound and transition
B. It controls animation
C. It controls graphic and movies

D. It controls certain text characteristics and background.

19. Which one of the following can be used in web publishing?
A. Slide master
B. E-mail
C. Hyperlinks
D. LAN

20. As computer technology advances,
A. The size of computers also advances
B. The size of computers reduces
C. The size of computers remains normal
D. The cost of computers will be high

SECTION B: (60 marks)
Answer not more than four questions in this section.

21. a) RAM and ROM are two different types of memory found in a computer.

i) What do the abbreviation ROM and RAM stand for?
(02 marks)
……
……
……

ii) State two differences between ROM and RAM
(02 marks)
……
……
……

iii) Where is each one of this applied?
(02 marks)
……
……

(b) Compact Disc-ROM devices are now used to store games, state three
advantages and one disadvantage of supplying games on the above
mentioned devices.
(04 marks)
……
……
……

(c) (i) State four precautions which should be taken to prevent viruses from
Affecting computers.
(04 marks)
……
……
……

(ii) Explain the term computer virus
(01 mark)
……
……

22. Staff in a firm of solicitors uses typewriters for all letters and forms. The firm
decides to introduce word processors to make the office work more

efficient.

(a) State the reasons why this change may worry some office staff. (03 marks)
(i)……
……
(ii)……
….....
(iii)……
……

(b) After sometime, most of the staff finds out that the word processors make their jobs easier. Mention three reasons why their jobs are made easier. (03 marks)

(i)……
……
(ii)…….....
.....
(iii)…..……
……

(c) What word processor function, would you use to;
(04 marks)
(i) Make headings more obvious
……
……
(ii) Type an address at the right of a document.
……
……

iii) Produce a draft document with space between the lines.
……
……

(iii) To make changes to a document in the following ways; italicizing, changing
font colour and underlining.
……
……

(d)……is a word processor that uses ONLY a key in its operation? (01 mark)

(e) What is the difference between lower case and upper case? (02 marks)
……
……
……

(f) Explain what is meant by the term "Save As"? (02 marks)
……
……
……

23. The spreadsheet below shows **"THE KATUNKUMA COLLEGE SHOP SALES.**

1. A	B	C	D	E	F	G
2.	THE KATUNKUMA COLLEGE SHOP SALES					

3. Day	I.C	Sales	Costs	Income	Profit	Profit%
4. Monday	William	45	$15.50	$15.50	$4.20	$27.10
5. Tuesday	Katherine	53	$18.63	$18.63	$5.85	$31.24
6.Wednesday	Jennifer	37	$11.80	$11.83	$3.97	$31.24
7. Thursday	Christopher		$21.20	$21.20	$5.45	$34.58
8. Friday	Joanna	64	$19.25	$19.25	$5.65	$25.71
9.	**Total**	271	$86.06	$86.06	$25.09	$29.35
10.	**Averages**	54.1	$17.21	$17.21	$5.02	$29.15

THE SHOP sales Spreadsheet showing the result of changing a charity percentage to 25%.

(a) State the entry for the cell below G5
(01 mark)

……
……
……

(b) (i) What is the formula used to calculate the total Cost?
(01 mark)

……
……
……

(ii) Find the entry in C8
(01 mark)

……

……
……

(c) If the range of cells from A4 to A8 is A4:A8, give the rages for (02 marks)

……
……

(i) The four cells below G7
(02 marks)

……
……
……

(ii) The four cells to the left of G7
(02 marks)

……
……

(iii) What else can you put in spreadsheets cells besides text and numbers?

(01 mark)

……
……
……

(d) Name three different operations, which you would expect in a spreadsheet cell.

(03 marks)

(i)……
……

(ii)……
……
(iii)……
……

(e) Name three different types of number format you would expect in a spreadsheet cell

(03marks)

(i)……
……
(ii)……
….....
(iii)……
……

24.(a) what is meant by the following terms
(i) E –Mail
(02 marks)
……
……
……
(b) Explain briefly how the internet can be used as a learning tool. (03 marks)
……
……
……

Mention:
(i) Four advantages of the internet

(04 marks)

……
……

ii) Four disadvantages of the internet
(04 marks)

……
……
……
……
……

25. (a) List five examples of data types that can be in a record
(05 marks)

……
……
……
……
……

(b) Outline the function of each of the data types listed in (a) above (05 marks)

……
……
……

(c) Difference between a field and an attribute, give an example of each

(02 marks)

……
……
……

(d) Outline the importance of a primary key in a database.
(01 mark)
……
……
……

26. (a) What is meant by the following terms:
(04 marks)
(i) HTML
……
……
……

(ii) Website
……
……
……

(b) State three advantages of web publishing.
(03 marks)
……
……
……

(c) Describe how a web page is a source of information
(04 marks)
……
……
……

(d) What is the difference between WWW and Web page? (04 marks)

……
……
……

SECTION C: (20 marks)

Answer only one question in this section. Write your answer in the booklet provided.

27. You are given an assignment to create, design, and present a polio awareness presentation. How do you carry out the above? (20 marks)

28. "Computers have changed today's ways of life". Discuss (20 marks)

29. "Computers are required both as a tool and as an occupation" Discuss

(20 marks)

SOLUTIONS TO P000/1-2000.

SECTION A:

1. B	**2. D**	**3. D**	**4. D**	**5. B**
6. D	**7. A**	**8. C**	**9. B**	**10. C**

11. A	**12. B**	**13. B**	**14. C**	**15. D**
16. A	**17. C**	**18. D**	**19. C**	**20. B**

SECTION: B

21. (a) RAM ad ROM are two different types of memory found in the computer.

(i) What do the abbreviation ROM and RAM stand for?

- **ROM-** Read Only Memory
- **RAM-** Random Access Memory

(ii) State two differences between ROM and RAM.

	RAM		**ROM**
1	RAM is read and write	1	ROM is read only
2	RAM is volatile	2	ROM is non volatile
3	RAM can be increased	3	ROM is normally not increased
4	RAM is temporary	4	ROM is permanent

(iii) Where is each one of this applied?

-ROM is used to store software and configurations used in booting a computer.

-RAM is used to store programs apparently used by the user when the computer is working.

(b) (i) Compact Disc – ROM devices are now used to store games.

(ii) State three advantages and one disadvantage of supplying games on the above mentioned device.

Advantages:

- A compact disc is more portable than other storage devices.
- The games are permanent (Rom can't be rubbed off)
- Can be stored for a long time
- A CD-ROM, however, can hold up to 650 MB of data, instructions, and information.
- A CD-ROM, however, can contain text, graphics, video, and sound.
- Most manufacturers guarantee that a properly cared for compact disc will last up to 50 years.

Disadvantages:

- Can be attacked by a virus
- Can be scratched and hence a distortion.
- Some kinds of compact discs are read only (CD-ROM and DVD-ROM).
- The average access time of a compact disc is faster than that of a hard disk.
- One problem with CD-RW is that they can not be read by all CD-ROM drives.

(c) (i) State four precautions which should be taken to prevent viruses from affecting computers.

- Ensure your computer has the latest anti virus
- software installed and that the virus definitions are up to date.
- Ensure that your anti virus program is actually switched on.
- When you use floppy discs or CD ROMs from friends make sure you first scan them with your anti virus program.
- Ensure that the e-mail is from a trusted source before opening or executing any e-mail attachment.

- Never start up a computer with a floppy disk in the floppy drive.

- Scan all floppy disks and files for possible virus infection before opening them.

(ii) Explain the term computer virus.
-A Computer virus is a program designed to alter the way your computer functions, without your knowledge or consent.

22. Staff in a firm of solicitors uses type writers for all letters and forms. The firm decides to introduce word processors to make the office work more efficient.

(a) State three reasons why this change may worry some office staff.

- It could cause unemployment to them

- They could be computer illiterate
- The maintenance costs are high

(b) After sometime, most of the staff finds out that the word processor make their job easier. Mention three reasons why their jobs are made easier.

- It makes work faster.
- It can store work for future use.
- It can print work of better quality.

(c) What word processor function, would you use to:
-Make headings more obvious? **Bold**
-Type an address at the right of a document? **Right align**
-Produce a draft document with space between the lines? **Line spacing**
-To make changes to a document in the following ways; italising, changing font colour and underlining? **Formatting**
(i) DOS Editor, Word perfect (version should be indicated)

Is a word processor that uses ONLY a key board in its operations.

(ii) What is the difference between **l*ower case*** and ***Uppercase?***

- ***Upper case*** is composed of capital letters
- ***Lowercase*** is composed of small letters

(iii) Explain what is meant by the term "Save As"?

This is a document used to effect the process of saving documents from the

memory storage to a permanent storage or from one drive to another and

also when changing a name of a document to another.

23. The spreadsheet below shows;
"THE KATUNKUMA COLLEGESHOP SALES.

1. A	B	C	D	E	F	G
2.	THE KATUNKUMA COLLEGE SHOP SALES					
3. Day	I.C	Sales	Costs	Income	Profit	Profit%
4. Monday	William	45	$15.50	$15.50	$4.20	$27.10
5. Tuesday	Katherine	53	$18.63	$18.63	$5.85	$31.24
6.Wednesday	Jennifer	37	$11.80	$11.83	$3.97	$31.24
7. Thursday	Christopher		$21.20	$21.20	$5.45	$34.58
8. Friday	Joanna	64	$19.25	$19.25	$5.65	$25.71
9.	**Total**	271	$86.06	$86.06	$25.09	$29.35
10.	**Averages**	54.1	$17.21	$17.21	$5.02	$29.15

THE SHOP sales Spreadsheet showing the result of changing a charity percentage to 25%

(a) State the entry for the cell below G5
It is $31.24

(b) (i) What is the formula used to calculate the total cost
=SUM(D5:D9)

(ii) Find the entry in C7 =SUM(C4:C8)-(C4+C5+C6+C8)

(c) If the range of cells from A4:A8 is A4:A8, given the

ranges for:

i) The four cells below G7
G7:G11
(ii) The four cells to the left of G7
G7:K7

(iii) What else can you put in spreadsheets cells besides text and numbers?
-Formulas, Alpha numeric.

(d) Name three different operations, which you would expect in a spreadsheet cell.

Basic mathematical operations used in spread sheets include:

Symbol	description	example
()	Parentheses	=B3*(B1+C6)
*	multiplication	=B2*C6
/	division	=(B3/C9
+	addition	=(B3+C5)
-	subtraction	= (C3-C6)
%	Percentage	=C5*75%
^	exponential	= B3^5

(e) Name three different types of label or value format you would expect in a spreadsheet cell.

-General
-Number
-Currency
-Date
-Time
-Text
-Percentage
-Fraction
- Accounting
-Custom
- Special

24. (a) What is meant by the following terms?

(i) E-mail- This is the transfer of electronic messages from one geographical location to another using computers and related computerized devices.

(ii) Internet- This is the global connection of computers where by access to information world wide is enhanced.

(b) Explain briefly how the internet can be used as a learning tool computer-based training. This includes;

- **Computer-assisted instructions (CAI),** so that teachers can use computers and other IT equipment to present teaching materials in a more interesting way.
- **Computer-assisted Learning (CAL),** so that students can use computers and appropriate software to learn at their own pace
- **Computer-assisted assessment (CAA),** which may reduce the time and labor to mark the answer scripts.
- **Distance learning** through computer-based training and Web-based training.
- Simulations of experiments or real-life situations that may be

hazardous.

- Electronic library system for searching, borrowing, and returning books.
- The **school Administration and Management System (SAMS)** for keeping records of students and producing report cards or other related documents.
- Edutainment, which is a type of educational software that combines education with entertainment.

Advantages of using IT in learning and teaching include;

- CAI and CAL packages that usually contain multimedia effects make learning more interesting and interactive.
- Students can learn by themselves when teacher is not available.
- Students can learn and proceed at their own pace.
- Students can usually get their results or feedback immediately after they have answered the question or taken an action.
- There are rich educational resources on CD-ROMs and Internet.
- Teachers can present subject matter and explain subtract concepts more clearly with multimedia.
- Teachers can show experiments that are difficult to perform or dangerous in nature through simulations can be given to students in areas where the teacher may not be qualified.

(c) Mention:

Four advantages of the internet

- Enhancement of communication.
- Access to information (World Wide)
- Shop for goods and services

- Provide information to the public

(ii) Four disadvantages of internet
- There is no privacy for information
- Information control is limited
- Illegal material is in plenty
- Piracy.

25. (a) List five examples of data types that can be used in a record.

- Text
- Memo
- Number
- Date/time
- Currency
- Auto number
- Logical data types (Yes/No, True/False
- OLE Object
- Hyperlink
- Lookup wizard

(b) Outline the function of each of the data types listed in (a) above;
-Text type– Which may hold letters, numbers, or special characters.
-Memo type- Which may contain text of any type or length.
-Numeric type– Which may hold numbers only.
-Data type– Which can hold month, day, and information.
-Currency type– Which may hold dollar and cents amounts.
-Boolean type- Which may hold values that is either true or false.

-OLE Object-OLE (Object Linking and Embedding) objects, graphics, or other binary data. Field capacity is up to a gigabyte (GB) or limited by available disk space.

-Lookup wizard – When the value that you need exists in another table or from a list of static values, you use the lookup wizard to help you establish a link to the table or to define the combo box that will display the list of values on a form or report.

-Validation is the process of comparing the data entered with a set of predefined rules or values to check if the data is acceptable.

Manipulation of data in a database includes.

(c) Differentiate between a field and an attribute, give an example of each.

-A Field is a unit of data yet on an attribute is a group of fields or columns in a table.

Examples:

Field. A field is a unit of data consisting of one or more characters.

An example of a field is ***your name address***. Or your social security number.

Attribute.

In a relation database, a table is called relation (not to be confused with a relationship)

A row is called a tuple (which rhymes with couple),

And;

A column is called an attribute. Some relationship DBMSs use these terms; others use the terms table, row, and column; and still others use file (for relation), record (for tuple), and field (for attribute)

(d) Out line the importance of a primary key in a database.
A primary key is used to ensure that there are no duplicate fields in a table**.**
It avoids redundancy in tables since it can be represented as a foreign key in other tables.

2.6 (a) What is meant by the following terms:

(i) HTML – Hyper Text mark up language is a language (text codes**)**
(ii) Website – Is an electronic page that has links with other pages and contains information and data or
Is a web server in which or where information of a particular organization or company or subject is stored.

(b) State three advantages of web publishing.
- Easy access to information.
- Electronic Commerce (E-Commerce)
- Easy communication to masses

(c) Describe how a web page is a source of information.
- It is a source of information in terms of research getting information on the internet.
- Education, (on line connectivity)
- Advertisement
- Entertainment

(d) What is the difference between WWW and Web page ?
-The internet is a World Wide collection of networks linked together.

It is the largest wide area network (WAN) in the world.
The World Wide Web (WWW), also called the Web, consists world wide collection of electronic documents.
Each of these documents on the web is called a ***Web page.***

Web page is a file of information stored on a web server.
Website – Is an electronic page that has links with other pages and contains information, data or;
Is a web server in which or where information of a particular organization or
company or subject is stored.

SECTION C: (20 marks)

Answer only one question in this section:

27. You are given an assignment to create, design, and present a polio
Awareness presentation. How do you carry out the above?
-Approach:
❖ **Introduction** – Define the presentation of software.
Name the presentation software being employed.
(Power point)
❖ **Body:**
-Mention how one gets to a new slide
-Set a design out lay of the slide one.
-Describe how you introduce the topic to be handled
-In (check on the creativity) slide one.
-(Elaborating on)
-Arrange format and (preferably a paragraph). Editing, Graphics.

-Mention how one insets a second slide
-Follow the guidelines as laid out in section A
-Follow till the fifth slide
-Mention the looping and transition and transition of slide and the timing.
-Presenting it to the use of a projector, a computer and a screen.

28. "Computers have changed today's ways of life" Discuss
(These are points for you to build your argument in answering the question)

❖ **Definition of Computer.**
(positive effects)

- Improved communication facilities (e-mail virtual education institutions)
- Improved speed in execution of operation of data.
- Accuracy and reliability (writing, editing, and manipulation of texts)
- Recreation (entertainment industry)
- Employment opportunities have increased.
- Large data storage and analysis and easy retrieval. (Improved file management)
- More information.
- Stronger and more reliable (Defense of security)
- Improved research work.
- Information of industry (less production costs hence less costs of products to consumers)
- Each in trading across continents. (trading on a PC).

Negative effects;

- Less of sight due to over use.

- Unemployment.
- Users have been exposed to ill material (moral degeneration)
- Loss of information due to break down of systems.
- High rate of forgery.
- Expenses involved – maintenance

29. "Computers are required both as a tool and an occupation" Discuss.

Issues resulting from use of computers.
Today, there are a number of issues which have risen as a result of use of computers as a tool. These issues include breakthroughs in fields like health care, education, communication, research, commerce, arts entertainment and transport, automated production, employment, and other various cultural effects health issues,

Break-through.

-Due to development in information and communication technology, there are lots of discoveries which have been made in almost all the spheres of human life: In health care, education, communication, research, commerce, arts, entertainment and transport.

(i) Science

-In our professional lives, a computer is an integral tool in performance of many jobs. The computer application in science has over the years taken much emphasis among the computer users. The years taken much emphasis among the computer users. The computers itself is scientific in nature, and so are all

its functions. Scientists have used computers in manufacture of different tools and equipments. They have also used in verifying scientific findings, theories and laws. In science, computers have been used in manufacture of heavy machines like planes, automobiles, etc.

(ii) Healthcare

There has been a tremendous improvement in health care in the recent past due to development in information and communication technology. There are a number of breakthroughs which have been made; they include improved surgery using laser as in brain surgery and heart surgery. Crones can also be made by computerized method that eliminates the need for impressions and plaster models. This method is called computer-aided design and computer-aided manufacturing (CAD/CAM). The dentist uses an optical probe system to record electronic images of the tooth. This information is entered into a computer, which designs an electronic model of the tooth. The design is then transferred through the computer to the head of a cutting tool which prepares the crown to exactly fit the tooth.

(iii) Communication

Many people use personal computers or computer terminals to contact other computer users or to obtain information.
Using a computer to communicate over the telephone lines requires a device called a modem and special communications software. A modem translates outgoing computer
signals into signals the telephone network can use. And it translates in coming telephone signals into computer signals. Special modems can connect portable computers with the

cellular network.
Once equipped, a computer can use the telephone network to contact computerized information services called on-line service. This breakthrough has facilitated the flow of information greatly. Some on-line services offer updated news bulletins, shopping services and games. Others feature issues of newspapers, magazines and other research materials. A subscriber to a bulletin board system (BBC) electronically "posts" messages and announcements, making them available to all other subscribers. Another on-line service is electronic mail (e-mail), through which individual users communicate with each other.

(iv) Research

In medical research, tiny computers will control mechanical devices that replace organs that have ceased to function. It is believed that computerized nervous system will assist paraplegics to walk again.
In agriculture, researchers use computers to determine fertilization programs that optimize yields of various crops.
Computers have become the most vital tools in commerce.

(v) Computer networks

Enable people in business to send and receive electronic data with little regard for time or distance. Today many business use electronic data exchange a method that alternates and standardize transactions between retailers and their suppliers to conduct business transaction electronically, transferring information such as orders and invoices between one computer and another. Another area that has a wide usage of computers is telecommuting. This technique allows workers to work at home and use computers communicate with an office computer.

(vi) Entertainment

Computers are playing a very important role in entertainment. A musical instrument digital Interface (MIDI) exists to link a musical instrument to a computer to control very many instrumental sounds.

The background music in many movies, television, shows and commercials is electronically generated.

(vii) Transport

With rapid development in information and technology, computers have found their way in transport. Today computers are used in air, road and water transport. In all terminals of transport, data entry pertaining entries and departures and even personal information are recorded. In many countries transport system has been computerized and has facilitated efficiency in the sector.

(viii) Automated production

It involves computerization of production in factories. In other words, it is computer –aided production which does not require high man power.

Advantages:

- It reduces the costs of production because of the efficiency of machines.
- It reduces fewer employers and this reduces the production costs.
- It leads to an improved quality of services and better range of products.

- It indirectly helps in job creation since it improves overall production and profits which are in turn used in expansion where much work is potentially hazardous.

Disadvantage:
In the short run, it leads to job displacement.

- **Effects on employment**

Evolution in information and communication technology has had its effect in employment through job creation, job replacement and job displacement.

- **Job creation**

Thousands of jobs have created in ICT sector especially in the production of vital electronic components that are the building blocks of computers. These components include the microchip resistors and transistors.
Once the computers have been built, a variety of personnel are needed to get them to do some useful work. System analysts are required to do analysis and design of systems which will run on computers. Programmers are needed to implement the design. Computer operators are required to see efficient operations of computers. Data entry operators are required to see efficient operations of computers. Data entry operators are needed to prepare data through verification and validation for computer processing. Technicians are required for maintenance and repair of hardware. Data processing managers are needed to ensure the smooth running of the systems and trainers to train users on computers and their use. Thus the manufacturer and use of computers have created new job opportunities in the society today.

- **Job replacement**

Computerization brings about elimination of jobs in most cases, but these jobs in most cases are replaced with those that have greater responsibility requiring high level of training.
Job replacement therefore is a situation where by certain jobs disappears in an organization but reappears in another form requiring more and high skilled man power. For example, copy typists using type writers are still needed in organizations but now use of computer word processors instead of type writers. Clerical staff in an organization filling forms in departments is now called data entry because they now use mobile phones and e-mail facilities to more skilled man power. Account clerks today use sophisticated accounting programs to do all the jobs.

- **Job displacement**

Job replacement is the process of replacing man power with computerized machines, either their own or with the help of a few skilled and highly trained people. In most cases, the eliminated jobs are those involving monotonous and unskilled labour. For instance factory jobs can be displaced by machines called robots.

However on a negative note: Computers affect the people who use them physically economically and socially in the following ways;

Computers as an occupation include the following;

Career opportunities in information and Communication Technology.

Description of career opportunities in the field of ICT.

- Information and communication technology (ICT) has created new job titles such as computer operators, computer technicians, system analysts, computer programmers, software engineers, computer engineers, information systems manager, data base administrator, computer trainer, website administrators, computer graphics designers and network administrators. This section explains some responsibilities of these professionals who are generally called information technology workers.
- Computer engineers
- Information systems manager
- Database administrator, computer trainer
- Computer operators
- Computer technicians
- System analysts
- Computer programmers
- Software engineers
- Website administrators
- Computer graphics designers and network administrators.

EXPLANATION! (Responsibilities of each)

This section explains some responsibilities of these professionals who are generally called information technology workers.

Computer operator

Some of the responsibilities of a computer operator include:

(i) Entering data into the computers

(ii) Keeping up-to-date records (log files) of all information processing activities.

Computer Technician

Given that computers require regular maintenance, upgrading as well as emergency repairs, demand for computer technicians continues to grow as more and more computerize their workplace and homes.

Some of the responsibilities of a computer technician.

(i) Troubleshooting computer hardware and software related problems.

(ii) Assembling and upgrading computers and their components.

(iii) Ensuring that all computer related accessories such as printers, modems, storage media and devices are in good working condition.

(iv) In developed countries, technicians help hardware engineers in designing and creating some computer components such as storage devices, motherboards etc.

System analyst

This is a person who is responsible for analyzing a company needs or problems then designs and develops a computer-based information system. A good system analyst is one who has a least for the following attributes;

- Good problem solving skills and creativity i.e. must have wide experience in solving problems.
- Good communication skills: The analyst must be able to communicate clearly and precisely both in writing and in speech.
- He/she must be able to talk to different groups of people e.g. managers, operators, attendant and general public.
- Must have business knowledge; The analyst must be well trained in relevant areas of computer science such as hardware, software and programming knowledge.

Some of the responsibilities of a system analyst Include;
Reviewing the current manual or redundant information system and making
recommendations on how to replace it with a more efficient one.
Working with programmers to construct and test the system.
Co-ordinating training for users of the new system.

Computer programmer
-Large organizations such as insurance companies, banks, manufacturing firms and government agencies hire programmers to work together with system analyst in order to;

- Write In-house application programs or system programs
- Customize commercial application package to suite the organization needs.
- Test, debug, Install and maintain programs developed or customized for the organization.

Software engineer
-A software engineer is one who is skilled in software development and technical operation of computer hardware. Some of the responsibilities of a software engineer are:

- Developing system and application software
- Developing user and technical documentations for the new software.
- Maintaining and updating the software to meet day to day requirements while overcoming challenges.

Computer engineer
Computer and electronic engineers are coming up with and more efficient technologies in information and communication technology almost daily. Since computers are electronic devices, hardware designers must be good in electronic engineering in order to be able to:

- Design and develop computer components such as storage devices, motherboards and other electronic components.
- Determine the electrical power requirement of each computer component.
- Re-engineer computer components to enhance if its functionality and efficiency.
- Design and develop engineering and manufacturing computer controlled devices such as robots.

Information system manager

The information system manager controls, plans, staffs, schedules and monitors all the activities of the ICT department in the organization. Using computerized management information system. (MIS), the manager can test the impact that an alternative courses of action might have on the business.

Other responsibilities of an information system manager Include:

- Making sure that all tasks in the IT department are done correctly and on time in order to support business planning, control and decision making process.
- Preparing budgets for the departments.
- Keeping the department inventory records up-to-date.
- Managing the human resource within the department.

Database administrator (DBA)

The major purpose of computerizing the organizations or institutions is to store data in an organized way for easy access, retrieval and update. The organization requires a person who should be responsible for updating records in an information system database.

For this reason, a database administrator is responsible for:

- Designing and developing database applications for the organization.
- Setting up security measures needed to control access to data and information.
- Keeping the database up-to-date by adding new records, modifying or deleting unnecessary records.

Computer trainer

Due to the dynamic nature of computers and information technology, there is a high demand for qualified ICT trainers. Some of the responsibilities of an ICT trainer are:

- Training people on how to use a computer and various application programs.
- Developing training reference materials.
- Guide Learners on how to acquire knowledge through carrying out research.
- Advising the learners on the best career opportunities in the broad field of ICT.
- Preparing learners for ICT examinations.

Web administrator/Webmaster

Internet is one of the areas of information and communication technology that has drawn the interest of most people. These people are able to exchange messages, search for information and business through the
internet.

Business organizations and individuals put information on the internet by developing websites. Most organizations hire the services of a web developer who is given the role of the company's web administrator also referred to as webmaster. A

web administrator is responsible for:

- Developing and testing websites.
- Maintaining, updating and modifying information on the websites to meet new demands by the users.
- Monitoring the access and use of internet connection by enforcing security measures.
- Downloading information needed by an organization or institution from internet websites.

COMPUTER STUDIES

Paper 1
Oct./Nov.2001
2½ hours

SECTION A (20 marks)

(NOTE: THIS IS NOT THE REAL PAPER OF 2001! IT IS A PROTOTYPE STANDARD PAPER. THANK YOU!)

1. Electronic transfer of text messages from one geographical area to another using
(A) Internet communication
(B) Electronic mail
(C) Telegram
(D) Downloading

2. What is the most appropriate file extension name for an image file.
(A) .htm (B) .ppt
(C) .gif (D) .mpe

3. One of these options is an example of absolute cell Referencing.
(A) =average(b5:b12)
(B) =Sum(A11:A17)
(C) =Count(C3:C14)
(D) =Sum(A7:$A20)

4. The major advantage of Internet is
(A) Access information world wide

(B) Speedy access of information
(C) Good source of entertainment
(D) Good advertising medium

5. Electrostatic discharge refers to;
(A) Discharge from electric devices
(B) Use of antistatic sprays
(C) Static electricity generated from people
(D) Brown out
6. Registers in central processing unit perform;
(A) Temporarily hold data being processed
(B) Carry out arithmetic and logic instructions
(C) Receive data from input devices
(D) Direct data to the right hardware
7. The major differences between second generation and third generation computers;
(A) Use of vacuum tubes
(B) Integrated circuits
(C) Transistors
(D) Artificial intelligence
8. A group of several bits forms;
(A) Bit
(B) Nibble
(C) Word
(D) Sentence
9. Which of these is the best network for computers in one room.
(A) LAN
(B) MAN
(C) WAN
(D) RAN

10. Recordings on a cheque can best be read by;
(A) Optical Mark Reader
(B) Optical character Reader
(C) Magnetic Tape Reader
(D) Magnetic Ink character Reader

11. Punching information into the database form is termed as;
(A) Data entering
(B) Data capture
(C) Keyboarding
(D) Typing

12. Which of these storage devices supports more file Formats
(A) WORM
(B) FDD(Floppy disk drive)
(C) VCD
(D) DVD

13. Which type of database allows the user who has a computer terminal to a public network?
(A) Ready made databases
(B) on-line database
(C) CD-ROM database
(D) Database file

14. URL refers to ;
(A) Path of the hyperlink
(B) Address of a file on a computer
(C) Networking protocol
(D) A book mark

15. Which of these is the biggest threat to information technology?
(A) piracy
(B) Virus outbreaks
(C) Illiteracy
(D) High expenditure

16. Which of the following would you use a database file for;
(A) To workout personal finances
(B) To store the details of all four tapes and CDs
(C) To write a letter to a friend
(D) To design a birthday card

17. Find odd man out;
(A) Super computers
(B) Mini computers
(C) Micro computer
(D) Laptops

18. The following are examples of mechanical computer except;
(A) Slide rule
(B) Pascal's arithmetic machine
(C) Leibnitz's stepped Reckoner
(D) Babbage's analytical engine

19. Which of these is not a control on a web page form;
(A) Radio button
(B) Check box
(C) Hour glass
(D) Button

20. Which of these is not a DOS command?
(A) SAVE
(B) FORMAT
(C) TREE
(D) CHKDSK

SECTION B: (60 marks)

21. a) What is a computer virus
(02 marks)
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b) Give four sources of computer virus
(04 marks)
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c) Give four symptoms of a computer virus
(04 marks)
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d) List three programs that can be used to remove viruses
(03 marks)
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e) How best can one control computer viruses
(02 marks)

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22. a) What is a drive?

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b) Give two examples of drives found in a computer
(01 mark)

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c) Give two differences between a hard disk and compact disk
(02 marks)

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d) List three ways of preventing hard disk condensation
(03 marks)

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e) Outline three characteristics of a floppy diskette

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f) Outline four precautions of handling any storage media (03 marks)

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g) Distinguish between blackout and brownout (01 mark)

……

23. a) Define software (02 marks)

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b) Give the categories of software (02 marks)

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c) Distinguish between an operating system and utility programs (03 marks)

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d) Give four functions of an operating system (04 marks)

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e) Give four examples of a graphical user interface system (GUI) (04 marks)

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24. (a) Define e-mail
(02 marks)

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(b) What is newsgroup? (02 marks)

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(c) Give the meaning of these items;
(04 marks)

CC……
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BCC……
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(d) Give four advantages of using email communication
(04 marks)

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e) Give two examples of email service providers your country (03 marks)

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23.a) Define computer network
(02marks)

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b) Give three devices needed for computer networking (03 marks)

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(c) What is a protocol?
(02marks)

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(d) Give four network protocols for computer communication (04 marks)

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e) Outline the two major types of computer networks (04 marks)

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26. a) What is a web browser? (02 marks)

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(b) Give two examples of web browsers (04 marks)

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(c) Distinguish between a search engine and a web directory (03 marks)

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d) Distinguish between a web page and a hyper link (03 marks)

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(e) Give two examples of web site development soft-ware (03 marks)

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SECTION C (20 marks)

Choose one question only.

27.What are the advantages and disadvantages of Internet in business today?

(20 marks) ……

28. You are given an assignment of presenting to an audience in a suitable presentation program. Explain, describe and elaborate the process taken to accomplish this task.
(20 marks)

29. Define, describe and elaborate on software as applied in computers.

(20marks)

……

SOLUTIONS TO TEST PAPER ONE
SECTION A.

1. B	**2. C**	**3. D**	**4. A**	**5. A**
6. A	**7. C**	**8. C**	**9. A**	**10. D**
11. B	**12. D**	**13. B**	**14. C**	**15. B**
16. B	**17. D**	**18. C**	**19. C**	**20. D**

SOLUTIONS TO SECTION B:

21. a) What is a Computer Virus?
A Computer virus is a program designed to alter the way your computer Works
without your knowledge or consent.
b) Give four sources of computer virus.
Viruses are usually disguised and can enter your computer by:

- Receiving emails and opening email attachments
- Internet downloads
- Web pages
- Software on CD ROMs or floppy discs

(c) Give four symptoms of a computer virus
Some common symptoms of virus infections are:

- Inaccessible disks or disk drives.
- You see distorted windows and dialog boxes.
- Files being deleted for no known reason.
- Strange error messages.
- Strange behavior with your email program.
- Your computer suddenly slows down. This can be more noticeable if your computer is connected to a network.
- Your computer starts behaving strangely. For example disc drive lights may begin to flash.
- If you run an internal email server, this may become overloaded and slow down. Your data files such as Word or Excel may become corrupt or get lost. Sometimes these popular programs may display a message telling you that your data files

are not in their correct format.

- Any unexpected changes in the content of your files.

d) List three programs that can be used to remove viruses;

- BitDefender
- PC-cillin
- Panda Antivirus
- McAfee VirusScan
- AVG Antivirus Pro
- Norton Antivirus
- F-Prot
- Kaspersky Antivirus

(e) How best can one control computer viruses?

- Ensure your computer has the latest anti virus software installed and that the virus definitions are up to date.
- Ensure that your anti virus program is actually switched on.
- When you use floppy discs or CD ROMs from friends make sure you first scan them with your anti virus program.
- In addition to scanning for viruses on a regular basis, install an 'On access' scanner (included in most good a-v software packages) and configure it to start automatically each time you boot your system, This will protect your system by checking for viruses each time your computer accesses an executable file.
- Virus scan any new programs or other files that may contain executable code before you run or open them, no matter where they come from. There have been cases of commercially distributed floppy disks and CD-ROMs spreading virus infections.
- Be extremely careful about accepting programs or other files during on-line chat sessions. This seems to be one of the

more common means that people wind up with virus or Trojan horse problems. And if any other family members (especially younger ones) Use the computer, make sure they know not to accept any files while using chat.

- Do regular backups. Some viruses and Trojan horse programs will erase or corrupt files on your hard drive and a recent backup may be the only way to recover your data.
- Ideally you should back up your entire system on a regular basis. If this is not practical, at least back up files that you can not afford to lose or that would be difficult to replace. Documents, bookmark files, address books, important E-mail, etc.

Additional knowledge

Types of viruses

Trojan Horse:

A trojan horse program has the appearance of having a useful and desired function. While it may advertise its activity after launching, this information is not apparent to the user beforehand. Secretly the program performs other, undesired functions. A Trojan Horse neither replicates nor copies itself, but causes damage or compromises the security of the computer. A Trojan Horse must be sent by someone or carried by another program and may arrive in the form of a joke program or software of some sort. The malicious functionality of a Trojan Horse may be anything undesirable for a computer user, including data destruction or compromising a system by providing a means for another computer to gain access, thus bypassing normal access controls.

Worm:

A worm is a program that makes and facilitates the distribution of copies of itself; for example, from one disk drive to another,

or by copying itself using email or another transport mechanism. The worm may do damage and compromise the security of the computer. It may arrive via exploitation of a system vulnerability or by clicking on an infected e-mail.

Boot sector Virus:
A virus which attaches itself to the first part of the hard disk that is read by the computer upon boot up. These are normally spread by floppy disks.
Macro Virus:
Macro viruses are viruses that use another application's macro programming language to distribute themselves. They infect documents such as MS Word or MS Excel and are typically spread to other similar documents.

Memory Resident Viruses:
Memory Resident Viruses reside in a computers volatile memory (RAM). They are initiated from a virus which runs on the computer and they stay in memory after its initiating program closes.
22. a) What is a drive?
"drive" refers to an entire unit containing multiple platters, a read/write head assembly, driver electronics and motor.
Or
"drive" refers to a device distinct from its medium, such as a tape drive and its tape, or a floppy disk drive and its floppy disk.
b) Give two examples of drives found in a computer
These are; Floppy drive, (Compact Disk) CD drive /DVD drive.
(c) Give two differences between a hard disk and compact disk.

Hard disk		Compact disk
Used for secondary storage	1	Used for tertiary and offline storage
Very fast access to data (about 1000 KB/s)	2	Slow in accessing data (about 100 KB/s)
Stores huge volumes of data (about 100 gigabytes and plus)	3	Stores low volumes of data (about 700 Mb).
Hard disks are less portable compared to a CD.	4	Are more portable and used for distribution of digital information (music, video, computer programs)

(d) List three ways of preventing hard disk condensation.
Generally, condensation can be prevented by maintaining the following environmental conditions:

- Humidity range: 5 to 80% RH
- Temperature range: 5 to 45 degrees centigrade (ambient temperature)
- Wet-bulb temperature: 29 degrees centigrade or less
- Temperature gradient: Within 15 degrees centigrade/h

Examples of conditions likely to cause condensation and preventive measures are explained below;

(i) Moving or unpacking

Condensation may occur if the HDD is left in a low-temperature environment for a long time and then is moved to a high-temperature environment. In this case, do not unpack the HDD before moving it but move it packed in its package. After carrying it to the high-temperature environment, leave it packed until it adapts to the ambient warm temperature.

This kind of care is specifically required for a HDD left outdoors or in a non-air-conditioned warehouse or when it is moved from an air-conditioned room during summer to a high temperature outdoors.
In general, care must be taken to prevent condensation when the temperature difference between the HDD and the ambient air is 20 degrees centigrade or more.

(ii) Air conditioner operation

-After a system is stopped for a certain period of time, the HDD may be fully cooled. A drastic increase in the ambient temperature may cause condensation.
This is especially true in a cold area where the system and air conditioner are stopped at night or on holidays.

The HDD is fully cooled in the next morning or the morning after a holiday. In this environment, condensation is more likely to occur.
To prevent condensation in this environment, run the air conditioner so that the room temperature is raised no faster than 15 degrees centigrade per hour and the humidity is kept under the specified level (80% RH or less).

(e) Outline three characteristics of a floppy diskette

A "track" is a narrow recording band that forms a full circle on the surface of the disk
The disk's storage locations are then divided into pie-shaped sections, which break the tracks into small arcs called sectors (can hold 512 bytes of data)
Floppy Disks store data on both sides. Each side consists of 80 tracks with 18 sectors per track
To read from and write on the disk, sectors are grouped into clusters (consist of 2 to 8 sectors)

A cluster is the smallest unit of space used to store data

Additional knowledge

The Physical Contents of a Floppy Disk (3.5 inch)

❖ Consists of a circular, thin, flexible plastic disk with a magnetic coating enclosed in a square-shaped plastic shell.

❖ Components: Shutter, Shell, Liner, Disk, Metal Hub, Magnetic Coating**.**

Advantages and Disadvantages of a floppy Disk

Advantages:

- Portable
- Inexpensive
- Write-protect notch

Disadvantages:

- Cannot hold a lot of information compared to other modes of storage.
- Fairly easy to damage.
- Relatively slow.
- Sometimes not formatted (although not difficult to do).

Storage Capacity

- A typical High Density Floppy Disk contains 1.44 megabytes

(f) Outline four precautions of handling any storage media

- Do not expose the device to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight)
- Spilling a coke or any liquid to it.

- Keep the device out of moisture
- Keep devices from magnetic fields.

Avoid risky physical environment.

- Disks don't do well in sun or heat (such as in glove)
- Compartments or top of heat vents)
- They should not be placed near magnetic fields (including those created by mobile phones)
- They should not be exposed to chemicals such as cleaning solvents or spilled coffee.
- Keep devices in their storage jackets or a disk bank.

(g) Distinguish between blackout and brownout

-A brown-out is a condition of lower than normal power line voltage being supplied by your local utility or generating equipment. This condition may be short term (minutes to hours) or long term (1/2 day or more). A power line voltage reduction of 8 - 12% is usually considered a brown-out.

-A black-out is a complete loss of power for whatever reason and is usually short term, as it is so serious that the generating company will classify the situation as an emergency. However, just occasionally a catastrophe may cause a longer term black-out.

23. a) Define software

The programs, routines, and symbolic languages that control the functioning of the hardware and direct its operation.

Or

A set of instructions that cause a computer to perform one or more tasks.

The set of instructions is often called a program or, if the set is particularly large and complex, a system.

(b) Give the categories of software

- System software
- Application software

-System software is made up of control programs such as the operating system and database management system (DBMS).
-Application software is any program that processes data for the user (inventory, payroll, spreadsheet, word processor, etc.)

(c) Distinguish between an operating system and utility
-The **operating system (OS)** sets the standards for all application programs that run in the computer. Applications "talk to" the operating system for all user interface and file management operations. Also called an "executive" or "supervisor," While Utility programs are programs that support using the computer, an application or a development environment.
Utility programs, or "utilities," support everyday use of the computer include file management (creating, moving and renaming folders, copying and deleting files), searching for files, comparing file contents as well as performing diagnostic routines to check **performance** and current health of the hardware.
(d) Give four functions of an operating system
Manage Storage Space:
The operating system stores data at some location on disk. It knows where to go to retrieve data when it is needed. It uses the filing cabinet system to keep track of the data stored on disks, tape drives, CD-ROMS, and external drive
Detects Problems and Equipment Failure:
The operating system also is the maintenance mechanic of the system. It checks the system for failures that will cause problems in processing. Messages will appear on the screen when there is a problem. Sometimes operating systems will have built in messages for quick fixes to the problem, or will

refer you to a resource to get more information.
A typical message that one would see is” System Failure, or "Your computer has performed an illegal operation".
When the computer is turned on, the computer checks all of the storage devices. You can see the system being checked by the lights going off and on at the various drive locations. All of the electronic parts are checked also. If the computer can not do a self fix, it will not let you continue working.

Traffic Controller:

The operating system is also in charge of the data that is coming into the computer (input by way of the keyboard or mouse) and going out of the computer (output by way of printer or screen display). It directs the flow of data to and from the external devices and also takes care of control routing information along the bus to be processed by the processor.

System Resource Manager:

What is the system resource? Well any hardware or part of the computer used by the computer program is considered a system resource. (Talk about using someone.) The memory, disk drive, external devices, etc are all "mothered” by the operating system. The O/S "allocates" or makes sure that enough space is there for the computer program to operate, allocates, time for each program to work, and also keeps the processor going after each instruction. Almost like a teacher standing over you to make sure you finish a problem.

(e) Give four examples of a Graphical User Interface system (GUI)

A few examples of a GUI Operating Systems:

- Microsoft Windows **95**
- Apple System **7**
- Apple Mac OS.

-Some GUIs are designed for the rigorous requirements of vertical markets. These are known as "application specific graphical user interfaces." Examples of application specific GUIs:

- Touch screen point of sale software used by wait staff in busy restaurants
- Self-service checkouts used in some retail stores.
- ATMs (Automated Teller Machines)
- Airline self-ticketing and check-in.
- Information kiosks in public spaces like train stations and museums.
- Monitor/control screens in embedded industrial applications which employ a real time Operating system (RTOS).

24. a) Define e-mail

-E-mail (electronic mail) is the exchange of computer-stored messages by telecommunication.

(b) What is newsgroup?

A newsgroup is a discussion about a particular subject consisting of notes written to a central Internet site and redistributed through Usenet, a worldwide network of news discussion groups.

(c) Give the meaning of these items

CC - Is **Carbon Copy**, and is for people you want to see the email but may not be directly to them.

BCC - Is **Blind Carbon Copy,** and is the same as bcc but their email address is left on the header; the email receiver won't be able to see who else got a copy. This is a good way to send out jokes and such without giving out other people's email addresses.

(d) Give four advantages of using email communication

- Email can distribute information quickly to many people for the time it takes to email one person.
- Email is effective in providing quick answers to yes and no, type questions. E.g. Do you do international delivery?
- Email is effective in finding the right person in an organization or company to answer your question.
- Email is good to make appointments for busy people.

Provides time stamped proof of an interaction.

E-mail works well in that it provides the equivalent of a sales receipt for communication. It covers exactly what was said along with a time reference.

Easy to archive for future recall.

Most worthwhile e-mail applications provide search ability that can provide you with all your pertinent e-mail - often even sortable according to conversation threads – in return for a few entered key words.

The disadvantages are;

- Email can become time-consuming for answering complicated questions and misunderstandings can arise because cultural differences in the interpretation of certain words. The telephone, is much better for providing detailed answers or if you feel that the question is not absolutely clear.
- Email can compromise the security of an organization because sensitive information can be easily distributed accidentally or deliberately. Email should be entrusted to well trained and trusted staff members.
- Email can become impersonal or misunderstood.

(e) Give two examples of email service providers in your country.

- Yahoomail.com
- Operamail.com
- Hotmail.com
- Gmail.com

25. (a) Define computer network?

It is a data communication system that interconnects computer systems at different sites.

Or

A group of devices such as computers and printers connected together or to a
hub or switch in order to share information and tasks. Networks also include
software and cables.

26.(a) Mention the hardware requirements for establishing the computer networks.

- A computer /personal computer (PC)
- Hubs
- Repeaters
- Bridges
- Switches
- Routers

-Other hardware for establishing networks or dial-up connection include;

- **Multiplexer;** that combines several electrical signals into a single signal.
- **Network Card;** a piece of computer hardware to allow the attached computer to communicate by network.
- **Modem;** device that modulates an analog “carrier” signal (such a sound), to encode digital information, and that also demodulates such a carrier signal to decode the transmitted

information, as a computer communicating with another computer over the telephone network.

- **ISDN terminal adapter (TA):** a specialized Gateway for ISDN
- **Line Driver:** a device to increase transmission distance by amplifying the signal. Baseband networks only.

(b) What is a protocol?

-The word "protocol" refers to a set of rules for communicating with the use of Internet.

-Two programs or computers that follow the same rules are able to exchange information, even if they don't run the same operating system and are not made by the same company.

c) Give four network protocols for computer communication.

TCP: Transmission Control Protocol, used for the reliable transmission of data over network.

HTTP: Hypertext Transfer Protocol, used for transmitting and displaying information in the form of web pages on browsers.

FTP: File Transfer Protocol, used for file transfer (uploading and downloading) over the Internet.

(d) Outline the two major types of computer networks

- Global Area Network (GAN)
- Wide Area Network (WAN)
- Virtual Area Network (VPN)
- Metropolitan Area Network (MAN)
- Campus Area Network (CAN)
- Local Area Network (LAN)
- Personal Area Network (PAN)

27. (a) What is a web browser?
A **web browser** is a software application that enables a user to display and interact with text, images, videos, music and other information typically located on a Web page at a website on the World Wide Web or a local area network.
(b) Give two examples of web browsers
-Internet Explorer
-Netscape Navigator
-Opera
-Firebird
-Safari
(c) Distinguish between a search engine and a web directory.
A search engine is program that searches documents for specified keywords and returns a list of the documents where the keywords were found while
A Web directory or link directory is a directory on the World Wide Web. It specializes in linking to other Websites and categorizing those links.

(d) Distinguish between a web page and a hyper link.
A hyper link is a link in a web page that brings you to another location or
resource when activated. Hyperlinks usually appear as underlined text and
printed in a contrasting color, but they may also appear as graphics, such as
buttons to click Where as;
A Webpage is a resource of information that is suitable for the World Wide Web
and can be accessed through a web browser.
This information is usually in HTML or XHTML format, and

may provide navigation to other web pages via hypertext links.

(e) Give two examples of web site development software

- HTML- Hypertext Markup Language
- JavaScript
- PHP- Hypertext preprocessor.

SOLUTIONS TO SECTION C

28. What are the advantages and disadvantages of Internet in business today?

Global Audience.

Content published on the World Wide Web is immediately available to a global audience of users. This makes the World Wide Web a very cost-effective medium to publish information. Reaching more than 190 countries.

Operates 24 hours, 7 days a week.

You don't need to wait until resources are available to conduct business. From a consumer's perspective as well as a provider's business can be consummated at anytime. The fact that the Internet is operational at all times makes it the most efficient business machine to date.

Relatively Inexpensive

It is relatively inexpensive to publish information on the Internet. At a fraction of the cost to publish information by traditional methods, various organizations and individuals can now distribute information to millions of users. It costs only a few thousand dollars to establish an Internet presence and publish content on the

Internet.

Product Advertising

You can use the World Wide Web to advertise various products. Before purchasing a product, customers will be able to look up various product specification sheets and find out additional information. You can use the multimedia capabilities of the World Wide Web to make available not only various product specification sheets but also audio files, images, and even video clips of products in action. The beauty of the Web is that it allows customers to explore products in as much detail as they desire. If the client just wants a general overview, he or she can look at the advertising information. For those wanting more in depth information, you can provide white papers and product descriptions for download. The Web allows a business to provide timely information, you can simply place the information on the Web page and it is available immediately for your customers.

Distribute Product Catalogs

The World Wide Web is a very effective medium for distributing product catalogs. In the old days, putting together a product catalog used to be very costly in terms of time and money needed to publish and distribute it. The World Wide

Web changes all this by allowing content developers to put together a sales
catalog and make it available to millions of users immediately. Furthermore, unlike printed product catalogs that are usually updated around
once a month, product catalogs on the World Wide Web can be updated as
needed to respond to various changing market conditions.

Online Surveys

Traditional methods of performing surveys are often relatively slow and expensive compared to online surveys conducted on the Internet. For example, in order to fill out various needs of customers or what they would like to see in a future product, it's often necessary to compile a list of address and mail a questionnaire to many customers. The success of such an attempt is not always guaranteed and can be very costly in terms of mailing the questionnaires and entering responses to a databases and analyzing it. On the other hand, you can use the World Wide Web to automate the whole process. For example, you can set up a CGI script to conduct online surveys. Results of such a survey can be automatically updated to a database. This database can then be used to keep a pulse on various opinions and needs of customers.

Announcements

With the World Wide Web, you can distribute various announcements to millions of users in a timely manner. Because there is virtually no time lag from the time it takes to publish information to making the information available to users, the Web is an ideal medium to publicize announcements. As more people discover the virtues of the Web and get connected to the Internet, the Web will become the medium of choice for many

organizations and individuals to publicize various announcements.

Provide Technical Support

You can also use Web site to provide technical support to users. Because Web pages can be updated immediately with new information, various technical support literature can be immediately modified in light of new findings and developments. This can be accomplished without having to distribute changes to all users affected by any changes using traditional mediums of information distribution, which are often quite costly compared to the World Wide Web.

Create Online Discussion Forums

By using applications such as WebBoard, it's possible to set up online discussion forums on the Web.

Obtain Customer Feedback

The interactive nature of the World Wide Web is ideal for obtaining customer
feedback.
You can easily set up a CGI script to obtain customer feedback about a product
or service.
Because customer feedback submitted by customers can be read immediately, it's possible to respond to various customer concerns in a timely
manner, increasing customer satisfaction and quality of customer service.

Immediate Distribution of Information

When information is added to a Web site, it's immediately available for browsing
By millions of Internet users. The World Wide Web is an ideal medium of

Information distribution because it takes away the time lag associated with
publishing content and actually making it available to users.

Easy Integration with Internal Information Systems

Internet information systems deployed on the Internet can be easily integrated
with internal information systems managed with office productivity applications
such as Microsoft Office.

Powerful Content Publishing Tools

A new breed of Internet aware applications will start emerging in software stores
by the time you read this. These applications will enable users to develop
content for the World Wide Web by simply saving as an HTML file. In addition to
software developers making existing applications Internet aware, various new,
powerful, and easy-to use Internet content publishing applications are also being
developed. These applications will make he task of publishing content on the
Internet even easier. Most of these applications are developed for Windows
users.

Multimedia

The capability to incorporate multimedia into Web pages is a major advantage
of usingWorld Wide Web to publish information. For example, many Web sites use
sounds and video clips to make the content easier and more interesting to

browse.

Formatting Capabilities

Content published on the World Wide Web can be richly formatted by using various HTML tags and graphic formats. The capability to do this is a major reason for the success of the World Wide Web. In addition to using HTML tags and various multimedia formats in Web pages, various interactive controls can also be added to a web page. This capability allows Website content developers to create "active" Web sites. For example, before a user sends some information to a Web server for Processing, a VBScript or JavaScript subroutine can be used to verify information typed in by the user. Various formatting capabilities, along with technologies such as Java and VBScript, make the World Wide Web a richly interactive medium that you can use to distribute information to millions of users.

Disadvantages of the Internet

There are certain cons and dangers relating to the use of Internet that can be summarized as follows:

Personal Information: If you use the Internet, your personal information such as your name, address, etc. can be accessed by other people. If you use a credit card to shop online, then your credit card information can also be ‘stolen’ which could be akin to giving someone a blank check.

Pornography: This is a very serious issue concerning the Internet, especially when it comes to young children. There are thousands of pornographic sites on the Internet that can be easily found and can be a detriment to letting children use the Internet.

Spamming: This refers to sending unsolicited e-mails in bulk, which serve no
purpose and unnecessarily clog up the entire system.

Can leave the businessmen feeling isolated;

This is very common. Because the WWW is faceless (In most cases), It can appear cold and inhuman. This can leave you feeling isolated and very inward. Not a nice feeling at all. Everyone likes to socialize and meet people, but in this case, it's quite difficult in business anyway.

Hard to tell if people are lying;

There is so much information on the World Wide Web now; It's sometimes hard to tell the difference between crap and quality. A lot of the crap is targeted at newbies. Here is an example "Make money fast by doing NOTHING", Sound familiar? I bet you have had a ton of e-mails saying something similar.

Information Overload;

Once again we get to the part of there being a lot of information on the World Wide Web. There can be can too much good information too. There can be a lot of competition for an industry; this can leave you more confused than if there were presented with loads of crap. You might not be able to tell whom to choose. If you are a veteran of the net, You won't have much to worry about, however if you are new then this is a problem.

Spamming:

Spamming refers to sending unwanted e-mails in bulk, which provide no purpose and needlessly obstruct the entire system. Such illegal activities can be very frustrating for you, and so instead of just ignoring it, you should make an effort to

try and stop these activities so that using the Internet can become that much safer.

Virus threat

Virus is nothing but a program which disrupts the normal functioning of your computer systems. Computers attached to internet are more prone to virus attacks and they can end up into crashing your whole hard disk, causing you considerable headache.

28.You are given an assignment of presenting to an audience in a suitable presentation program. Explain, describe and elaborate the process taken to accomplish this task.

29. Define, describe and elaborate on software as applied in computers.

Computer hardware cannot perform a single act without instructions. These instructions are known as software or computer programs. There are two major types of software: **application software** and **systems software**.

-Application software is a set of computer instructions that direct computer hardware to perform specific data or information processing activities that provide functionality to the user.

-systems software acts primarily as an intermediary between computer hardware and application programs, and provides

important self-regulatory functions for computer systems, such as loading itself when the computer is turned on, managing hardware resources such as secondary storage for all applications; and providing commonly used sets of instructions for all applications to use.
Because there are so many different uses for computers, there are a correspondingly large number of different application programs.

- **Tailor-made application software** addresses a specific or unique business need for a company.
- **Off-the-shelf application software** can be purchased, leased, or rented from a vendor that develops programs and sells them to many organizations (Vertical Markets).
- **General-purpose application programs** that are not linked to any specific business task, but instead support general types of information processing;

-Spreadsheet
-Data management
-Word processing
-Desktop publishing
-Graphics
-Multimedia
-Communications
-Development tools - software used to construct application.

❖ **Spreadsheet software** transforms a computer screen into a ledger sheet, or grid.
Packages include already-programmed statistical, financial, and other
business

formulas and are primarily used for decision support processing.

❖ **Data management software** supports the storage, retrieval, and manipulation of data. There are two basic types of data management software:

- Simple filing programs patterned after traditional, manual data filing techniques.
- Database management systems (DBMSs) a collection of files serving as the data resource for computer-based information systems.

❖ **Word processing software** allows the user to manipulate text rather than just numbers.

❖ **Desktop publishing software** allows microcomputers to create newsletters, announcements, advertising copy, and other specialized documents by combining photographs, diagrams, and other images with text to produce a finished, camera-ready document.

❖ **Graphics software** allows the user to create, store, and display or print charts, graphs, maps, and drawings. Multimedia. There are two general types of multimedia software:

- Presentation software presents a sequential procession of information similar to a movie or television show.
- Interactive software allows a user to alter the sequence or flow of information, similar to looking at an encyclopedia or a photo album.

❖ **Communications software** allows computers located close together or far apart to exchange data over dedicated or public cables, telephone lines, satellite systems, or microwave circuits.

❖ **Speech-recognition software** translates voice patterns into

text. There are two types:
Discrete speech recognition can interpret only one word at a time, so users must place distinct pauses between words.
Continuous speech recognition can interpret a continuing stream of words.

❖ **Software suites** are collections of application software packages bundled together.

❖ **Workgroup software** helps groups and teams work together by sharing information and by controlling workflow within the group. Products are designed to support tasks such as:

- Project management
- Scheduling (called calendaring)
- Workflow

There exist hundreds of other application software Products;

❖ **Middleware** is software designed to link application modules developed in different computer languages and running on heterogeneous platforms.

❖ **Enterprise software** consists of programs that manage the vital operations of an organization (enterprise), such as:

- Supply-chain management
- Inventory replenishment
- Ordering
- Human resources management
- Manufacturing
- Operations
- Accounting and financial management.

▪ **Component ware** is a term to describe a form of application software, in which each program manages one type of operation.

▪ **Presence technology** can detect when you're online and

what kind of device you're using.

- **Schematics software** can create schematics, space plans, layouts, etc.
- **Systems software** is the class of programs that controls and supports the computer hardware and its information processing activities. It also facilitates the programming, testing, and debugging of computer programs.
- **Systems software** can be grouped into three functional categories:

- **System control programs** are programs that control the use of hardware, software, and data resources of a computer system during its execution of a user's information processing job. An operating system is the prime example.

- **System support programs** support the operations, management, and users of a computer system by providing a variety of services. System utility programs, performance monitors, and security monitors are examples.
- **System development programs** help users develop information processing programs and procedures and prepare user applications. Language compilers, interpreters, and translators are examples.

Paper 1
Oct./Nov.2002
2½ hours

1. Which of these best characterizes the mechanical era (1623-1945) computer evolution?
a. Napier's bones.
b. Programming languages
c. Leibniz calculator
d. Multics

2. A person who accesses computer systems illegally is referred to as
a. Criminal
b. Pirate
c. Hacker
d. Wizard

3. Which of these best describes categories of computers systems?
a. analog and Digital computers
b. Micro and analog computers
c. Windows and DOS
d. Digital and mainframe computers.

4. The following are possible with a computer except:
a. speed and versatility
b. Documentation and report making
c. Scheduling
d. Thinking

5. ……..is the permanent type of memory found in

computer systems.
a. RAM
b. ROM
c. CPU
d. ALU

6. How many bits are found in the word INPUT
a. 5
b. 35
c. 40
d. 56

7. Which of the following is a system software?
a. Spreadsheet
b. BASIC
c. Linux
d. Microsoft word

8. The following are storage media except.
a. Printer
b. CD-ROM
c. Tapes
d. Diskettes

9. Which of the following is an application software?
A. Windows
B. Computer games
C. COBOL
D DOS

10.In word processing the feature where a word which does not

fit on a line automatically moves to the next line is called.
a. Carriage return
b. Entering
c. Scrolling
d. Word wrap.

11……is the intersection of a row and column in spreadsheets.
a. A pointer
b. An address
c. A cell
d. A record

12……is an address that does not change when a formula is copied to another location in spreadsheet.
a. Absolute address
b. Relative address
c. Mixed address
d. Formula address

13.A computer service that enables users to send and receive messages is called.
a. Internet.
b. WWW
c. Browsing
d. E-mail

14.A network that connects computers in the same building is called.
a. BUS
b. LAN
c. WAN

d. MAN

15…….is best for creating, storing and retrieving large volumes of related information.
a. A Microsoft word
b. Database
c. An e-mail
d. A word file

16.Identify one of the following that it is an odd operation of database
a. Creating slides
b. Creating a database file structure
c. Defining fields
d. Calculating statistics for groups of records.

17.The following are done using a representation software except;
a. Creating an organization chart
b. Creating graphic objects
c. Creating a Query
d. Adding video clips.

18.Identify one of these that represent an application of presentation software.
a. Displays e-mail messages
b. Desktop publishing
c. Printing and addressing set of letters
d. A visual aid to enhance communication.

19.The following best describes the purpose of a web page.

A. Making money on the Internet
B. Creating awareness about something on the Internet
C. Uploading files on the Internet
D. Downloading files on the Internet.

20. Which of these is likely to happen in future about the Internet?
a. Very expensive
b. Faster connections
c. Fewer users
d. Extensive use of wires

SECTION B: (60 marks)

Attempt only four questions in this section. All the working must be done in the space provided.

21.(a) What is meant by the computer generation?
(01 mark)
……
……
…….....

(b) State five differences between the first and fourth generation of computers.

(05 marks)
(i)……
……
(ii)……

……..
(iii)……
……
(iv)……
……

(c)(i) Define Digital computer
(01 mark)
……
……
(ii) Give two main differences between digital and analog computers. (02 marks)
……
……
……
……

(d)(i) What is computer hardware?
(01 mark)
……
……
……
(ii) List five examples of hardware devices.
(05 marks)
……
……
……
……

22. (a) Write DOS in full
(01mark)

……
……

(b) State four differences between DOS and windows
(04 marks)
……
……
……

(c) (i) Define an application Software.
(01 mark)
……
……
……

(ii) Give any two distinctions between word processing and Desktop publishing.
(04 marks)

……
……
……
……

(d) State four uses of a word processor
(04 marks)
……
……
……

23. (a) What is the meaning of these terms?

(i) Worksheet:
(01 mark)
……
……
…….....

(ii) Active cell:
(01 mark)
……
……
……

The spreadsheet below shows sales of a second hand cloth store in a given week. Answer questions. (b) to (d) on the spreadsheet.

A	B	C	D	E	F
1.			**SECOND HAND-CLOTH STORE**		
2. Day	Dept	Units sold	Costs Price ($)	Selling Price ($)	Profit ($)
3. Monday	Shirts	46	16.50	20.00	3.50
4. Tuesday	Shirts	60	18.70	30.00	12.00
5. Wednesday	Shirts	36	11.40	16.60	…
6. Thursday	Shirts	...	21.30	26.60	5.13
7. Friday	Shirts	60	19.25	21.90	2.65
8.	**Totals**	300	87.15	115.63	29.43
9.	**Average**	60	17.43	23.13	5.90

(b) State the entry for cells E6
(01 mark)
……
……

……

(c) What is the formula used to calculate the;
(i) Totals for:
(03 marks)
-units sold……
……
-selling price (sales)……
……...
-profits……
……

(ii) Average for:
(03 marks)
-units sold……
……
-cost price……
……
-selling……
.....

(d) Find entries
F5……
……

(02 marks)

C6……
……

(02 marks)
(e) State two examples of spreadsheets programs
(02 marks)
……
……
……

24. (a) Define the following terms;

(i) Internet
(01 mark)
……
……
……

(ii) Intranet
(01 mark)
……
……
……

(b) Give two differences between the Internet and the Intranet
(02 marks)
……
……
……

(c) Explain the following Internet terms:

(i) TCP
(02 marks)
……
……
……

(ii) IRC
(02 marks)
……
……
……

d) State three factors affecting computer communication over the Internet
(03 marks)
……
……
……

(e) Mention four requirements needed to connect to the internet. (04 marks)
……
……
……

25. (a) Explain the meaning of the following databases terms: (02 marks)

(i) Forms
……

……
……
(ii) Query
……
……
……

Differentiate between;
(i) A field and a record in a database
(02 marks)
……
……
(ii) Give an example of each.
-field.
(01 mark)
……
……
……
-record
(01 mark)
……
……
……

(c) How would you do the following using a word processor?
(i) Put space between sentences.
(01 mark)
……
……
……

……

(ii) Put a title/heading in the middle of a line.
(01 mark)
……
……
……

(iii) Make changes to a document
(01 mark)
……
……
……

(iv) Get a hard copy of a document
(01mark)

(d) State three differences between floppy disks and compact disks. (03 marks)
……
……
……

26. (a) Explain the following:

(i) HTML
(02 marks)
……
……
……

(ii) Website

(02 marks)

……
……
……

(iii) WWW
(02 marks)

……
……
……

(b)(i) What is a web page address?
(01 mark)

……
……
……

(ii) Give any two examples that qualify as web page Address
(02 marks)

……
……
……

(c) (i) What is the difference between a web page and an HTML? (02 marks)

……
……
……

(ii) Write URL in full.
(01 mark)

……
……

……

(iii) Outline three precautions that should be taken in a computer Laboratory.
(03 marks) …….

……
……
……

SECTION C: (20 marks)

Attempt any one question from this section. Answers to the question must be done in the answer booklet provided.

27. What are the advantages and disadvantages of Internet in business today?

(20 marks)

28. Explain briefly five advantages and five disadvantages of using computers.

(20 marks)

29. (a) What is a computer virus?
(02 marks)
(b) Explain how computer viruses are spread?
(18 marks)

SOLUTIONS TO UNEB P840/1- 2002

SECTION A:

1. C	**2. C**	**3. A**	**4. D**	**5. B**
6. C	**7. C**	**8. A**	**9. B**	**10.D**
11.C	**12.A**	**13.D**	**14.B**	**15.B**
16.A	**17.C**	**18.D**	**19.B**	**20.B**

SECTION B:

21(a) What is meant by the computer generation?

Computer generation is the technological advancement which has been classified into four generations.

(b) State five differences between the first and fourth generation of computers.

First generation		**Fourth generation**	
1.	Vacuum tubes for internal operations.	**1.**	Large-scale and very large scale integration for internal operations.
2.	Magnetic drums for primary memory	**2.**	SDRAM chips for primary memory
3.	Limited primary memory.	**3.**	Pentium IV have a minimum of 128MB of memory.

4.	Heat and maintenance problems punched cards for input and output.	**4.**	Four generation computers have internal fans to cool the CPU and send out the warm air. And Input and Output is done using keyboards and screens for output.
5.	Low input processing speed and reality.	**5.**	Four generation computers have high speeds of processing ranging from 2.0 MHz to 3.0 MHz.
6.	Increase use of high-level languages.	**6.**	A variety of high level programming languages and OOP languages.
7.	Programming system.	**7.**	Fourth generation computers need no special language for each processor.
8.	No operating system.	**8.**	Fourth generation computers have a variety of operating systems (Windows. Linux. UNIX. Etc).

(i) Define Digital computer?

Digital computers are so classified because they process data that is

represented in form of discrete values. (discrete values are numbers that

can be defined like 1,2,3, 4, etc)

ii) Give two main differences between digital and analog computers.

Digital computers		**Analog computers**
Process data in discrete form.	1.	Process data in continuous form.
Not continuous (discrete) pulse.	2.	Continuous voltage.
Can only have one of two voltage levels.	3.	Can have any voltage levels.
Voltage jumps between levels	4.	'Wavy' voltage as time progress.

(d) (i) What is computer hardware?

-These are physical pieces of equipment comprising of electronic and electromechanical parts of the computer.

(ii) List five examples of hardware devices.

- Input hardware (keyboard, mouse)
- Storage hardware (CPU)
- Storage hardware (primary – RAM, Secondary storage- Hard disk, floppy Diskettes, compact disks)
- Output hardware (printers, plotters screens)
- Communication hardware (modems, cables,

- fax modems etc)

22. (a) Write DOS in full.

DOS – Disk Operating System.

(b) State four differences between DOS and Windows

DOS- Command line interface		**Windows – Graphical User Interface**	
1.	A command-Line interface takes up little memory and normally does not require a very fast processor.	**1.**	Graphical user interface needs or requires more memory as well as a faster processor.
2.	Operation is fast because commands can be entered directly through the keyboard.	**2.**	Operations in a window env't depend on the powerfulness of the processor o/s started with 80486 processor win 3.1.
3.	Many commands can grouped together as a batch file so that repetitive tasks can automated	**3.**	It is difficult to automate functions for expert users.
4.	Commands have to be memorized.	**4.**	Graphical user interface is user friendly because it is easy to learn and work with.
5.	Commands have to be memorized.	**5.**	Commands need not to be memorized b'se the commands are represented in icons and

			pictures.

c) (i) Define an application Software.

Application software refers to programs that perform specific tasks for users.
Most applications software is available as packed software that can be purchased in retail stores or on the web.

(ii) Give any two distinctions between word- processing and Desktop publishing.

-Word processing software, also known as a word processor, is used to create, edit, format, save and print documents that contain text and graphics.
Text editors are simple word processors and are generally used to type without ant special formatting. However, the advantage is that the document can be saved, retrieved and modified at all. Text editors are mainly used to write small notes, memos and programs.

- Desktop publishing software (DTP) software is used to design and produce complicated documents that contain text, graphics, and brilliant colors.

- DTP software is ideal for the production of high –quality color documents such as news letters, catalogs, textbooks, and annual reports. Popular DTP software include **MS Publisher, Adobe PageMaker, Adobe In Design, QuarkXpress and Broderbund, printshop pro.**

-DTP combines word-processing and graphics to produce high quality documents with a laser printer. Components of a desktop publishing system – these include a powerful microcomputer, graphics display, mouse, laser printer, scanner and desktop publishing software such as **page Maker, Microsoft publisher, print shop pro etc.**

Advantages of DTP software over word processors include;
-DTP software is specifically designed to support page layout, which is the process of arranging text and graphics in a document on a page-by-page basis.
-DTP software includes colors libraries to ensure that colors will print exactly as specified.
-DTP software supports colors separation for producing the master copies used in the final presswork.
(d) State four uses of a word processor.

It can be used to create;

- Letters
- Memos
- Reports
- Mailing Reports

23.(a)What is the meaning of the following terms?
Work sheet :
-A worksheet is one sheet in a spreadsheet worksheet workbook. Each worksheet consists of 256 columns and 65,536 rows. (For MS Excel)
Active cell:
-A cell is the intersection of a row and a column. Each cell has an address that consists of the column letter and row number

(A1, B3, C5, and so on).
-An active cell is where the pointer is situated in that particular moment.

The spreadsheet below shows sales of a second hand cloth store in a given week. Answer questions. (b) to (d) on the spreadsheet.

A	B	C	D	E	F
1.		**SECOND HAND-CLOTH STORE**			
2. Day	Dept	Units sold	Costs Price ($)	Selling Price ($)	Profit ($)
3. Monday	Shirts	46	16.50	20.00	3.50
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6. Thursday	Shirts	...	21.30	26.60	5.13
7. Friday	Shirts	60	19.25	21.90	2.65
8.	**Totals**	300	87.15	115.63	29.43
9.	**Average**	60	17.43	23.13	5.90

(b) State the entry for cells E7 It is **21.9**

What is the formula used to calculate the
(i) Totals for:
-units sold =SUM (C3:C7)
-selling price (sales) =SUM (E3:E7)
-profits =SUM (F3:F7)
(ii) Average for:

-units sold =AVERAGE (C3:C7)
-cost price =AVERAGE (D3:D7)
-selling

Find entries:

(i) F5 =F8-(F7+F6+F4+F3)
OR =SUM (F3:F7)-(F6+F5+F3+F3

(e) State two examples of spreadsheets programs.

- Microsoft Excel
- Lotus 1-2-3
- Quattro pro
- SuperCalc

24. (a) Define the following terms:

(i) Internet

The Internet is a worldwide collection of networks linked together.

(ii) Intranet

-Intranet is a small version of the Internet used within an organization, (It's a LAN which covers a small geographical area e.g. University or a hospital).

-Intranet uses TCP/IP protocols, supports multimedia Web pages, and is accessible via a Web browser.

Information accessible to employees and facilitates working in groups.

(b) Give two differences between the Internet and the Intranet.

-The Internet is a worldwide collection of networks linked

together. Intranet is a small version of the Internet used within an organization.

(c) Explain the following internet terms:
(i) TCP- Transmission Control Protocol.

FTP (File Transfer Protocol) is an Internet standard that allows users to upload and download files with other computers.
An **FTP** Server is a computer that allows users to upload and download files using FTP.
An **FTP** site is a collection of files that reside on an FTP server.
(ii) IRC- Internet Relay chatting.

-A chat room is a location on an Internet server that permits users to chat with each others by typing lines of text on the computer.

Some chat rooms voice charts and video charts.
To start a chat session, a user must connect to a **chat server** through a chat client program on his or her computer. Most web browsers also include a **chat client.**

(d) State three factors affecting computer communication over the Internet.

(i) Transfer rate is the speed of transmitting data and information.

Transfer rates are usually expressed in **bits per second (bps), Kilobits per second (kbps), or megabits per second (Mbps).**

(ii) The transfer rate of transmission medium depends on the medium's bandwidth and its speed.

The following factors also contribute to the transfer rate or speed of a network**.**

(i) Network topology- Since data travels in both directions in a bus network, if data collides, then it has to be sent again, and slow the network down. On the other hand, star networks have fewer collisions and usually run faster.

(ii) Capacity of hardware – Hubs, switches, and network interface cards have their own maximum speeds.

(iii) The server – Amount of RAM and the speed of the hard disk.

(iv) Location of software and files - Storing software on the workstation hard disks reduce network traffic and speed up performance.

(e) Mention four requirements needed to connect to the Internet.

- **An** ISP to supply the Internet.
- A PC (Computer with a network card)
- Network operating system (an operating system)
- A browser (Internet explorer or Netscape navigator)
- Communication media (physical cables e.g. twisted pair coaxial cable or wireless communication e.g. wireless antenna, microwave infra red)
- Technical know how to configure the internet flow in your computer.

25. (a) Explain the meaning of the following databases terms:

(i) Forms

-Forms provide alternatives to tables of data entry and viewing records.

-With forms, you arrange the fields as required on the screen – you can design your form to look like the printed forms (invoices, order forms, etc) that you use.

(ii) Query

Querying, This is to use a specific set of rules (i.e. criteria) for retrieving data from the database.

-Queries are used to locate specific records within the table or ask questions to your database. You might want to extract records that meet specific selection criteria (e.g. all employees who earn above a certain amount of salary in the accounts department). When you run a query, the results are arranged in columns and rows like a table.

Differentiate between;

(i) A field and a record in a database

-**A field** is a column in a table that contains a specific piece of information within a record. (It's a piece of information in record).

-**A record** is a row in a table that contains information about a given person, product, or event. (An individual entry in a table)

(ii) Give an example of each.

- field FIRST NAME
- record CLAIRE

(c) How would you do the following using a word-processor?

(i) Put space between sentences	**SPACE BAR**
(ii) Put a title/heading in the middle of a line	**CENTRE**
(iii) Make changes to a document	**EDIT**

(iv) Get a hard copy of a document **PRINT**

(d) State three differences between floppy disks and compact disks.

Floppy diskette		**CD disc**	
1.	Storage capacity 1.44 MB	1.	Storage capacity 640 MB
2.	Access speed is slow compared to CD.	2.	Access speed is faster compared to floppy discs.
3.	Not durable.	3.	Durable if kept under the right conditions (no heat, dust, moisture and scratches)
4.	Can not handle multimedia because of access time.	4.	Popular in storing multimedia

26. (a) Explain the following terms;

(i) HTML.

-**HTML** is one of the main languages used to create web pages for the internet or intranet. This language allows programmers to compose text (also known as ASCII) data, pictures, sound, and animations video for screen display.

-It also allows programmers to add attachments to uniform resource locators (URLs) which enable the linking of different web pages to other pages on the internet.

-Markup tags tell the internet browser that the file contains HTML coded information and is distinguished by file extension of HTML or .HTM.

(ii) Website

-A Web site is a collection of related Web pages.

-Each of the documents on the Web is called a **Web page**.

-A web page can contain text, graphics, animations, audio, and

video (i.e. multimedia elements), as well as
built-in connections called hyperlinks, to other documents.

(iii) WWW.
-The **World Wide Web (WWW),** also called the Web, consists of a worldwide collection of electronic documents.
-A system of Internet server that support the Hypertext Markup Language documents.
(b) (i) What is a web page address?
The **Uniform Resource Locator (URL)** is the unique address of a Web page.
-The URL tells the browser where to locate the Web page
-A URL consists of a protocol, a domain name, and sometimes the path to a specific Web page or location on a Web page.
(ii) Give any two examples that would qualify as web-page address.
http://www.mak.ac.ug/cit
http://www.yahoomail.com
http://www.google.co.ug

(c) (i) What is the difference between a web page and an HTML?

-HTML is one of the main languages used to create web pages for the internet or intranet. This language allows programmers to compose text (also as ASCII) data, pictures, sound, animations and video for screen display.
It also allows programmers to add attachments to Uniform Resource Locators (URLs) which enable the linking of different web pages to other pages on the internet.
-A Web page can contain text, graphics, animations, audio, and

video (i.e., multimedia elements), as well as built-in connections, called hyperlinks, to other documents.
-A Web site is a collection of related Web pages.
-A home page is the starting page or a table of contents for a Website, and normally has a name called index.htm or index.html.
-Web page authoring software can also be used to create more sophisticated Web pages.
-Web page authoring software is specially designed for creation of web pages that contain text and multimedia elements.
-Some Web page authoring software also includes the cap i.e. organizing, managing, and maintaining websites.
-Popular webpage authoring software includes **Microsoft Frontpage, Macromedia Dream weaver, and Adobe pagemaker.**
-HTML is one of the main languages used to create web pages or the Internet. This language allows programmers to compose text (also known as ASCII) data, pictures, sound, animations and video for screen display.
-It also allows programmers to add attachments to uniform resource locator (URLs) which enable the linking of different Web pages to other pages on the Internet.
-HTML is a collection of platform-independent styles indicated by markup tags.
-Markup tags tell the internet browser that the file contains **HTML** coded information and is distinguished by file extension of **HTML** or .HTM.
(ii) URL in full - Uniform Resource Locator.
(iii) Outline three precautions that should be taken in a computer Laboratory.

Like all electronic equipment, microcomputers need to be

serviced regularly to maintain their operability. Some of the measures that should be taken are:

- Switch on your computer hardware system starting from the wall socket switch, UPS, or stabilizer, computer then printer.
- Avoid making connections when the computer is on power e.g. keyboard connections, mouse, printer, monitor etc.
- Avoid abrupt switching off and on of the computer system. Use the normal way of shutting or closing down all the programs then shut down the computer from the start button.
- Place the microcomputer in a dust free environment with good ventilation. Dust covers should be used to cover the microcomputer when not in use and if you are using the polythene covers then do not cover the computer immediately after switching off as it will trap heat.
- The microcomputer should not be exposed to direct sunlight.
- Foods or drinks should not be allowed near the computers.
- The computers should be regularly serviced, at least once a year, or more frequently if the environment is dusty. The service should normally include blowing the dust from the system unit, cleaning the floppy drives, keyboard, including all the computer equipment regularly with a wet cloth. Make sure you don't drop water in the computer system. If water drops in accidentally do not use the computer immediately until water has completely evaporated.
- Do not open the computer for inside cleaning, this should be handled by a qualified personnel.
- It is a good practice to keep record of the daily condition in case of computer failure.
- The peripheral devices, such as printers and mouse, should

be regularly serviced.

- The floppy disks used for installation of programs and backups should be kept safely in disk banks, and kept away from sunlight and magnetic media.
- Floppy diskettes have to be write-protected when writing on the diskettes if they are used for backup.
- In areas where the power fluctuates, it is important to use either a stabilizer or uninterruptible power supply source (UPS), to ensure a steady input power to the computer system.

Software care

The vital part of a computer system is the data. In fact data is expected to a number of risks and great care be adopted to protect against them. The risks to data are:

- Accidental loss.
- Accidental damage or corruption.
- Theft.
- Deliberate damage or corruption.
- Authorized disclosure.

To guard against these risks, the operator must make sure that:

- Backup copies of the data regularly made. Before backing make sure that the data is error free otherwise you might take up a back copy of a corrupted data.
- Minimize the number of visitors to your computer installation and do not allow any one to your server except the network administrator.
- Avoid diskettes coming from different installations as your system might contract viruses.
- If you have unwanted printouts, please destroy them because data is not supposed to fall in unauthorized hands.

- Save data regularly as an abrupt power cut off may corrupt your data, if you have no UPS.

SOLUTIONS TO SECTION C (20 marks):

27. What are the advantages and disadvantages of Internet in business today?

(20 marks)
Amazon is an example of a company doing all its business over the Internet, selling books, music, videos and more. Log on by typing in the address www.amazon.co.uk and you will see a screen showing the Amazon website.
Once you have purchased anything from Amazon, they use this information to suggest other purchases that you might like or, as on the website. Also offer you the chance to sell products back once you have finished with them!

Advantages to business.
- For a business such as Amazon, this way of doing business has numerous advantages.
- There is a huge saving on overheads: no costly warehouse space, rent, heating or employment facilities.
- The 'virtual shop' can stock every one of the 15,000 or so CDs produced in the year (a one stop music center for all the music) whereas a conventional store would stock only between 10-20,000.
- The shop has arrangements for 'Just in Time' delivery from its suppliers, so does not get left with books and CDs which it can not sell.

- It is a valuable market research tool- a list of customers' names and address, purchases like dislikes and suggestion can be built up at absolutely no cost and used to improve the service provided.

Advantages to customers

There are advantages to the customers, too they can:

- Visit the shop without having to leave home, at any time of the day.
- Hear snatches of a song before deciding to buy;
- Shop without being jostled by crowds, having to listen to music that is not to their taste.

Amazon estimates that the proportion of visitors to offer site who make purchase is much higher than for those who respond to a direct mail shot. Many of their customers return to make further purchases.

A company which operates like this in Uganda is Trueafrican.com which also deals in selling Uganda Music online.

The drawbacks of online commerce (Disadvantages of using Internet for business)

Inevitably, there are drawbacks to buying goods online.

- For one thing, there are worries about the security of giving a credit card number over the internet.
- It is possible hackers could retrieve thousands of credit card numbers and use them to order goods.
- Secondly, when companies post up information about new products and services, it is not their customers who will visit the site-competitors will also be regular visitors, indulging in a little industrial espionage to make sure they don't get left behind.

- Thirdly, because internet sites can be accessed from all over the world, companies have to be aware of the laws regarding data protection in every country. Different countries have different laws regarding the holding and passing on of personal information about individuals. Several companies have experienced problems with people who have set up websites using their own company's trademark. They then demand large sums of money for web address, or collect card numbers from unsuspecting visitors to the site.

Computers have also brought negative impacts on society, which include amongst others;

- Moral degradation – One finds the youth spend most of the time glued on the Internet watching moral degradation pictures movies etc.
- Amongst the friends they find on the net some have quire morals like lesbians, cuts, hackers etc.
- Computers have also affected our sights a bigger percentage of people who have been working with computers for years are now putting on glasses to support their sight and computers emit rays and heat which is not environmentally friendly to the surrounding and may be hazardous to human.
- Computers also consume power although now modern computers consume less power.
- Computer training and repair is very expensive and experts are few.
- Internet is good for communication but incase of a virus it can spread to millions of computers just in seconds.
- Hackers who usually work in groups can easily access and corrupt data records. Therefore computer owners must protect their computer systems, probably with some sort of passwords

or a ‘firewall’ which to a layman is not easy because this is beyond their understanding.

- Hire rate of forgery people use high quality printers to try and fake money notes and reports.
- Incase of the systems breakdown a lot of information may be lost which might be very disastrous to the organization.

Other advantages of using Internet include:

- **Business –to – Business**

One of the major growth areas on the Internet is trading between business- for example distribution and delivery of manufactured goods. International carriers can make huge savings by taking orders over the Internet, and customers can not only make savings but also get online information about exactly where their goods are, and when they are delivered.

- **Finding new suppliers**

The internet is increasingly being used by business to find new suppliers of goods and services. Japan Airlines, for example, has used the Internet to post orders for in-flight materials such as plastic cups must carry) in order to solicit business from any firm that comes across its site, rather than the usual Japanese suppliers.

Other interesting topics on the net include the following:

- **Virtual Learning**

Virtual learning via the internet and electronic mail are the latest addition to a category called distance learning which has been dominated correspondence classes through traditional postal mail. Instead of packing a briefcase and rushing off to school or

college, students are logging on to the internet to attend classes.

The major advantages of virtual learning are;

- Distance education, flexibility to those working full time and extra revenue for the virtual school.
- Online courses provide another avenue of revenue to schools. Virtual learning is ideal for students who work full-time because they can work at their own pace and in their own time.
- A learning institution gets students that they wouldn't otherwise have got because they don't have the time to sit in a classroom because of work or travel or whatever.
- Open Universities or Distance Learning Schools are of great help to many overseas students and now boast the largest number of University students. There are constant enquiries to these Universities about availability of virtual courses being offered.

❖ **Books**

-In the developing world, most schools lack libraries and where they are available, they lack relevant and up-to-date books and teachers or lecturers. Internet is giving these countries a new lease of life of being able to have access to current and up-to- date reading text for instructors and students.

❖ **In-service Training for Teachers or Lecturers**

Lack of in-service for teachers of lecturers have contributed to low-quality education in many developing countries. Internet will enable teachers or lecturers have access to reference materials and self natured "in-service" training to equip them with new technologies and up-to-date skills.

❖ **Research Journals and Research Literature.**

Internet allows one to have access to libraries and databases. A research projects of common interest, able to review numerous journals and relevant up-to-date literature required for his or her area of research.

❖ **Joint Research.**

Internet is increasing co-operation efforts in selected joint research projects of common interest, especially on basic technology. For example, use of telematic technologies in the field of telemedicine in the fight against major health scourges such as Aids.

❖ **Health**

Internet provides daily news about health care as well as a number of health resources. Nutrition, fitness and health information for just about everyone is provided. You will also be able to locate a physician or a specialist and family doctors through the internet.

Internet today allows for access to otherwise inaccessible or prohibitively expensive foreign expertise or labour and makes it possible for hospitals in one country to use consultants or even surgeons on another country, there by reducing traveling for patients, businessmen and professionals. Internet also allows everyone to have access today to first-hand information on the latest development on medical research and drugs. For example, you can be updated on the currently available therapies on the HIV/AIDS epidemic.

In rural areas, telemedicine is now effectively used by assistant Clinical Officers in the rural areas to seek expert assistance from their experienced colleagues or consulting Doctors in the urban centres.

❖ **News and Information**

Internet allows you to get headlines and in-depth stories on everything from the latest political progress, to the hottest technology from Silicon Valley. By connecting to the Internet, you will have access to a variety of news collections that include CNN Interactive, News link, major newspapers, periodicals and magazines.

❖ **Sporting News**

Internet allows you to the news and scores as they happen in sports. It is possible to obtain particular sporting information by specifying such information on your query. For example, in-depth information found in the Internet provides sports fans with statistics on their
favourite teams and players.

▪ **Online Shopping**

Internet allows you to browse online shopping at your leisure, and get your shopping done fast, without ever leaving your home. You can use the Web-based shopping to Back-to-School shopping. Redecorate the bathroom, build a doghouse, or get a jump on your Christmas list, all without the hassle of going to the mall.

▪ **Online Banking**

Internet enables you to check your bank statements from home, instead of going to the bank and lining up
over 30 minutes only to be told that you have nothing in your account. It also allows you to remit and transfer funds from home.

- **Travel Arrangements**

Internet allows you to book holidays, hotels and flights from your home. You can check out the latest travel news and confirm train and ferry times before you set out. There are several facets of travel on the Internet whether it is by land, air or sea. Suggestions and tips on accommodation, dinning, culture, entertainment, tours, sports, public, transit, weather, money, maps and airport information (to name a few) for anywhere in the world are all at hand.

- **Software Downloading**

There is a large variety of software on the Internet that users can download and use. Most of the software available for downloading is public domain software (free). This is extremely helpful especially if you want new releases for ant-virus or some new software that you can not obtain locally.

- **Funding and Investment**

Many NGOS have websites where information about their activities are availed. Donors therefore have access to information on NGOS and can easily decide on an NGO to support. Similarly, Investment Promotions Councils have information on various investment opportunities in every country. Using this information, investors world-wide can decide on their investment programs.

- **Leisure Entertainment**

Internet allows you to explore restaurants and hotels guide. You can also find out the latest film releases and cinema details-even book tickets. It is also easy to stay up-to-date with music, the arts and theatre. You can also spend your free time with top

magazines available on the Internet. Internet also allows you to make new friends with similar interest via the connection Café.

- **Job opportunities.**

Internet can help you land your first job or your next job. If you are the boss, then you can utilize sites designed specifically to help you locate the perfect employee for your organization. Also available are job tips and numerous online job listing.

- **Newsgroups**

Newsgroups or discussion groups allow people to discuss and exchange information on a vast array of topics. Discussion groups range from social issues to scientific and research. An article may appear in a single newsgroup, or it may be cross-posted to many newsgroups.

- **Finding people and Organization**

One of the first things folks do when they get on the Internet is try to find relatives, friends and colleagues. Unfortunately, it is also one of the hardest things to do since there is no central directory of every one with network account. Many people change jobs or Internet Service providers frequently and that makes it even more difficult to track them down.

Various search engines and the white and yellow pages are good starting points for searching for email addresses. Yahoo search engines have a facility: Yahoo people search for telephone, email or home addresses. Online White and yellow pages can be accessed by big Yellow (an Info. Seek partner) that searches for both white and yellow page information.

28. Explain briefly five advantages and five disadvantages of using computers.

(20marks)

Since their development nearly thirty years ago, computers have now become the backbone of commercial and industrial activities, and permeated nearly every aspect of human endeavor, offices, factories, hospitals, universities schools homes, mention it etc.
Computers have had a revolution impact on industry, commerce and our social life. There can be very few people, at least in industrial countries of the world, who have never had any contact wit computers. In modern offices, computers are now routinely used for general office automation including; *text production, accounting services, client's information, desk-top publishing, stock control, point-of sales systems in Research, Business, military and Education* to mention but a few.

Industry and Commerce
Computers have made the industry and commerce generally more efficient, productive and reliable. Almost every industry or service provider uses computers in its day to day operations. It is now difficult if not impossible to manage a large organization efficiently without the use of computers. Apart from keeping track of orders and bills (transactions) for instance, computers today play a strategic role in business by defining new products and services, maintaining a competitive edge and providing new opportunities for management control. Leading companies are using computing technology as a competitive tool to develop new products and services, forge new relationships with supplies with suppliers and edge out competitors.

In manufacturing, modern industries are today equipped with production planning, scheduling and reporting computing systems that provide real time information on production. Computers are also used in inventory management, process and quality control and optimization schedules. In addition to this, computers are used to ensure that customers and suppliers share real time data about demand shipments, order status and inventory. In financial sector, the banking and insurance industries use computers to manage their large volumes of financial transactions. Other areas of application in this sector include payroll and financial modeling.

Examples of commercial applications.

- Electricity bill generation.
- Railway and railway ticket booking.
- Generation of telephone bills.
- 24 hour customer telephone complaints registration
- Wake up alarm call.
- Banking sector e.g. 24 hr customer banking automated teller machines.
- Paperless money through credit cards.
- Super markets.

❖ **Process Control**

Computers are widely being used in the production environment to control chemical and mechanical processes. These are specialized applications and each computer system constructed to do a specific job. The computer systems are designed to respond very quickly in the input measurements.

❖ **Health Care**

Medical automation offers a great assistance in the areas of automatic diagnosis, electro-cardiogram screening and monitoring. A Doctor needing specialized opinions can now easily retrieve such information from computer storage. Medical records on patients are today stored and retrieved from computers for patients' management purposes. Computers also today allow for access to otherwise inaccessible or prohibitively expensive foreign expertise or labour and makes it possible for hospitals in one country to use consultants or even surgeons in another thereby reducing traveling for patients, businessmen and professionals.

❖ **Government institutions**

Computers are used heavily in many Government ministries such as finance, and planning, Education and others to store Government records and improve the efficiency of work within the civil services. Without the use of computers, the huge number of files in Government agencies, such as, Tax departments, customs as well as utility companies such as power and lighting, posts and Telecommunications and city Councils all use computers to keep their records and produce bills and statements.

❖ **Education and research**

Computers are also widely used in education as a teaching aid, and in research institutions. With the emerging of Internet many local institutions have linked up with those big universities and libraries overseas, hence facilitating education and research. This has further led to the creation of **Virtual Universities.** Virtual Universities are universities are universities with no physical buildings for lecture rooms or halls of residence, but of

course giving the necessary lectures on the computer via the internet. Thus the term “Virtual Reality”.

In aviation computers are used for training pilots. Flight simulators monitor the control movements, made by the pilot, and the computer is used to physically change the environment, so that the pilot feels as if he were controlling an actual air craft. Scientists use computers to analyze experimental data. Engineers and architects use computers to design, test and re-design. Manual unmanned space exploration would hardly be possible without the assistance of computers. e.g.
-Process of gathering examination marks for printing mark sheets
-Writing online exams like GRE (Graduate Eligibility Test)

❖ **Communications Industry**

Computers play a big role today in every aspect of communication. In the telecommunications industry, every telephone exchange today relies on computers to switch incoming and outgoing calls. Railway corporations rely heavily on computers to co-ordinate the movement of their wagons and goods. In the airline industry, computers are heavily used in air traffic control and surveillance of airspace using radar equipment as well as for reservation purposes.
E.g. Newsreaders keep computer terminals on their desk to receive urgent and important news.
Runtime reporting as done during parliament elections or any sports events requires highly accurate results to be generated. This work is done with the aid of a computer.

❖ **Police and applications**

Computers are nowadays used greatly in fighting crime. Police are now able to keep databases on finger prints, which are automatically analyzed by computers. Also computer based face recognition and scene monitoring and analysis help the police force in leading to arrest of traffic.

❖ **Employment**

Employment opportunities in the computing industry world-wide increased by 20% during 1980's, from 3 million in 1980 to about 3.6 million in 1991. In South East Asian countries, 60% of employment opportunities are today in the computing industry.

❖ **Internet provides;**

- A speedy, inexpensive and convenient means of communication via its electronic mail (e-mail) facility. The Internet e-mail allows us to keep in touch with friends and business contacts worldwide. Messages can be sent or received 24-hours a day, 365 days a year.
- It is also possible to attach files, reports spreadsheets, productions data etc, and then send e-mail.
- In general, the communication services offered by internet include e-mail, fax and conference services described below.
- E-mail is a quick, convenient efficient and cheap way to communicate with both individuals and groups.
- Fax services offers individuals and business the option of sending faxes via e-mail; at substantial savings over conventional international fax charges.
- Chart allows a large number of people to chat amongst themselves in real time, from various locations.
- Conferencing on the web may be defined as the dynamic exchange of all kinds of information-text, graphics, HTML links

to information, audio, video, etc- in a context of structured conversations organ sated by item and allowing a participant to contribute spontaneous response to any item in the conversation. The goal of such a structure of online conversations may be decision-making, technical support, community building, project management, distance education electronic meetings and more. Nearly any goal, which people strive to reach through two-way or multi-way communication, can be the source of a dynamic application for conferencing on the web.

- Internet also allows you to have access to abundant information about just anything in the world. You will get information you need from business to education, from sports to politics, form arts to eating out- the sky is the limit. With Internet, you are hooked to instant world-wide information that you need to make accurate and informed decisions.

-Virtually any information on a topic residing anywhere in the world can be accessed from anywhere, hats off to the computer technology, which is fallout of networking with computers. Apart from these, advanced research work in the following fields has also assumed a whole new dimension with the introduction of computer into them.

- In space technology
- In the field of medical research
- In applied science and technology
- In industrial research.

The above list is growing every minute.
Computers have also brought negative impacts on society, which include amongst others;

- Moral degeneration – one finds that the youth spend most of the time glued on the Internet watching moral degradation pictures movies etc.
- Amongst the friends they find on the net some have quire morals like lesbians, cults, hackers etc.

- Computers have also affected our sights a bigger percentage of people who have been working with computers for years are now putting on glasses to support their sight and computer emit rays and heat which is not environmentally friendly to the surrounding and may be hazardous to humans.
- Computers also consume power although now modern computers consume less power.
- Computers training and repair is very expensive and experts are few.
- Internet is good for communication but incase of a virus it can spread to millions of computers just in seconds.
- Hackers who usually work in groups can easily access and corrupt data records. Therefore computer owners must protect their computer systems, probably with some sort of passwords or a 'firewall' which to a layman is not easy because this is beyond their understanding.
- High rate of forgery people use high quality printers to try and fake money notes and passports.
- Incase of the systems breakdown a lot of information may be lost which might be very disastrous to the organization.

29. (a) What is a computer virus?

Computer viruses:

-A Virus is a harmful program which when runs on a computer may alter the information, files and damage data stored in it.

-Viruses are often designed to affect, or infect, a computer negatively by altering the way it normally works without the knowledge or permission of the owner.
The spread of computer viruses is accelerated by the increased use of networks, internet and email.

b) Explain how computer viruses are spread (18 marks)

-Viruses are spread in three basic ways:

- Opening an infected file.
- Running an infected program
- Starting up the computer with an infected floppy disk.

Researchers have shown that viruses can be introduced into computer system from its sources. Some of the most common sources are:
Contact with contaminated systems – Any diskettes used on a contaminated system could become contaminated. If the same diskettes are used on another system, then the virus will spread.

Pirated Software - the use of pirated software introduces the risk that the software may be contaminated by virus code or amended to perform some other destructive function which may affect your system.
Infected Proprietary software – there have been instances of virus programs being introduced and contaminating software under development in laboratories and then being installed into diskettes containing the finished software product. Although recorded instances are still low.

Fake games – many people like playing games on computers and for the same reason games programs spread very fast. These games keep infecting systems as they installed. Such games are normally irresistible HOTSEX.EXE. this type of virus for a game to spread to
Austria, South America and Europe.

Freeware and shareware – Both freeware and shareware programs are commonly available from bulletin Board System (BBS). Generally a registered fee is requested to be sent directly to the author. Such programs should be treated with caution, and initially used in a controlled environment until it is clear that the program actually does what it is supposed to do and does not contain either virus or destructive code.
Updates of software distributed via Internet or other networks software distributed via net ware fairly obvious targets for virus programmer, as they provide a built in method for widespread and anonymous propaganda.

Types of viruses include the following;
-A boot sector virus executes when a computer starts up because it resides in the boot sector of a floppy disk or the master boot record of a hard disk.
-A file virus attaches itself to program files, and is loaded into memory when the infected program is run.
-A macro virus uses the macro language of an application (e.g, word processor or spreadsheet) to hide the virus code.
-A logic bomb is a virus that activates when it detects a certain condition.

-A time bomb is a kind of logic bomb that activates on a particular date. A worm copies itself repeatedly in memory or on

a disk drive until no memory or disk space remains, which makes the computer stops working.
-A Trojan horse is a program that hides within or looks like a legitimate program, but executes when a certain condition or action is triggered.
-A polymorphic virus modifies its program code each time it attaches itself to another program or file, so that even an antivirus utility has difficulty in detecting it.
The range of threats posed by viruses and primary impact of a virus can be broadly classified into.
Destructive viruses.

Type of destruction	**Symptoms**
Massive destruction	-Attacks the formats of disks whereby any program of damage will be unrecoverable.
Partial destruction	-Erase and modification of a specific portion of disk affecting any files stored in that location.
Selective destruction	-Erase and modification of specific files or file groups.
Random havoc	-Randomly changing data on data or in memory during normal program execution, or changing key stroke values, or data from other input/output.
Network saturation.	-Systematically using up memory or space to impede performance or cause the system to

	crash.

Non-destructive viruses

-These viruses do not cause any destruction, but are annoying. The values display messages, change display
colours, change key stroke values e.g. changing the effect of the shift/ unshift keys. And delete characters displayed on visual display.

Virus symptoms

- The presence of a virus can be indicated if one or more of the following symptoms appear on your computer. Any evidence of these or similar events should be an immediate cause for concern to isolate the PC at once and investigate.
- Unfamiliar graphics or quizzical messages appearing on screens. Programs taking longer than usual to load.
- Disk accesses seeming excessive for simple tasks.
- Un usual error messages occurring more frequently
- Less memory available than unusual
- Access lights turning on for non referred devices

(c) List five precautions that should be taken to guard against computer Virus.

To protect and avoid viruses ensure the following;

- That there is a policy to ensure the usage of computers and their protection and regulations.
- Ensure that the e-mail is from a trusted source before opening or executing any e-mail attachment.
- Install an anti-virus utility and update its virus definitions

frequently for detecting and removing viruses.

- Never start up a computer with a floppy disk in the floppy drive.
- Scan all floppy disks and files for possible virus infection before opening them.
- Set the security level for macros in an application so that the user can choose whether or not to run-potentially unsafe macros.
- Write-protect the recovery disk before using it.
- Backup important files regularly.

-An antivirus utility is a program that prevents, detects, and removes viruses from a computer's memory or storage devices.

Software antivirus guards include the following:

One popular antivirus program is **Norton Antivirus,**
Others are: F-secure, MCaFee antivirus, AVG, kaspersky Internet security. Etc

- An antivirus utility scans for programs that attempt to modify the boot program, the operating system, and other programs that are normally read from but not modified.
- Antivirus utilities normally look for virus signatures to identify a virus. A virus signature, or virus definition, is known as specific pattern of virus code.
- Users of antivirus utilities must update the virus definition files as often as possible to ensure that such files contain patterns for newly discovered viruses.
- However, a polymorphic virus modifies its program code each time it attaches itself to another program or file, so that even an antivirus utility can not
- detect it by its virus signature.

- Antivirus utilities may also detect viruses by inoculating existing program files.
- To inoculate a program file, the antivirus utility records its file size and file creation date in a separate inoculation file, and uses this information to detect if a virus has altered the inoculated program file.

However, a stealth virus infects a program file, but still reports the size and creation date of the original uninfected program.

- If an antivirus utility cannot remove the virus, it often quarantines the infected file in a separate area of a hard disk until the virus can be removed.
- Most antivirus utilities can create a recovery disk to remove or repair infected programs and files (e.g. boot sector virus).
- In extreme cases, a hard disk may need to be reformatted to remove a virus.
- A backup is a duplicate of a file, program or disk that can be used if the original is lost, damaged, or destroyed.
- Files can be restored by copying the backed up files to their original location on the computer.
- Backup copies should be kept in a fireproof and heatproof safe offsite.

Paper 1
Oct./Nov.2003
2½ hours

1. Which of the following best describes a computer?
A. A machine
B. Electronic device for input
C. Electronic device for input and processing
D. Electronic device for input: processing and output

2. How many generations have computers undergone?
A. One
B. Three
C. Four
D. Five
3. Which of the following are categories of computers?
A. Analog and micro computers
B. Digital and mini computers
C. Analog and digital computers
D. Mini and micro computers
4. Which one of the following is not a set of computer peripherals?
A. Hard disk and floppy diskettes
B. Printer and modem
C. CD-ROM and magnetic tapes and wires.
D. RAM and CPU

5. What is an operating system?
A. A computer system
B. A set of logical instructions directing the computer what to do

C. Software to produce documents
D. A set of people operating a computing a computer system.

6. Which of the following is a group of operating system?
A. DOS, windows NT, Windows 95198 and UNIX
B. Lotus 123, Dbase 111, MSExcel and UNIX.
C. Sort utility, merge utility and backup utility
D. Word perfect, backup utility and DOS.

7. Which of the following procedures can be used to open an existing document?
A. Click the open button on the status bar.
B. Choose file open
C. Double click the right column border on the worksheet frame
D. Dragging the column border on the worksheet frame.

8. You can use the mouse pointer to place the insertion point anywhere in the document when it has the shape of…….

9. Which of the following is not a method of adjusting column width in a spreadsheet?
A. Format, column width command
B. Edit, column width command
C. Double-clicking the right column border on the worksheet frame.
D. Dragging the column border on the worksheet frame.
10.If the signals (##########) fill a cell, it means
A. The cell is not active
B. The formula is impossible
C. The column is not wide enough
D. You must recalculate the formula

11.Internet is defined as a
A. Combination of nets inside each other
B. Connection of a computer to a printer
C. Source of knowledge
D. Connection of computers within or over long distances sharing resources.

12.What is WWW?
A. World War Winners
B. World Wine Wines
C. World Wide Web
D. World Wide Word processing

13.Which of the following are related to database programs?
A. Procedures, slide view and record
B. File, records, filed and type
C. Record and answers
D. Slides and data structures

14.A facility in presentation that determines how a slide is removed from the screen and another is presented is known as;
A. Animation
B. Rotation
C. Transition
D. Slide show

15.The easiest way to create presentation slide is by using a
A. slide viewer
B. auto content wizard
C. slide master
D. function wizard

16.A link is;
A. bridge
B. path
C. finger
D. connection

17.What is HTML in full?
A. Hyper transfer Mark up language
B. Hyper Text Material language
C. Help to Main Line
D. Hyper Text Mark Up Language

18.Artificial intelligence is
A. the ability of computers to think and reason like humans
B. the ability of computers to do work
C. man made brains
D. making human brains

19.As computer technology advances the physical size of computers;
A. also advances
B. reduces
C. remain normal
D. Enlarges

20.Which of the following is a characteristic of fourth generation computers?
A. Vacuum tubes
B. Transistors
C. Diodes
D. Integrated circuits

SECTION B: (60 marks)

Answer any four questions. All the working must be done in the spaces provided.

21.(a) Explain the following terms in relation to e-mail:

(i) Subject:

(01 mark)

……
……
……

(ii) To:

(01 mark)

……
……
……

(iii) Cc:

(01 mark)

……
……
……

(iv) Bcc:

(01 mark)

•••……
……
……

(b) State four advantages of e-mail communication over

ordinary mail.
(04 marks)

……
……
……
……
……

(c) (i) Distinguish between Internet and e-mail(04 marks)
……
……
……
……
……

(ii) What do the following terms stand for in full;

FTP
(01 mark)
……
……
……

TCP
(01 mark)
……
……
(iii) Explain briefly the FTP service
(02 marks)
……
……

……

22. (a) Identify four tasks one can do with a computer
(04 marks)

……
……
……
……
……

(b) List any four requirements needed to set up a local area net work (LAN).
(04 marks)

……
……
……
……
……

(c) State any four functions of an operating system.
(04 marks)

……
……
……
……
……

d) List any three programming languages
(03 marks)

……
……
……

23. (a) (i) Identify three precautions a web designer should consider when
designing a web page.
(04 marks)
……
……
……
……

(ii) Why is it not good to have a lot of graphics on a web page?
(02 marks)
……
……
……

(b) List four qualities of a good web page.
(04 marks)
……
……
……
……
……

(c) Give three advantages of optic fibre cable over UTP (unshielded twisted pair)

(06marks)
……
……
……

24. (a) (i) What is an application package?
(02 marks)
……
……
……
(ii) What is a custom made package
(02 marks)
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……

(b)(i) Distinguish between custom made and off-shelf application packages.
(02 marks)

……
……
……
(ii) State three advantages of off-shelf packages
(02 marks)
……
……
……
(iii) State two disadvantages of off-shelf packages
(02 marks)
……
……
……

(c)(i) What is word processing ?
(01 mark)

……
……
……

(ii) List three word processing application packages
(03 marks)

……
……
……

25. (a) (i) What is a virus?
(01 mark)

……
……
……

(ii) Outline the four common ways in which viruses are spread
(04 marks)

……
……

(b) State four ways used to protect your computer against viruses. (04 marks)

……
……
……
……

(c) Name any three virus scanning software
(03 marks)

……
……

26. (a) State four major characteristics of the third generation computers
(04 marks)
……
……

(b) What do you understand by the following terms;
(i) Command line interface
(02 marks)
……
……

(ii) Graphical user interface.
(02 marks)
……
……
(iii) Mechanical computers.
(02 marks)
……
……
……

(iv) Give two examples of operating systems with the following:
(a) Command line interface.
(02 marks)
……
……
……

(b) Give two examples of Electro-mechanical computers.
(02 marks)

……
……
……

SECTION C (20 MARKS)
Answer only one question from this section. Answers to the question must be done in the answer booklet provided.

27. ” A world without computer is no world at all” discuss
(20 marks)

28. What are the merits and demerits of learning using Internet over using text book learning?
(20 marks)

29. Juma, a village boy exclaimed “spreadsheet programs are useless”. As a
student of computer studies, convince him otherwise.
(20 marks)

SOLUTIONS TO UNEB P840/1-2003:
SECTION A:

1. D	**2. C**	**3. C**	**4. D**	**5. B**
6. A	**7. B**	**8. C**	**9. B**	**10. C**
11. D	**12. C**	**13. B**	**14. C**	**15. B**
16. D	**17. D**	**18. A**	**19. B**	**20. D**

SECTION B:

21(a) Explain the following terms in relation to e-mail:

(i) subject: The theme of e-mail message.

(ii) To: Carries the address of the recipient.

(iii) cc: Enables copies of the email message to be sent to the third party while acknowledging other recipients.

(iv) Bcc: Enables copies of the email message to be sent to a third party without acknowledging any other recipients (if present).

(b) State four advantages of e-mail communication over ordinary mail.

E-mail has many advantages over both ordinary mail and the telephone. For example:

- A message can be sent anywhere in the world at the price of a call, without having to leave your desk;

- Speed of delivery – The message will arrive in a few minutes, and can be picked up the next time recipient looks at their e-mail.
- Ability to send to multiple recipients – the messages can be

sent simultaneously to a group of people.

- It is very easy to send a reply to an e-mail as soon as it is received, using a 'reply' button.
- Large files such as spreadsheets and graphics can be sent as attachments.
- Low cost/ cheap.
- E-mail is universal and ordinary mail one has to change addresses wherever he/she is located.
- Can be used for advertising.
- Free mail like sports can subscribe.
- Assurance of whether the mail has been delivered.
- Convenient when retrieving and delivering.
- No use of stamps.
- Send multimedia.

(c) (i) Distinguish between Internet and e-mail.

Internet is a global interconnection of computers.
While;
E-mail is a service that enables exchange of electronic messages over ICT devices.

(ii) What do the following terms stand for in full?

FTP — File Transfer Protocol
TCP — Transmission Control Protocol

(iii) Explain briefly the FTP service

FTP enables large files transfer from a client computer to a remote computer and vice versa.

22.(a) Identify four tasks one can do with a computer

- E-mail communication
- Word processing
- Spreadsheet Application
- Statistical analysis
- Entertainment.

Others are:

- Saving
- Printing
- Storing
- Manipulating data
- Study guides

(b) List any four requirements needed to set up a local area network (LAN)

- Hub or switch
- Communication media (wireless, wires-twisted pair, coaxial, optic fibre etc)
- Computers
- Routers
- Computers with Network cards. (NIC)
- Networking operating system software.
- Power to run the system.

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

- Memory Ma nagement

- Process Management
- Device Management
- File Management
- Acts as an interface between the computer user and the computer
- Schedules jobs etc

(d) List any three programming languages

- Pascal
- BASIC
- COBOL
- Java
- FORTRAN
- C+, C++
- Small Talk

23. (a) (i) Identify three precautions a web designer should consider when designing a webPage?

- Precious content
- Use minimal graphics
- Consumer requirements
- Copyright consideration
- Take into account versions of client browsers
- Avoid use of frames.

(ii) Why is it not good to have a lot of graphics on a webpage?

- It may take too long to load
- Client computer may support different colour depths

- Takes a lot of space

b) List four qualities of a good web page.

- Should load quickly
- Should have feed backs
- Should have web page title and a brief summary about the page.
- Should have links (references) to other resources.
- Should have date of last update
- Should have good navigation buttons.

(c) List four qualities of a good Webpage.

- It is more resistant to external interfaces e.g. Noise
- It transmits more data –supports large band width
- The signal is not attenuation (i.e. signal strength remains constant)
- Faster data transmission

24.(a) (i) What is an application package?

-Application package is a user software program to accomplish a given task.

(ii) What is a custom made package?

-A Custom made package is an application program designed to meet a client's particular needs.

(b) (i) Distinguish between custom made and off-shelf

application packages.

-A Custom made programs are developed to meet particular needs for end User's where as off-shelves are of general nature and solve needs which are common in nature e.g. word processing, spreadsheets etc;

(ii) State three advantages of off-shelf packages.

- Better documentation
- More standardized
- Larger number of users
- Fewer modifications
- Relatively inexpensive
- Readily available
- They can be customized
- Have less errors

(iii) State two disadvantages of off-shelf packages

- Lock in to software vendor
- Inflexibility in the application package

(c) (i) What is word processing?

It is a process where text is manipulated to form documents, and reports.

(ii) List three word processing application packages

- Ms Word
- Word perfect
- Word Star
- Lotus Ami-pro

- Word pad

25(a) (i) What is a virus?

-It is a program that copies itself onto files or programs and destroys software and the entire computer system. (Or causes un desirable effects).

-Viruses are often designed to affect, or infect, a computer negatively by altering the way it normally works without the knowledge or permission of the owner.

(ii) Outline the four common ways in which viruses are spread.

Computer Viruses are spread in the following ways:

- Opening an infected file
- Running an infected program
- Starting up the computer with an infected floppy disk
- Use of the infected diskette
- Through e-mail/internet
- Use of infected hard disk
- Through freeware /shareware

(b) State four ways used to protect your computer against viruses.

- Discoursing use of external diskettes
- Installing up-to-date antivirus program versions
- Scanning all downloads with updated anti-virus

- Ensure that the e-mail is from a trusted source before opening or executing any e-mail attachment.
- Educating the user about how they affect us
- Educating the organization and making policies for users to follow.
- Install an antivirus utility and update its virus definitions frequently for detecting and removing viruses.
- Never start up a computer with a floppy disk in the floppy drive.
- Scan all floppy disks and files for possible virus infection before opening them.
- Set the security level for macros in an application so that the user chooses whether or not to run potentially unsafe macros.
- Write-protect the recovery disk before using it
- Backup the important files regularly.

(c) (i) Name any three virus scanning software

- Norton antivirus
- NOD32
- Thunder byte
- AVG
- F-secure
- Kaspersky Internet security

(ii) State three symptoms of viruses.

- Computers may freeze computers may not start at all (or boot)
- Computers may be rude or display irritating messages
- Corrupted files.
- A computer may fail to solve or accessing a file to save
- Failure to do print jobs.

26 (a) State four major characteristics of the third generation computers.

- The third generation computers used integration circuits (ICS) which are made by combining several transistors together Integrated circuits or IC semiconductor devices with several transistors built in one physical component.
- Magnetic Disk was developed during this period for storage purposes.
- Computer memory expanded to two mega bytes of RAM.
- Speed accelerated to 5 million instructions per second (5 MIPS).
- This period also saw the production of the first micro computers (in 1974)
- Use of parallel processing.
- Monitors, keyboard for input and output.
- Operating systems of O/S e.g. multics
- Introduction of simple programming languages like BASIC.
- Low cost high reliability, small size, and low power made computers popular.
- The third generation computers consisted of fast mainframe.
- Computers such asIBM360, IBM370, PDP-11etc and 8 bit micro computers.
- Examples: PDP-1 (which sold for the low prices $120,000) and IBM 360 series.
- Development of micro processors. (8008, 80286 etc)

(b) What do you understand by the following terms?

(i) Command line Interface

-With command line interface, a user types keywords or press

special keys on the keyboard to enter data and instructions.

-Provided with a virtually empty screen with a blinking cursor (prompt) where commands are keyed in and the computer executes them on pressing the enter key.

(ii) The Graphical User Interface
-A graphical user Interface (GUI) allows a user to use menus and visual images such as icons, buttons, and other graphical objects to issue commands.

-You are provided with a coloured screen with icons each representing a program. A mouse may be used.

(iii) Mechanical Computers
Computers composed of mainly moveable parts i.e. wheels and axles.

(iv) Give two examples of operating systems with the following;
(a) Command line interface.

- UNIX
- LINUX
- Windows (3,1,95,98,2000, Win XP)
- Susie Linux
- Novel Netware

(b) Give two examples of Electro-mechanical computers.

- Mechanical calculator
- Leibniz stepped Reckoner

- Analytical Engine

SOLUTIONS TO SECTION C: (20 marks)

27. 'A world without computers is no world at all' Discuss.
(20 marks)

28. What are the merits and demerits of learning using Internet over using
textbook learning?
(20 marks)

29. Juma, a village boy exclaimed "spreadsheet programs are useless". As a
student of computer studies, convince him otherwise.
(20 marks)

27. " A world without Computers is no world at all" Discuss.
(20 marks)

Approach

- **Introduction:**

- **Definition:**

(b) Body (positive)
-Research

28.What are the merits and demerits of learning using Internet over using textbook learning?

Computer-based training, which includes;
-Computer-assisted instructions (CAI), so that teachers can use computers and other IT equipment to present teaching materials in a more interesting way.

-Computer-assisted Learning (CAA), so that students can use computers and
appropriate software to learn at their own pace.

-Computer –assisted assessment (CAA), which may reduce the time and labour to mark the answer scripts.

-Distance learning through computer-based training and We-based training.

Simulations of experiments or real-life situations that may be hazardous.

Electronic library system for searching, borrowing, and returning books.

-The **School Administration and Management System (SAMS)** for keeping records of students and producing report cards or other related documents.

-Edutainment, which is a type of educational software that combines education with entertainment.

Advantages of using IT is learning and Teaching include;

- CAI and CAL packages that usually contains multimedia

effects make learning more interesting and interactive.

- Students can learn by themselves when a teacher is not available.
- Students can learn and proceed at their own pace.
- Students can usually get their results or feedback immediately after they have answered the question or taken an action.
- There are rich educational resources on CD-ROMs and the Internet.

- Teachers can present subject matter and explain abstract concepts more clearly with multimedia.
- Teachers can show experiments that are difficult to perform or dangerous in nature through simulations software.
- Advanced instructions can be given to students in areas where the teacher may not be qualified.

Disadvantages of using IT in Teaching and Learning Include;

- Face to face interaction between students and teachers may be reduced.
- Initial investment cost of this project is not affordable by many schools.
- Students can only follow what the CAL packages are predefined to offer.
- To run this kind of project there has to be power.
- Need for trained staff to run the project.
- It does not benefit the blind and the dump.
- It also benefits schools which have trained perfectly in English accent since the CD's come in American English.

29. Juma, a village boy exclaimed "Spreadsheet programs are useless" As a student of computer studies, convince him other wise. (20 marks)

-**Spreadsheet software** is used to organize data in rows and columns, and perform calculations on the data.

-Before the advent of computers, cash flows and budgets required for business planning had to be done by hand. These days there is no excuse for not having good information.

Using spreadsheets.

- Sales can be recorded, invoices produced and statements compiled. Management can
- keep track of the current payments from customers in relations to goods dispatched.

- Regular printouts of aged debtors, that is people who have owed you money for money for more than in the period allowed in your terms of business can be detected.

- Researchers can compile and analyze their results.

- Teachers can easily create tables of figures and manipulate them quickly as required. The use of spreadsheets in our normal life is numerous.
- A spreadsheet document is often called a work-sheet.
- On each worksheet, data is organized vertically in columns and horizontally in rows.
- Each column is identified by a letter (i.e. A, B, C, D, E, F…)
- A cell is the intersection of a column and a row.

- Each cell has a unique cell address (e.g. A1, B1…) to define its location on the worksheet.
- The upper-leftmost cell is generally identified as A1.
- Each workbook may contain worksheets, charts, macro sheets, and visual basic programming modules. The number of worksheets you can create and store in a workbook is limited only by the memory within your computer.

Common editing feature include;
-Creating a document involves entering text or numbers, inserting graphics, and performing other tasks using an input device such as a keyboard or mouse.

-Editing is the process of making changes to the existing content of the document.

Inserting	When text is inserted or added to a document, the surrounding words automatically move to make rooms for the inserted text.
Deleting	When text is deleted or removed from a document, the surrounding words automatically move to fill in the gaps left by the deleted text.
Cutting	When text is cut, it is stored in a temporary location called the **Clipboard.** The original text is removed from its place.
Copying	When text is copied, it is duplicated and stored in the clipboard. However, the original text remains in place.
Pasting	When text is pasted, it is placed from the clipboard into the document.

-**Formatting** involves changing the appearance of a document
-**Formatting characters** involves changing the font, font size, or font style of text.
Formatting cells involves changing the justification or the alignment of text in a cell.

-**Formatting values** – numeric formats improve the appearance and readability of numbers in a worksheet by inserting dollar signs, commas, percentages, symbols and decimal places.

-**Format cells** give you the category of: General, number, currency, accounting, date, time, percentage, fraction, scientific, text, special and custom.

-**Formatting pages** involves changing the margins (left, right, top, bottom) or the distance between the main body of text and the edges of the paper.

-Inserting of page numbers, headers and footers.
Undo which allows actions that have been performed to be reversed, such that if some text was accidentally deleted, then the action can be undone.

-**Saving** is the process of copying a document from the memory to a storage medium such as a floppy disk or hard disk.

-Any document that has been saved exist as a file, which is a named collection of data, instructions or information.

-Each file has a file name.
Any document can be **saved as** a new file with another file

name.

Popular features of spreadsheet programs include;

Ability to perform what if analysis	-Allows the user to perform what if analysis which can be used to find out effects of performance of companies.
Solver facility	-Allows the user to use a solver facility that helps uncover the best uses of scarce resources so that desired goals such as profit to be maximized or undesired goals such as cost can be minimized. It can be used to answer such questions as 'what product price or promotion mix will maximize profit' or how can I live within the budget?
Charting	-Allows a user to display data in a graphical, rather than a numerical form.
Macro	-Allows a user to record or save a sequence of keystrokes or instructions that can be run later.
Context sensitive commands	-Spreadsheets allow you to access **context-sensitive commands** on a shortcut menu by pointing at an item such as a cell or chart, with, with a mouse pointer and clicking the right mouse button. You no longer have to search for commands in the menu bar.
Recalculation	-Recalculates the rest of the worksheet whenever data in a worksheet changes (a valuable tool for **what-if analysis**)

Charting allows a user to display data in a graphical, rather than a numerical form.

-Popular chart types includes;
Lie charts, which are effective for showing a trend over a period of time.

Bar charts, which display bars of various lengths to show the relationship of data.

Pie charts, which have the shape of round pies cut into slices, and are best used to show the relationships of parts to the whole.

-Popular spreadsheet software includes **Microsoft Excel, Lotus 1-2-3, Corel Quattro Pro, VisiCalc and superCalc.**

-Advantages of spreadsheet of software over manual worksheet include;

- Easy to make changes and corrections to data on the worksheet.

- The rest of the worksheet is recalculated whenever data on a worksheet changes.

- Operation is fast with the help of built-in functions and macros.

- Calculation is always accurate, provided that data and formulae entered are correct.

- Easy to create different kinds of charts, or to change chart types.

Built in functions	-Allows the user to use functions to add, multiply, percentage, counting, and basic statistical functions.
Adjusting columns	-Allows the user the ability to adjust columns.
Data sorting	-Allows the user the ability to sort data accordingly.
Data validation	-Allows the user to ensure that correct data is entered in the spreadsheet.
Printing	-Allows the user to print the entire worksheet, portions of a worksheet and several worksheets.
Templates and wizards	-Allows the user to use the basis of other similar workbooks. This means that all the formulas and formatting for similar invoices can be saved as templates and then used to automate a task without having to create the new workbook again. E.g. business planner, loan manager, expense statement and purchase order.
Summarizing data	-Allows the user to summarize data using consolidation and pivot tables. Consolidation allows the merging of several workbooks into a summary sheet.

-Information on charts is updated automatically whenever

related data on the worksheet changes.

Some additional advantages of using electronic spreadsheets are these;

- Electronic spreadsheets are much larger than manual worksheets. While manual worksheets are limited by paper size, electronic spreadsheets typically contain hundreds of columns and thousands of rows. This expansive area allows you to keep related information together and to produce reports that are larger than a normal report.

- Electronic spreadsheets can perform mathematical, statistical, and financial calculations quickly and accurately. The primary use of a spreadsheet is to calculate formulas, such as 600+460, that are entered into its cells.
- Cells in electronic spreadsheets can use information from other cells. A formula may consist solely of numbers or it may refer to other cells in the spreadsheet. Rather than entering the values 600+460, a formula can reference the cells in a work sheet that contain these numbers. With a manual worksheet, changing a single number can mean hours of extra work in recalculating figures. Changing a number in an electronic spreadsheet, however immediately produces a ripple effect of recalculations for all formulas dependent upon that value.

- Electronic spreadsheets can be stored and retrieved for repeated use. You can permanently save electronic spreadsheet onto diskettes, hard disks, or other types of media for safe storage. Rather than searching through endless filing cabinets for handwritten worksheets, you can use your computer's

electronic filing system to retrieve files instantaneously. An electronic spreadsheet can be retrieved, edited, updated, printed, and then saved under a new name quickly and easily.

UNEB PAST PAPER P840/1- 2004.

SECTION A. (20 marks)

Attempt all questions in this section.

1. The following is a group of processors
A. 80284, 80486, Pentium O, Pentium 1.
B. 80286, 80486, Pentium 1, Pentium 11.
C. 1286, 1486, Pentium o, Pentium 11.
D. 1286, 1486, 80286, 80487.

2. What is information technology?
A. It is a central processing system unit and monitor.
B. It is the tangible components of a computer
C. It is all the types of equipment and programs used in processing.
D. It is the combination of software and programs.

3. Which of these does not fully represent computer classification by function?
A. Mainframe, Micro, mini computers
B. Mini, personal, analog computers
C. Digital, mainframe, Micro computers
D. Personal, analog, micro computers.

4. Which drive letter usually represents the hard drive?
A. A
B. B
C. C
D. D

5. Which one of these became used commonly in offices in the third generation of computers?
A. Mainframe
B. Anemometer
C. Super computer
D. Micro-computer.

6. What is the function of a MODEM? It:
A. Blocks digital signals from leaving the computer
B. Converts digital signals to analog and vice versa.
C. Converts analog signals to the atmosphere
D. Modulate digital signals to mechanical motions

7. Back up refers to;
A. Storage of files on a secondary storage device.
B. Taking in data for rearrangement in order.
C. Programs designed to check specific parts
D. Combining data from more than one file.

8. Which one of the following is not an operating system?
A. Windows 3.1
B. DOS version 6.22
C. UNIX
D. Microsoft word.

9. Formatting in word processing refers to;
A. preparing a new floppy diskette for use
B. Cleaning diskettes for storage
C. Enhancing the appearance of text in a document
D. Erasing all data on a diskette.

10. The back space key;
A. Deletes any letter towards the right
B. Erases any character towards the left
C. Moves the cursor to left without deleting any character
D. Deletes a character at the cursor position

11. A workbook is a;
A. publication
B. Data type entry
C. Range of cells
D. Collection of worksheets in a single file.

12. Which of the following is not a characteristic of spreadsheets?
A. Worksheets can not be renamed
B. Can enter text, number of formula.
C. Calculations can be done on other cells.
D. Variety of operations can be carried out on rows or columns.

13.E-mail stands for;
A. Electrical mail
B. Surfing mail
C. Electronic mail
D. Browsing the net

14. A computer network refers to;
A. Information storage
B. Linking of computers for resource sharing.
C. Connecting a computer system to a backup device.
D. Sharing a computer by many people

15. In Database, a field is;
A. The way information is displayed.
B. A particular listing within a file.
C. The entire collection of data.
D. Each bit of information in a record.

16.Databases perform the following functions;
A. Sorting of slides, retrieving and formatting.
B. Formatting, organizing and retrieving pictures.
C. Creating, organizing and managing collection. of related data.
D. Entering data, saving, retrieving, and drawing graphs.

17.URL stands for:
A. Uniform resource locator
B. Universal resource link
C. An e-mail
D. Web publishing software.

18. Which of the following best distinguishes a WAN from A LAN?
A. The number of computers connected
B. Distance between connected computers
C. Model of computers connected
D. Type of operating system used in the network.

19. WWW refers to;
A. Web World Wide
B. World Words Web
C. Wild Word Web
D. World Wide Web

20. A problem that is likely to occur due to future advancement of computers is;
A. Under development
B. Under population
C. Un employment
D. Insecurity

SECTION B: (60 marks)

Answer any four questions. All the working must be done in the spaces provided.

21. (a) Write the following abbreviations in full.
(03 marks)
(i)
LSI……

……

(ii)
COBOL……
……

(iii)
BASIC……...
.....

(b) Distinguish between Main frame and Mini computers
(02 marks)

……
……
……

(c) Name two types of instructions that computers use to do their works
(02 marks)

(i)……
……

(ii)……
….....

(d) List down any five components that are part of the system unit. (05 marks)

(i)…….....
.....

(ii).....
.....

(iii).....
.....

(iv).....
.....
(v).....
.....

(e) (i) What is a CD-ROM?
(02 marks)
……
……
……
……
(ii) Mention one advantage of a CD-ROM Over a hard-disk
(01 mark)
……
……
……

22. (a) Mention any three safety security measures taken in a computer
Laboratory.
(03 marks)
(i)……
……
(ii)……
….....
(iii)……
……

(b) What is system software in a computer system?
(02 marks)
……

……
……

(c) Name three examples of system software
(03 marks)
(i)……
……
(ii)……
……
(iii)……
……

(d) Name any four functions of utility programs
(04 marks)
(i)……
……
(ii)……
….....
(iii)……
……
(iv)……
……

(e) What do you understand by the following terms?
(03 marks)
Editing……
……
Saving……
……
Troubleshooting……
……

23. (a) What is a computer spreadsheet?
(02 marks)
……
……
……
(b) Name four functions of spreadsheet software.
(04 marks)
(i)……
……
(ii)……
……
(iii)……
……
(iv)……
……

(c) List three data types of entries in spreadsheets
(03 marks)
(i)……
……
(ii)……
……
(iii)……
……

(d) Mention three types of graphs created in spreadsheets
(03 marks)
(i)……
……
(ii)……
……

(iii)……
……

(e) (i) What is a computer virus?
(01 mark)
……
……
…….....

(ii) Mention two ways in which a computer can be infected by a virus (02 marks)
(i)……
……
(ii)……
……

24. (a) Write the words below in full
(02 marks)
(i)
FTP……
……
(ii)
WAN……
……

(b) State any three factors that affect communication speed on the Internet
(03 marks)
……
……
……

(c) Distinguish between the E-mail and the Internet
(03 marks)
……
……
……

(d) What is a server?
(01 mark)
……
……
……

(e) List any two functions of a server?
(02 marks)
……
……
……

(f) Give four differences between the hard disk and the floppy diskette.
(04 marks)
(i)……
……
(ii)……
……
(iii)……
……
(iv)……
……
25. (a) What is a database?
(01 mark)

……
……
……

(b) Distinguish between Microsoft Access and Data base.
(03 marks)
……
……
……

(c) List four examples of data which can be used to create a database.
(04 marks)
(i)……
……
(ii)……
….....
(iii)……
……
(iv)……
……
(v)……
……

(d) Mention three examples of database management software.
(03 marks)
(i)……
……
(ii)……
……
(iii)……
……

(e) Give four advantages of electronic databases over manual databases.
(04 marks)
(i)……
……
(ii)……
….....
(iii)……
……
(iv)……
……

26.(a) Explain the following terms as used in presentation software. (06 marks)
Slide show……
……
Slide sorter…….....
.....
Slide layout……
……

(b) Explain the importance of presentations
(03 marks)
……
……
……
(c) Describe one function of a slide master

(03 marks)
……
……
……

(d) Outline how you would create a transitional loop?
(03 marks)
……
……
……

SECTION C: (20 marks)

Attempt any one question from this section

27. "Computers have destroyed our culture" What are your arguments for and against this statement?
(20 marks)

28. Outline what you expect the role of computers to be in future. (20 marks)

29. "Information Technology has done more good than harm to Education.
"Give your arguments in favour and against the statement.
(20 marks)

SOLUTIONS TO UNEB P840/1 -2004.

SECTION A:

1. B	2. C	3. A	4. C	5. D
6. B	7. A	8. D	9. C	10. B
11. D	12. A	13. C	14. B	15. D
16. C	17. A	18. B	19. D	20. C

SECTION B:

21. (a) Write the following abbreviations in full.

(i) LSI – Large Scale Integration
(ii) COBOL – Common Business Oriental Languages
(iii) BASIC – Beginners All purposes Symbolic Instruction Code.

(b) Distinguish between Mainframe computers and Minicomputers

Mainframe computer		**Mini computer**	
1.	Physically large compared to minicomputers.	1	Physically smaller compared to mainframe computers.
2.	Faster and more powerful in processing data.	2	Slower and less powerful in data processing.
3.	Can be connected to between 500-1000 users.	3	Can be connected to between 50 to 500 users.

4.	Used commercially and academically as an internet code.	4	Used commercially in supermarkets and bigger organizations.

(c) Name two types of instructions that computers use to do their work.

- Data signals
- Control

(d) List down five components that make up the system unit.

-Power supply
-Motherboard
-CPU or Processor chip
-RAM chips
-ROM chips
-Other forms of RAM chips-flash and cache
-Expansion slots
-Bus lines
-Ports
-PC (PCMCIA) slots and cards

(e) (i) What is a CD-ROM?

CD-ROM – Which stands for Compact Disk Read Only Memory, is an Optical disk format that is used to hold prerecorded text, graphs and sound (multimedia)

(ii) Mention one advantage of a CD-ROM over a Hard-disk.

Disks cannot be written or erased by users (stores permanently)

22. (a) Mention any three measures taken in a computer laboratory.

Three safety/security measures in a computer laboratory include:

- Dust free cover computers ventilators
- Switch on your computer hardware system starting from the wall socket.

- Avoid abrupt switching off and on the computer system.
- Avoid liquids substances like water and juices.

(b) What is system software in a computer system?

System software – set of programs software which manages the operation of the computer itself. It consists of (five or six programming languages + processors)

(c) Name three examples of system software

- Operating system (DOS, windows, Linux, Unix).
- Programming languages (+processor, Basic Fortran Cobol).
- System utilities (Antivirus– F-secure, Compressors- PKZIP).

(d) Name any four functions of utility programs.

Functions of utility programs.

-A utility program is a type of system software that performs a specific task, usually related to managing a computer, its devices, or its programs.

- **Disk defragmenter -** Examples include a Disk defragmenter which can detect computer files whose contents have been stored on the hard disk in disjoined fragments, and move the fragments together to increase efficiency;
- **A Disk checker** can scan the contents of a hard disk to find files or areas that are corrupted in some way, or were not correctly saved and eliminate them for a more efficiently operating hard drive.
- **A Disk cleaner** can find files that are un necessary to computer operation or take up considerable amounts of space. Disk cleaner helps the user to decide what to delete when the disk is full.
- **System profilers -** A system profiler can provide detailed information about the software installed and hardware attached to the computer. Back up software can make a copy of all information stored on a computer, and restore either the entire system (e.g. in an event of disk failure or selected files (e.g. in an event of accidental deletion) Disk compression software can transparently compress the contents of the hard disk, in order to fit more information to the drive.
- **Anti-Virus utility** - Virus scanners scan for computer viruses among files and folders.
- **Binary/Hex/Text Editor** – Utility directly modify the text or data of a file without the WYSIWYG view in editor suites. These files could be data or an actual program.
- **Archive utilities** – Output a stream or a single file when provided with a directory or a set of files. Archive utilities, unlike archive suites, usually do not include compression or encryption capabilities. Some archive utilities may even have a separate un-archive utility for the reverse operation.
- **File Compression utilities** - Output a shorter stream or a smaller file when provided with a stream or file.

- **Encryption** – Utilities use a specific algorithm to produce an encrypted stream or encrypted file when provided with a key and plain text.
- **Application Launchers** – Provide a convenient access point for application software.

What do you understand by the following terms?

-Editing –Correcting mistakes, formatting-improving on appearance.
-Saving – is the transferring of data information from memory to secondary ..... storage.

-Trouble shooting- Is the correcting and rectifying errors/ mistakes.

(a) What is a computer spreadsheet?

-Computer spreadsheet is the application package used for manipulating of figures. E.g. MS Excel, Lotus 1,2,3, Quarto pro, SuperCal.

(b) Name any four functions of spreadsheet software.
- Data sorting, the ability to create, edits, saves, and retrieves worksheets.
- Charting facility to draw graphics, data source.
- Templates and built in functions + formulae for adding.
- Data formatting, summering, ability to perform "what if analysis"

(c) List three data types of entries in spread sheets

- Labels
- Values
- Functions

(d) Data types of entries in spread sheets

(i) Text, numbers, date or time, general, fraction

(ii) Currency, percentage, commas
(iii) Scientific, special, custom
(iv) Text, values, numerical, functions.

(e) Mention three types of graphs created in spreadsheets.

(i) Line graph
(ii) Pie chart
(iii) Bar graph
(iv) XY scatter
(v) Area
(vi) Doughnut
(vii) Radar
(viii) Surface
(ix) 3D-piechart
(x) 3D-bar graph
(xi) Bubble
(xii) Stock
(xiii) Cylinders
(xiv) Cone
(xv) Pyramid

24. (a) (i) What is a computer Virus?

A computer virus is a harmful program which when runs on a computer may alter the information, files and damage data stored in it.

(ii) Mention two ways in which a computer can be infected by a virus.

- Receiving emails and opening email attachments
- Internet downloads
- Web pages
- Software on CD ROMs or floppy discs

(b) Write the words below in full

(i) FTP— File Transfer Protocol

(ii) WAN— Wide Area Network

(c) State any three factors that affect communication speed on the internet.

- Transmission (Frequency and Bandwidth)
- Line configuration (point to point and multipoint)
- Serial and parallel transmission (serial data transmission and parallel data transmission)
- Direction of transmission flow (simplex, Half duplex and Full Duplex)
- Transmission mode (Asynchronous versus synchronous) packet switching (Getting more data on a network)
- Protocols (the rules of data transmission)
- Type of processor

(d) Distinguish between the E-mail and Internet.

- E-mail systems allow you to send memos, letters and files containing data of all types from your computer to any other computer with e-mail address and a modem, simply by typing the recipient's name and pressing the 'send' button.

- The Internet is the largest wide area network in the world. Infact it is not a single network. They are of two types i.e. LAN and WAN.

(e) What is a server?

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

- -A **file server** stores and manages files.
- -A **print server** manages printers and print jobs.
- -A **database server** stores and provides access to a database.
- -A **network server** (e.g., a DNS) manages network traffic.

(e) List any two functions of a server?

-A server provides a centralized storage area for programs, data, and information.

-A dedicated serve is a server that performs a specific task.

(g) Give four differences between the hard disk and the floppy diskette.

25. (a) What is a database?

-A database is a collection of data organized in a way that allows access, retrieval, and use of the data.

-Common "paper databases" Include telephone books, dictionaries, recipe cards, and television guides.

-Computerized databases in Uganda include flight information phone inquiry system, and database system in the public libraries.

(b) Distinguish between Microsoft Access and Database.

-A database is a collection of data organized in a way that allows access, retrieval, and use of the data.

-Common “paper databases” include telephone books, dictionaries, recipe cards, and television guides.
-Computerized databases in Uganda include flight information, phone inquiry system, and database system in the public libraries.
Microsoft Access is one of the popular database software. Other database software include: Microsoft Visual FoxPro, BorlandPro. Corporate based systems include: SQL, Sybase, Oracle, Informix Ingress, and Progress. Etc.

(c) List four examples of data which can be used to create a database.

Computerized database in Uganda include;

- Flight information.
- Phone inquiry system.
- Database system in the public libraries.
- Database system in the Banks

(d) Mention three examples of database management software.

- Inventory systems.
- School management system (SMS)
- Library system for keeping books.
- Database for car number plates.
- Database for insurance companies.

(e) Give four advantages of electronic databases over manual databases.

Their advantages include the following:

- Reduction of data redundancy – storing most of data in one place means less duplication and less required space.

- Enhancement of data integrity- because data are centralized, fewer updating errors occur, and greater accuracy can be maintained.
- Ensured data independence – data are entered, stored, application programs. Also, changes made to data structures usually do not require changes in programs that access the data base.
- Facilities of data sharing and integration – database systems offer users the ability to combine or to cross-reference data in many different ways.
- Improvement of access to data – data systems allow users application program.
- Centralization of security – it is easier to limit access to information if it is grouped together instead of being kept in several scattered files. Many data bases must be protected and kept private.
- Reduction of costs- data entry, data storage, and the development of new application programs are made more economical. By eliminating the duplication of data, many organizations can realize substantial savings.

26. (a) Explain the following terms as used in presentation software.

(i) Slide show - the display of slides in a sequence moving from one slide to another.
(ii) Slide sorter – this is a display where slides appear in a miniature form so that they can easily rearrange them / or manipulate.
(iii) Slide layout – Refers to single slide (format and design).

(b) Explain the importance of presentations

- Used for visual aid communication.
- Used for summarizing content for presentation.
- Used for advertising.

(c) Describe one function of a slide master

-This stores all the default attributes that you wish to apply to slides Including text Formatting and positioning, background and standard graphics such as your company logo.

(d) Outline how you would create a transitional loop?

-Slides made – slides show – menu- transition submenu-transition.

-Windows – select timing – select timing – select condition-loop until escape key is pressed.

SOLUTIONS TO SECTION C:

Attempt any one question form this section.

27. "Computers have destroyed our culture" What are your arguments for and against this statement?

Destroyed crafts man ship i.e.

- Computers have taken over man's ability to execute tasks.
- Working patterns i.e. change of work schedules.
- Erosion of traditional moral values, marriage values, sex values, etc.
- Use of electronic or computer based communication systems as opposed to the traditional ways e.g. use of post offices.
- Access to un censored material as opposed to the well guarded traditional norms.

Against:
(i) Increased productivity through efficiency and effectiveness.
(ii) Improved communication i.e. widened ways of Communication (diversified).
(iii) Enhanced scientific research.
(iv) Improved on the ways of doing business.
(v) Education has been boasted i.e. offering a new set of knowledge.
(vi) Promoted inter- relationships.
(vii) Improved the process of data storage and manipulation and retrieved.
(viii) Provision of up to date information at the quickest time possible.

Note: The above points need to be explained – (these are only guide lines)

Roles of computers in the future

- **In business:** high tech management information systems transaction, etc.
- **In communication:** very fast and reliable systems (efficient). Improved peer networks etc.
- **In education;** virtual universities, very fast access to any topic, subject, electronic publications (CDS).
- **Security:** high tech security systems by providing efficient and effective protection, computer guided war fare etc.
- **Manufacturing (industries)** high tech manufacturing systems, increased use of robots, computer aided designs in manufacturing.
- **In Homes:** involvement of computers (micro-processor-controlled) in domestic work i.e. interior and exterior designs,

making homes schedules.

- **In research:** data capture, storage, manipulation through high involvement of computers.
- **Creation of a virtual world** e.g. “7 continent” where everything (all aspects of life) as computer-zed.

More merits (pros)

- Provision and access to important literature on the net.
- Interactive source of learning.
- Availability of virtual universities.
- Faster communication with tutors, fellow students etc.
- Integration of computers has enhanced teaching of other subjects i.e. demonstrations, illustration etc.
- Enriched research work by the use of the internet by facilitating data capture, processing etc.
- As a subject studied it has offered a new discipline in education i.e. enriched Educational curriculum.
- Provision of edutainment and for entertainment after a long days work.
- Wastage pf study time e.g. doing or engaging in un productive work.
- Exposure to illicit material has led students adopt negative behaviors.
- Over dependence on computers.
- Led to increased costs of Education and learning.
- Learning of computers needs specialized skills which are not readily available to some communities.
- Information provided on the internet does not promote good Education.
- The security on the internet is so relaxed and piracy of peoples work (research) goes inches iced…

28. Outline what you expect the role of computers to be in future. (20 marks)

-Outline what you expect the role of computers to be in future.
-Outline what you expect the role of computers in future plan.

-Introduction:

Future computer capabilities

- Physical size
- Software
- Artificial intelligence

Areas of application;

- Finance / Business planning
- Teaching field. They compliment teacher's knowledge e.g. typing tutor, Project planning and monitoring.
- Special areas. Act as substitute for retiring human experts.
- Expert systems.
- Artificial Neural Networks.
- Natural language processing.
- Artificial Neural Networks.
- Robots.
- Industrial robots.
- Mobile Robots.

EVOLUTION OF COMPUTER SYSTEMS

-Some technological advances and trends are recognizable and can be predicted. It is easy to predict that the computers and related equipment will get faster in memory, smaller and cheaper. Computer technology will find new application and manufacturers will strive to make computing easier and cheaper. As costs decline and performance and ease of use rises. LANs

play a bigger role in corporate information systems.
-Possible future trends on computer capabilities, physical size, price and software.

FUTURE COMPUTER CAPABILITIES

On the capabilities fronts, computers are going to evolve. They:

- Are going to evolve. They are going to have more powerful, smaller processor and faster access to memory.
- Will have operating systems that will handle real time data analysis
- Will have improved user interfaces that offer users easier and more intuitive access to information.
- Will have multi-media applications that will be fully incorporated into some information systems because data is easier to interpret when presented as a combination of sight, sound and motion.

Physical size

Most hardware components will get smaller and faster. This means computers will become smaller and do more.

Price

As technology advances the price of computers will go down. Every sphere of life will be permeated by computers, which will be common even among people learning.

Software

Software development will also develop to allow users to easily operate computer systems. To facilitate document the best programming and operating systems are moving towards object-orienting system. OS will play an integral part in giving the user more control over how data are linked and shared. New operating systems will focus on object linking, message passing

and data sharing.

Artificial intelligence

-Artificial intelligence is the process of building computer systems that stimulate human thought processes and actions. The goal of artificial intelligence is not to replace human intelligence which is not replaceable; rather it is to hell people to be more productive.

-In the past, computers used calculating power to solve structured problems.

This field of artificial intelligence is moving into the mainstream of data processing.

-Artificial intelligence attempts to develop computer systems that can mimic or simulate human though process and actions. The goal of artificial intelligence is not to replace human intelligence which is not replaceable; rather it is to help people to be more productive. In the past, computers used calculating power to solve structured problems.

This field of artificial intelligence attempts is moving into the mainstream of data processing.

-Artificial intelligence attempts to develop computer systems that can mimic or simulate human thought process and actions. This include reasoning and learning from past actions. True artificial intelligence that corresponds to human intelligence is still along way off. However, several tools that emulate human problem solving and information processing have been developed. Many of these tools have practical applications for business. They include expert systems. Natural language processing, artificial neural networks and robots.

Expert Systems.

-Expert systems are computer programs that essentially emulate the knowledge of human experts skilled in particular field, for example of a geologist or a medical Doctor. They have both textbook knowledge and tricks of trade that an expert acquires after years of experience as a result the programs that can be really complicated.

Areas of Application

Finance / Business planning

Teaching field. They compliment teacher's knowledge e.g. typing tutor, Project planning and monitoring.

Special areas. Act as substitute for retiring human experts.

Natural Language Processing

Natural language processing is the capacity of the computer's to "understand" human language and translate it into actions upon which to act. For instance, you could create a list of students from a database by typing "Print a list of students with outstanding balance of greater than 100,000". It is expected that in future, language processing software will understand language from any speaker and translate it into any other language upon which to act.

Artificial Neutral Networks.

Present computers and super computers are relatively slow because of the build in structural limitations. The processor and the main memory are physically separated. Although joined by communication links, the processor spends most of its time waiting for data to come from or go to memory.

The arrangement is known as the Von Neuman Architecture after its originator John Von Newman. With the scheme that is known as Neutral Networks however, a computer will have a

scheme resembling those in human brain and nervous system. It is believed that data will be transmitted to and from the processor at many times the speed of the old arrangements. This type of network is expected to help in image recognition, handwriting and speech recognition.

Industrial Robots

Industrial Robots are used in factories to perform certain assembly tasks. Examples are machines used in automobile plants to do welding, painting, loading and unloading. In the garment industry, robot pattern cuts and create pieces of fabric for clothing. Other types of robots have claws for picking up objects.

Perception Robots.

Some robots imitate human senses, for example a robot with television camera or vision system can be used for guiding machines, tools for inspecting products and for identifying and sorting parts. Other types of perception robots rely on the sense of touch, example those used on microcomputer assembly lines to put parts into place.

Mobile Robots

Some robots act as transporters e.g. mail mobiles which carry mail to offices following a pre-programmed route.

29. "Information Technology has done more good than harm to Education "Give your arguments in favour and against the statement. (20 marks)

-Information Technology is the use of computers and communication technology to enhance education.
Computers and ICT can bring benefits such as:

-Computer-assisted instructions (CAI), so that teachers can use computers and other IT equipment to present teaching materials in a more interesting way.
-Computer-assisted assessment (CAA), which may reduce the time and labour to mark the answer scripts.
-Distance learning through computer-based training and Web-based training.
Simulations of experiments or real-life situations that may be harzadous.
-Electronic library system for searching, borrowing, and returning books.
-The school Administration and Management System (SAMS) for keeping records of students and producing report cards or other related documents.
Edutainment, which is a type of educational software that combines education with entertainment.

Advantages of using IT in learning and Teaching.

- CAI and CAL packages that usually contain multimedia effects make learning more interesting and interactive.

- Teachers can present subjects matter and explain abstract concepts more clearly with multimedia.
- The use of productivity tools like word processors, desktop publishing and spreadsheet software for use in projects and other school activities.

- The use of interactive teaching packages available on CD for many different subjects.

- Access to the Internet and thousands of online databases.

- Distance learning facilities for those who are unable to attend school or college, or for minority subjects (such as Russian or Japanese) which do not justify a full-time teacher in a single school.

- Links with other schools or colleges, or with industrial or business organization.
- Special facilities available for students with disabilities – examples partially –sighted students may be able to change text size and background colour, blind people can use text-to-speech conversion packages, people with arthritis or cerebral palsy may control the computer by speaking to it instead of using the keyboard or mouse.
- Students can work at their own pace, repeating sections they don't understand.
- Students can learn by themselves when a teacher is not available.
- Students can usually get their results or feedback immediately after they have answered the question or taken an action.
- There are rich educational resources on CD-ROMs and the Internet.
- Teachers can show experiments that are difficult to perform or dangerous in nature through simulations software.
- Advanced instructions can be given to students in areas where the teacher may not be qualified.
- Computers are endlessly patient.
- The material is presented in a consistent way – you are not

dependent on the skills of a particular teacher.

- Once the package is paid for, it can be cost-effective as fewer teachers are required.

- However there is a fear that IT technology will make teachers redundant, and that path students will lose the skill of social interaction as they become more isolated in their own little 'cyber – world'. Computer-aided learning packages have many advantages;
- At the same time, there are disadvantages in this method of learning. It can be very boring sitting in front of a computer screen and a computer may not motivate students in the same way as a good teacher.
- Face to face interaction between students and teachers may be reduced.
- Students can only follow what the CAL packages are predefined to offer.

UNEB PAST PAPER P840/1 -2005

SECTION A: (20 marks)

1. All these are data storage devices except;
A. Floppy diskette
B. Hard drive
C. Control unit
D. Zip drive

2. Which one of these is odd?
A. Microsoft word
B. Microsoft Access
C. Epi info
D. UNIX

3. A……is a primary database structure.
A. Table
B. Report
C. Form
D. Query

4. The operating system is not directly involved in one of these tasks.
A. A file management
B. Formatting a diskette
C. Scheduling of print jobs
D. Displaying a web page
5. Computer with a ……. Specification will load programs faster.
A. 900 MHz
B. 1 GHz
C. 700 MHz
B. 600 MHz
6. ……Is a popular 7-bit encoding system.
A. ASCI
B. EBCDI
C. Hexadecimal
D. Binary
7. This component of the Central Processing Unit (CPU) carries out all the logic and mathematical operations.
A. ALU
B. System clock
C. Registers
D. Control unit
8.……Is a group of commands available to the CPU which determines the basic computer operations that can

be performed.
A. Instruction set
B. Operating system
C. ROM BIOS
D. Hard disk
9. Which of the following is not a computer peripheral?
A. Monitor
B. Printer
C. CPU
D. Keyboard
10. A……..Is not an example of an output Device.
A. Printer
B. Plotter
C. Monitor
D. Keyboard

11. Which one of the following is not a programming tool?
A. Debugger
B. An interpreter
C. Notepad
D. A compiler
12. Okello intends to draw up an inventory. Which of the following is the most suitable software to use?
A. MS-Word
B. C++
C. Ms-Excel
D. Pascal
13. A…….makes it easy to find your way round the internet.
B. Network browser
C. Microsoft word

D. Compiler
E. Digital camera
14. Slides as an output are displayed using ……Software
B. A word processing
C. An internet explorer
D. A spreadsheet
E. A presentation
15. Which of the following is not a storage device?
B. Disk drive A
C. Disk drive B
D. Motherboard
E. CD-ROM
16. The process of starting a computer is referred to as;
A. Surfing
B. Booting
C. Motherboard
D. Clicking
17. The output displayed on the screen is termed as;
A. Photocopy
B. Soft-copy
C. Master-copy
D. Hard-copy
18. One of these is a pointing device used to manipulate on screen objects
A. CD-ROM
B. Digital Camera
C. Scanner
D. Mouse

19. Which of the following devices can be used to convert images or text on paper documents into electronic format that a

computer can display, store and print.
A. Track ball
B. Scanner
C. Monitor
D. CD-ROM
20. The option on the menu bar which enables one to name a document and store it on a storage device using another name is?
A. Save
B. Save as
C. Edit
D. New

SECTION B (60 marks)

Answer any four questions in this section.

21. (a) Write the following abbreviations in full.
(04 marks)
GUI……
……
ASCII……
……
EBCDIC……
……
URL……
……
(b) Explain the following internet services
(06 marks)
TELNET……
….....
WWW……
……
E-

mail……
……
(c) What do you understand by the following terms?
(04 marks)
-Computer –file
-File name extension

(d) Specify the file types associated with the following file extension; (03 marks)
Exe……
……..
Txt……
….....
Doc……
……

22. (a) Why is the binary number system used for computers?
(02 marks)
……
……
……
……
(b) Convert the:
(i) Binary number 10101010 to its decimal equivalent
(02 marks)
……
……
……
……...

(ii) Decimal number 121 to its decimal equivalent

(02 marks)
……
……
……
……

(c) Explain the meaning of term:
(i) Control unit as used in a computer system
(02 marks)
……
……
……
……

(ii) Function of Control Unit
(02 marks)

……
……
……
……
……
……

(iii) Define a byte
(01 mark)
……
……
……
……

(d) Distinguish between ROM and RAM

(04 marks)

……
……
……
……
……

23(a)(i) Define the term band width.
(02 marks)

……
……

(ii) List three communication media
(03 marks)

……
……
……
……

(b) Below are specifications for two different types of computers:

	Computer A	**Computer B**
RAM	64 MB	128 Mb
HARD DISK	700 MB	20 GB
SPEED	800 MHZ	1 GHZ
COMPUTER WORD	32-bit	64-bit

NETWORK CARD	NO	YES
VIDEO CARD	YES	YES

Study them and answer the questions that follow:
(i)Which computer is faster in processing data?
(01 mark)
……
……
……

(ii) How many bytes can computer A handle at the same time?
(01 mark)
……
……
……
(iii) Which computer is more likely to be connected to a LAN and why? (01 mark)
……
……
……
(c) Define the following terms:
(06 marks)
(i) Software
……
……
……
(ii) Hardware
……

……
……
……

(iii) Application program
……
……
……
……

(d) Distinguish between downloading and Uploading a computer (04 marks)
……
……
……
……

24. (a) (i) Define the term computer virus
(02 marks)
……
……
……

(ii) Identify any three possible symptoms of computer viruses
(02 marks)
……
……
……
……

(iii) State two ways in which one can guard a computer system

against viruses

(02 marks)
……
……
…….....
(b) (i) What do you understand by the term screen Saver as applied to
computers?
(02 marks)
……
….....
(ii) State two precautions that should be take when cleaning a screen display
area.

(02 marks)
……
……
……
……

(iii) State any two steps that must be followed to safely shut down a computer
from the Microsoft Word file
(02 marks)
……
……
……
……
25. (a) Define the following terms
(08 marks)

(i) Warm booting

……
……
……
……

(ii) Monitor

……
……
……
……

(iii) Folder

……
……
……
……

(iv) Artificial intelligence

……
……
……
……

(b)(i) List any two ways of starting an application in windows (02 marks)

……
……
……
……

(ii) What are the windows utility used to view contents of a floppy, hard disk and

network drives?
(02 marks)
……
……
……
……
(iii) What must be done to floppy disks before they are used?
(02 marks)
……
……
……
……

(iv) What do we call the basic applications that are built into windows that allow
us to perform tasks like drawing or text editing?
(02 marks)
……
……
……

(c) (i) CD-ROM stands for?
……
……
……
(ii) State two ways in which CD-ROM can be useful in education.
……
……
(iii) State three precautions for correct handling of diskettes.
……
……

……
……

26. (a) Write the following abbreviations in full.
(04 marks)
CAD……
……...
CPU……
……
I.C……
……...
IP……
……

(b) Define the following terms:
(i) Hard copy
(01 mark)
……
……
……
……

(ii) Soft copy
(01 mark)
……
……
……
……

(iii) Bug
(01 mark)

……
……
……
……

(c) Explain the meaning of the following:

(i) HTTP
(02 marks)
……
……

(ii) HTML
(02 marks)
……
……
……
……

(iii) Fill in the gaps in the table below
(04 marks)

Task	**Type of software that can be used**
(i)…… ……	Adobe Photoshop, Paintbrush, Ms word
Present a lecture	…… ……..
(ii)…… ……	Ms Excel
(iii)Reading information on the internet.	…… …….

SECTION C: (20 marks)

Answer only one question from this section. Answer to the question must be done in the answer sheets provided.

27. Explain why a school should have a website
(20 marks)

(a) Outline the different forms of secondary storage
(05 marks)
(b) Describe the characteristics of each of the above forms of secondary
storage
(15 marks)

28. Give your arguments in favour and against the impact of computers in our
society today.
(20 marks)

SOLUTIONS TO UNEB P840/1-2005

SECTION A: (20 mark

1. C	2. D	3. A	4. D	5. B
6. B	7. A	8. C	9. C	10. D
11. C	12. C	13. A	14. D	15. C

16. B	17. B	18. C	19. B	20. B

SECTION B:

Answer any four questions. All the working must be done in the spaces provide.

21.(a) Write the following abbreviations in full.

(i) **GUI** - Graphical User Interface
(ii) **ASCII** - American Standard Code for Information Interchange.
(iii) **EBCDIC** - Extended Binary Coded Decimal Interchange Code.
(iv) **URL** - Uniform Resource Locator.

(b) Explain the following Internet Services:

(i) **TELNET**- A terminal emulation protocol that allows a user to log onto a remote device.
(ii) **WWW**- (World Wide Web) – A system of internet servers that support The Hypertext Markup Language documents.
(iii) **E-MAIL (Electronic Mail)-** The transmission of messages to one or more recipients over a network.
(c)(i) Computer file- is a document containing tables or characters.

(ii) File name extension- Defines what type of file and may also define from

which application it belongs.

(iii) Specify the file types associated with the following file extension;

.exe – executive file
.txt – text file
.doc – document file

22 (a) Why is the binary number system used for computers?

It is used because the computer (CPU) Understands only binary every character is represented in binary form in the ASCII table.

(b) (i) Convert the:

Binary number 10101010 to its decimal equivalent

(1x27) + (0x26) + (1x24) + (0x24) + (1x23) + (0x22) + (1x21) + (0x20

128 + 0 + 32 + 0 + 8 + 0 +2 + 0
128 + 32 + 8 + 2 = 170

(ii) Decimal number 121 t0 its binary equivalent

1111001

121	
60	1
30	0
15	0
7	1
3	1
1	1

(c) Explain the meaning of the terms:

(i) Control unit as used in a computer system

The control unit extracts the instructions from the main memory, decodes them, and executes them.

(ii) Control unit

Functions of the control unit.

❖ Decodes instructions (is the process of translating the instructions into commands the computer can execute) Executes instructions (is the process of carrying out the commands)

(iii) Define a byte

-A byte is eight bits grouped together. A byte is more informative than a bit because it can represent 28 = 256 different things.

(d) Distinguish between ROM and RAM

RAM	**ROM**
-RAM is volatile	-ROM is non volatile
-RAM is read and write	-ROM is read only

-RAM is temporal (not permanent)	-ROM is permanent
-RAM can be increased	-ROM is normally not increasable

23. (a) (i) Define the term band width.

The rate of speed of data through a channel and is expressed in bits per second (bps).
Ranges of frequencies
The bandwidth is the difference between the lowest and highest frequencies transmitted.

(ii) List three communication media
Communication media includes the following:
❖ Wire base communication media (twisted pain wires, coaxial cables, optical fibres)
❖ Wireless base communication media – (micro wave from land based antennas, micro wave from communication satellites, infra waves from infrared devices, radio waves from blue tooth devices)

(b) Below are specifications for two different types of computers. Study them and answer the questions that follow:

	Computer A	**Computer B**
RAM	64 MB	128 MB

HARD DISK	700 MB	20 GB
SPEED	800 MHZ	1 GHZ
COMPUTER	32-bit	64-bit
NETWORK CARD	NO	YES
VIDEO CARD	YES	YES

(i) Which computer is faster in processing data

Computer B (1 GHz)

(ii) How many bytes can computer A handle at the same time?

8 bits = 1 byte Therefore it is;

32 bits 32bits = **4 bytes**

(iii) Which computer is more likely to be connected to a LAN and why?

Computer B because it has a Network Card (NIC)

(c) Define the following terms:

(i) Software

Software is a program consisting of the step by step instructions that tell the computer how to perform a task.

(ii) Hardware

Hardware is the electric, electronic and mechanical components that makeup a computer system.

The physical tangible parts of a computer system .

Hardware consists of all the machinery and equipment in a

computer.

(iii) Application program

Application program- software that can perform useful work on general purpose tasks.
Software that solves the needs of the end user.

(d) Distinguish between downloading and uploading a computer.

Downloading means that you retrieve files from another computer and store them in your computer on a network.
Upload means that you send files from your computer to another computer on a network.

24. (a) (i) Define the term computer virus

-Computer virus is a deviant program that affects or attacks computer systems and destroys or corrupts data.

(ii) Identify any three possible symptoms of computer viruses.

Symptoms of computer viruses

- Less memory available than usual
- Access lights turning on for non referred devices
- Unfamiliar graphics.
- Programs taking longer than usual to load.
- Disk accesses seeming excessive for simple tasks.
- Usually error messages occurring more frequently.

(iii) State two ways in which one can guard a computer system against viruses.

- Not sharing diskettes
- Avoid suspicious users and un trusted users and un trusted users
- Ensure that the e-mail is from a trusted source before opening or executing any e-mail attachment
- Install an ant virus utility and update its virus definitions frequently for detecting and removing viruses
- Never start up a computer with a floppy disk in the floppy drive
- Scan all floppy disks and files for possible virus infection before opening them
- Set the security level for macros in an application so that the user can choose whether or not to run potentially unsafe macros
- Write-protect the recovery disk before using it
- Back up important files regularly
- An antivirus utility is a program that prevents, detects, and removes viruses from a computer's memory or storage devices.
- There must a policy which educates the users on the danger of viruses

-Some of the popular antivirus programs are; **AVG** antivirus software, **F-secure**, **Norton** Antivirus,
Kasperspy internet security, **NOD32**, **MacAfee** antivirus. To mention but a few.
-An antivirus utility scans for programs that attempt to modify the boot program, the operating system, and
other programs that are normally read from but not modified.

(b) (i) What do you understand by the term screen saver as applied to computers?

- Screen saver is a utility that supposedly prevents a monitor display screen from being etched by an unchanging image (burn in)
- A screen saver is a utility that causes the monitor's screen to display a moving image or blank screen if no keyboard or mouse activity occurs for a specified time period.

Applications of a screen saver program

- Screen savers originally were developed to prevent a problem called ghosting, in which images could be permanently etched on a monitor's screen.
- Screen savers can also be used for reasons of security – prevents un wanted on lookers from accessing information or data from your computer.
- Business – advertisements on the screen.
- Entertainment – digital photos can be put on your. Screen as moving pictures.

(ii) State two precautions that should be taken when cleaning a screen display area.

- Never use a watery (wet cloth) to clean your screen.
- Never put your screen near magnetic media.
- Always ask a technician for help.

(iii) State any two steps that must be followed to safely shut down a computer from the Microsoft Word file.

Steps that must be taken to safely shut down a computer from

the Microsoft
World File.

- Click on file save as the document.
- Click on file close.
- Click on file exit.
- Click on start up, shut down (to shut down the computer)

25.(a) Define the following terms

(i) Warm booting

-Warm booting is the process of restarting a computer that is powered on.

-A warm boot: Sometimes, the computer stops working or responding to the commands given by the user. In such cases we need not switch the power off to restart the system. We can restart the system by pressing ALT+CTRL+DEL keys together. On some computers, RESET switch is there, the reset switch can be used to restart or reboot the system instead of pressing CTRL+ALT+DEL keys. In warm, ROM does not test RAM or the peripherals. This is known as warm booting.

(ii) Monitor (display screens)

Are output devices that show programming instructions and data as they are being input and information after it is processed?

(iii) Folder

Folder (called also directory in command line interface) is where files are kept and subfolders.

(iv) Artificial intelligence

Is a group of related technologies that attempt to develop machines to emulate human like qualities such as learning,

reasoning, communicating, seeing and hearing. E.g. (robots, expert systems, natural language processing)

(b) (i) List any two ways of starting an application in windows

Ways of starting an application in windows.
-You can start by clicking on the icon program on the desktop.
-You can start by clicking on start menu; programs choose the application (MS Word, MS Excel, MS power point)

(ii) What are the windows utility used to view con tents of floppy, hard disk and network drives?

-Clicking on the desktop.
-Clicking on start open, program the applications.

(iii) What must be done to floppy disks before they are used?

Before they are used they are supposed to be formatted.

(iv) What do we call the basic applications that are built into Windows that allow us to perform tasks like drawing or text editing?

- Application software- editors
- Paint brush
- Word pad
- Word

(c) (i) CD-ROM stands for

CD-ROM – Compact Disc- Read Only Memory.

(ii) State two ways in which CD-ROM can be useful in education.

- Storage purposes
- Educative C.D.

(iii) State three precautions for correct handling of diskettes.

Taking care of diskettes.

❖ Don't touch disk surface: don't touch anything visible through the protective jacket, such as the data access area.

Handle diskettes gently:

Don't;

- Bend them.
- Put weights on them.
- Stick them with sharp objects (as in writing on them by bearing down on a ballpoint pen)
- Stapling a disk to a file folder.

Precautions for correct handling of diskettes.

- Spilling a coke or any liquid to it.
- Keep diskettes out of moisture
- Keep diskettes from magnetic fields.

Avoid risky physical environment.

- Disks don't do well in sun or heat (such as in glove)
- Compartments or top of heat vents)

- They should not be placed near magnetic fields (including those created by mobile phones)
- They should not be exposed to chemicals such as cleaning solvents or spilled coffee.
- Keep diskettes in their jackets or a disk bank.

26. (a) Write the following abbreviations in full.

- CAD- Computer Aided Design e.g. auto desk CAD
- CPU- Central Processing Unit
- I.C- Integrated Circuits
- IP- Internet protocol

(b) Define the following terms:
(i) Hard copy – Hard copy refers to printed output (e.g. film, microfilm, paper)

(ii) Soft copy – Software refers to data that is shown on a display screen or is in audio or voice form (output is not tangible).

(iii) Bug – A Bug is an error in a program that causes it not to work.

(c) Explain the meaning of the following:

(i) HTTP (Hyper Text Transfer Protocol)
Is a language that web clients and servers use to communicate with each other is called ALL web clients and servers must be able to understand HTTP in order to send and receive hyper

media documents.

(ii) HTML (Hyper Text Markup Language)
It is a Markup language that describes how a web page should be formatted and displayed in a web browser.
HTML simple describes how a web page should be formatted and displayed by the computer.

(iii) Fill in the gaps in the table below
(04 marks)

Task	**Type of software that can be used**
(i)…… ……	Adobe Photoshop, Paintbrush, MSWord.
Present a lecture	**…… ……**
(ii)…… ……..	MSExcel
(iii)Reading information on the internet.	**…… ……..... **

Task	**Types of software that can be used.**
(i) Produce a document	Adobe Photoshop, paint brush, MSWord
(ii) present a lecture	Presentation software e.g PowerPoint.
(iii) Do financial Accounting calculations	MSExcel.
(iv) Reading information on	Web browser e.g. Windows

the internet.	Explorer, Netscape.

SECTION C:

Answer only one question from this section. Answers to this question must be done in the answer booklet provided.

27. Explain why a school should have a website.
(20 marks)

Benefits of setting up a school Website

- By creating a Website, a school is showing its commitment to mastering the new information and communication technologies for educational benefit. It is an inescapable fact, that in this competitive age, a school Website is a showcase that indicates to a prospective parent that a school is committed to achieving Government targets for getting children connected to the National Grid for Learning.
- If competition for pupils is not reason enough, there are other far more positive benefits for a school having a "presence" on the Web and developing the use of Internet technology:

- Using computer tools to streamline record keeping and administrative tasks, thereby helping to free up time for instruction or professional development.
- It can provide children with easily managed and secure access to Internet based resources.
- Children's work can be celebrated with and viewed by a worldwide audience, providing a powerful and positive motivational factor.
- An increasing number of parents with Internet access can be kept informed of events and information about their children's school.

- The practical ICT skills of making WebPages are vital in modern industry & commerce.
- Parents can be encouraged to interact with the school through e-mail.
- Children can easily have ownership of the design and content of WebPages leading to real respect for the technology and higher standards of ICT work.
- A site with well selected link extends the learning experience into the home.
- A website can provide interactive forums and e-mail experiences that develop the communication skills of the future.
- Secondary schools and colleges could look to lucrative commercial enterprises, developing websites and pages for local companies and businesses.

Benefits of Internet to children /students and teachers.
The Internet, or World Wide Web, as it is sometimes called, is a vast collection of text, images and ideas. It spans all cultures and languages reflecting all that is good, *and also much that is bad,* about the human condition. The information the Web contains flows freely and without restriction around the world, carrying the personality and beliefs of countless millions of people to yet millions more in an almost instantaneous electronic form.

The potential benefits for education are immense and among others include:

- Providing practical web based resources to support for learning in any
Curriculum area.
- Access to masses of factual data presented in an exciting interactive

way.

- Bringing the rest of the world directly into the classroom.
- Enabling positive and long term contact with people from other countries
and cultures.
- Students develop positive attitudes towards technology uses that support
lifelong learning, collaboration, personal pursuits, and productivity.
- Promoting the sharing of good practice and providing teachers with the
latest advice and information.
- Students demonstrate a sound understanding of the nature and
operation of technology systems.
- Students employ technology in the development of strategies for solving
problems in the real world.
- Students use telecommunications to collaborate, publish, and interact
with peers, experts, and other audiences.
- Students use a variety of media and formats to communicate information
and ideas effectively to multiple audiences.

28. (a) Outline the different forms of secondary storage. (05 marks)

- Diskettes
- Hard disks
- Flash memory
- Optical tape

- Data compression and decompression

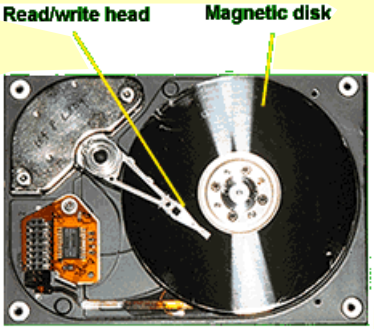
(b) Describe the characteristics of each of the above forms of secondary storage.
(15 marks)

1. Characteristics of floppy Diskettes

(i) A floppy disk is a thin, circular flexible plastic disk with a magnetic coating enclosed in a square-shaped plastic cell.
(ii) A floppy disk drive (FDD) is a device that can read from and write to a floppy disk.
(iii) If a computer has only one floppy disk drive, the drive is usually designated drive A (i.e. A:)
(iv) If the computer has two floppy disk drives, the second one is usually designated drive B (i.e. B:)
(v) The most widely used floppy disk today is 3.5 inches wide.
(vi) Before anything can be written on a new floppy disk, it must be formatted.
(vii) Formatting is the process of a floppy disk or hard disk for reading and writing by organizing the disk into storage locations called tracks and sectors.
(viii) For reading and writing purposes, sectors are grouped into clusters.
(ix) The formatting process may also erase the file location information and redefines the file allocation table for these items of a formatted disk.

(x) Today, most floppy disks are high-density floppy disk.
(xi) Floppy disks usually spin at about 350 revolutions per minute.
(xii) The average access time for current floppy disk drives to locate an item on the disk is 84 milliseconds, or approximately 1/12 second.
(xiii) To care for a floppy disk, it should not be exposed to heat, cold, magnetic fields, and contaminants such as dust, smoke, or salt air.

2. Characteristics of a hard disk



- A hard disk usually consists of several inflexible, circular disks, called platters, on which items are stored electronically.
- A hard disk is also known as a hard disk drive.
- The hard disk in most desktop and laptop computers is housed inside the system unit, and is considered fixed disks because of not being portable.
- Hard disks are sealed tightly to keep out of contaminants (e.g. dust and smoke particles which may result in head crash.
- Hard disks undergo two formatting steps: a low-level format and a high-level format.
- Some computers are able to improve the hard disks access time by using disk caching.

- The flow of data, instructions, and information to and from a hard disk is managed by a special purple chip and its and its associated electronic circuits called the hard disk controller (HDC).
- Some manufacturers develop a type of hard disk system, called RAID, which connects several smaller disks into a single unit that acts like a single large hard disk.

3. A CD-ROM (Compact Disk Read-Only Memory)

- Because CD-ROM and audio CD use the same laser technology, a CD- ROM drive can also be used to play audio CDs.
- A CD-ROM Compact Disc Read-Only Memory) is a compact disc that uses the same laser technology as audio CDs for recording music.
- A CD-ROM, however can contain text, graphics, video and sound.
- The contents of standard CD-ROMs are written, or recorded, by the manufacturer, and can not be modified by the user.
- A compact disc (CD) is a flat, round, portable, storage medium that is usually 4.75 inches in diameter and less than one-twentieth of an inch thick.
- A CD-ROM drive or CD-ROM player is required to read items on a CD-ROM.
- A CD-ROM, however can contain text, graphics, video and sound.
- The contents of a standard CD-ROMs are written, or recorded by the manufacturer, and cannot be modified by the user.
- A CD-ROM drive or CD-ROM player is required to read items on a CD-ROM.

- A CD-ROM can hold up to 650 MB of data, instructions and information.
- The speed of a CD-ROM drive is measured by its data transfer rate, which is the time it takes the drive to transmit data, instructions, and information from the drive to another device.
- Most standard CD-ROMs are single-session while some are multi session.
- Compact disks store items by using microscopic pits and land that are in the middle layer of the disc.
- Pits and lands.
- A high-powered laser light creates the pits.
- A low powered laser light reads items from the compact disc by reflecting light through the bottom of the disc.
- The reflected light is converted into a series of bits that the computer can process.
- Land causes light to reflect, which is read as binary digit 1.
- Pits absorb the light and this absence of light is read as binary digit 0.
- A compact disc stores items in a single track, which is also divided into evenly sized sectors, that spirals from the center of the disc to the
- edge of the disc.
- A track is a narrow recording band that forms a full circle on the surface of a disc.
- The outer –most tracks is labeled as track 0.
- A sector is a pie-shaped section on a track, and is capable of holding 512 bytes of data.
- Any sector that can not be used due to a physical flaw on the disc is called a bad sector.
- C-D-RW acts like a floppy disk or hard disk, allowing data instructions, and information be written and rewritten on to it

multiple times

- CD-RW software and a CD-RW drive are required in order to write and rewrite on a CD-RW.
- One problem with CD-RW is that they cannot be read by all CD-ROM drives.
- The drives designation of a compact disc drive usually follows alphabetically after that of the hard disk (i.e., if the hard disk is drive C, then the compact disc is drive D).
- Variations of compact discs designed for use with computers include;

-CD-ROM
-CD-R
-CD-RW
-DVD-RAM
-DVD-R
-DVD+RW
-Photo CD

- ACD-ROM (Compact Disc Read-Only Memory) is a compact disc that use the same laser technology as audio CDs for recording music.
- CD-R (compact Disc-Recordable) is a technology that allows a user to write on a compact disc using his or her own computer.

- CD-R is a “write once, read many” technology.
  - A user can write on the disc in stages – writing on part of it one time and writing
  - on another part at a later time.
- However, the user can write on each part only once and cannot erase it.

- CD-R software and a CD-R drive are required in order to write on a CD-R.
- ADVD-RW (COMPACT Disc-Rewritable is an erasable compact sic that can be written on multiple times
- ADVD-ROM (Digital Video Disc- Rom) is an extremely high capacity compact disc capable of storing from 4.7 GB to 17 GB. A DVD-ROM drive or DVD prayer is required to read a DVD-ROM.

Although the size and share of a DVD-ROM and a CD-ROM are similar, a DVD-ROM uses one of the following three storage techniques to increase its storage capacity.

(i) The first technique involves making the disc denser by packing the pits closer together.
(ii) A second technique involves using two layers of pits, which doubles the capacity of the disc.
(iii) Finally, some DVD-ROMs are double sided which means that they can be removed and turned over to read the other side DVD-RAM is the recordable and rewritable version of DVD.
(iv) DVD-RAM is the recordable and rewritable versions of DVD-ROM, which allows items to be erased and recorded on it multiple times.
(v) DVD-R is the recordable and rewritable versions of DVD-ROM, which can be

written and read (play) for many times.
(vi) A DVD+RW is similar to a CD-RW, except it has storage capacities up to 4.7
GB.

A Photo CD is a type of CD that contains digital photographic images saved
in the Photo CD format developed Eastman Kodak.

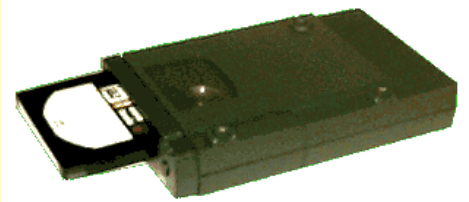
4. Tapes

Tape drives are a fairly old storage medium. Their cost is low relative to the amount of data they can store. These serial devices have been used for a long time by business.

- A tape drive is used to read from and write data and information onto a tape.
- Three common types of tape drives are QIC (Quarter-inch cartridge), DAT (Digital audio tape), and DLT (Digital Linear Tape).

Tape Drive

Magnetic tape characteristics



❖ Is a magnetically coated ribbon of plastic capable of storing large amounts of data and information at a low cost.
❖ It is one of the first storage media used with mainframe computers.

❖ Tape storage requires sequential access, which refers to reading or writing data consecutively.
❖ Floppy disks, hard disks, and compact discs all use direct data item or file can be located immediately. Without having to move consecutively through items stored in front of it.
❖ Tapes are used most often for long-term storage and backup.

Other types of storage media include;
-MO disk
-PC card
-Smart card
-Microfilm and microfiche
-Online storage

5. Magneto-optical (MO) disk characteristics
❖ Combines the best features of magnetic and optical disk technologies.

❖ Magnetic Optical has the high storage capacity of an optical disc but can be written over like a magnetic disc.

❖ A smart card, which is similar in size to a credit card or ATM card, stores data on a thin microprocessor embedded in the card.

❖ When the smart card is inserted into a specialized card reader, the information on the smart card is read and if necessary updated.

❖ An intelligent smart card contains a CPU and has input,

process, output and storage capabilities.

❖ A memory card has only storage capabilities.

Applications of Smart cards include;

- Storing a prepaid dollar amount (e.g. a prepaid telephone calling card)
- Storing patient records and other health-care information.
- Tracking information of customers and employees.

-Microfilm and microfiche are used to store microscopic images of documents on roll of sheet film.
-Microfilm uses 100-to 215-foot roll of film.
-Microfiche uses a small sheet of film, usually about 4 inches by 6 inches.
-The images are recorded onto the film using a device called computer output microfilm (COM) recorder.
-The stored images are so small that they can be read only with a microfilm reader of microfiche reader.
-Application of microfilm and microfiche include.
-Storing back issues of newspapers, magazines, and genealogy records in libraries.

-Archiving inactive files in large organizations such as banks.

6. Online storage characteristics

Sometimes called an Internet hard drive
In a service on the Web that provides storage to computer users for free or for a minimal monthly fee.

7. Zip/ Jaz drive

(i) A Zip drive is a special high-capability disk drive developed by lomega tat use a 3.5-

inch Zip disk.
(ii) Is slightly larger than about twice as thick as a standard 3.5-inch Zip disk.
(iii) A zip disk can be 100 MB, or 750 MB in storage capacity.
(iV) However, a zip drive cannot access a standard 3.5-inch floppy disk.

29.Give your argument in favour and against the impact of computers in our society today.
Human Issues Against the Impact of computers;
Job Displacement

- With the coming of the information age, many jobs have been replaced by computers or automated machinery, such as robots. A few examples are listed below.
- A large proportion of the manufacturing and assembly work is now done by robots.
- Managers rarely have shorthand secretaries, but are expected to word process their own letters.
- Bank notes are rarely hand counted, but are either weighed or counted using machines.
- With the advancement in software, people who needed special skills such as typesetting, for newspapers and publications, have been deskilled, since the software does all the layouts for them.
- Shop assistants no longer need to calculate the change that should be given since the checkout computers does it.
- Payrolls are now automatically done using application programs. This would previously have involved a number of people, depending on the size of the organization, and several days to work to prepare.

Work skills and Re-Training.

- As can be seen from the previous section, as number of work skills are no
longer required, but at the same time, jobs have been created that require new ICT (Information and Communications Technology) Skills. New jobs such as programming, network installation, network administration, web design, etc have been created.
- As a result of the deskilling/re-skilling, retraining on a large scale is required, other many people can not be employed. This is a key issue that the management of any organization must address to ensure that any computerization efforts include retraining of staff to fulfill the changing job requirements. This has in itself created a whole new industry of people who are responsible for training the workforce for the information age in favour of computers.

-Break through
-Health care
-Commerce and industry
-Communication broadband, Web TV, and Radio.

- Future trends (smaller, faster with large storage capability) this will include evolution of computer architecture (bus development, compact PC, Universal Serial Bus IEEE 1394, Card bus, Fibre channels, processor development, pipeline and superscalar CPUs. Simultaneous multi threaded processor (SMP), chip multiprocessor (chip), intelligent RAM (IRAM), raw processor.
- AI – Artificial Intelligence (expert system, natural languages processing, artificial neural networks, robots)
- Computer crimes –viruses, hacking, Data protection, and

computer misuse health safety, obscene publication.

Against computers as tools of technology advancement.

- Computer crimes (viruses, hacking)
- Data protection and legislation, computer ethics
- Data protection and legislation
- Computer ethics
- ICT legislation (data, computer misuse, health safety) obscene publication.
  - Information policy
- Moral degradation- one finds that the use spend most of the time glued on the Internet watching moral degradation pictures movies etc.
- Amongst the friends they find on the net some have quire morals like lesbians, cults, hackers etc.
- Computers have also affected our sights. A bigger percentage of people who have been working with computers for years are now putting on glasses to support their sight and computers emit rays and heat which is not environmentally friendly to the surrounding and may be hazardous to human being.
- Computer also consume less power.
- Computer training and repair is very expensive and experts are few.
- Internet is good for communication but in case of a virus it can spread to millions of computers just in seconds.
- Corrupt data records. Therefore computer owners must protect their computer systems, probably with some sort of passwords or a “firewall” which to a layman is not easy because this is beyond their understanding.

CARREER OPPORTUNITIES IN THE COMPUTING FIELD.

Information processing is an important activity in any organization of any size. A separate IT department usually has the responsibility of dealing with IT related issues or it may be outscored.

Some of the issues that an IT department would be responsible for are:

- IT procurement (hardware, networking).
- Installation and maintenance.
- Identification of user requirements (systems analysis).
- Design and development of IT solution (programming)
- Database administration (database backup, performance, tuning etc)
- Website design, development and maintenance.

IT training.

-There are also software houses that specialize in developing software applications. These would have teams of analysts, software engineers, programmers, system testers , etc.

-The manufacturing of microprocessors, computers, networking equipment and so on needs specialist skills as well, such as computer engineers, computer scientists, etc.

-To provide skilled people to perform the above tasks, there has been a tremendous growth in IT training providers.

The above discussion shows that there are numerous career opportunities within the ICT field, and some of the Job functions are discussed in more detail below;

- Computer operators -Web designers
- Computer trainers -Computer scientists
- Programmers -Computer technicians
- Software engineers -System administrators

- System analysts -Information system managers
- Database administrators
- Network administrators

COMPUTER STUDIES
Paper 1
Oct./Nov.2006
2½ hours

SECTION A (20 marks)

1. The difference between hardware and software is that hardware is
   A. Tangible while software is intangible
   B. Metallic while software is plastic
   C. Permanent while software is temporary
   D. Reliable while software is unreliable

2. Which of the components is the "brain" of a computer system?
   A. Main memory
   B. The secondary memory
   C. The processor chip
   D. System Software and Application Software

3. Which of the following are the two general types of programs?
   A. Entertainment and productivity
   B. Microsoft and IBM

C. Word Processors and Databases
D. System Software and Application Software
4. A computer performs all the following functions Except;
A. Storage
B. Processing
C. Output
D. Thinking
5. Which of the following is used to give commands to the computer?
A. Input devices
B. Storage devices
C. Output devices
D. Processing devices
6. A communications device enables a computer to connect a computer.
A. System unit
B. Software
C. Application
D. Network
7. A file is;
A. A section of the main memory used to store data.
B. A part of a program used to describe what the program does.
C. Another name for floppy disk
D. A collection of information that has been given a name and stored in secondary memory.
8. An anti-virus is an example of
A user interface
An operating system
C. An application software
D. A utility program

9. A grid in a spreadsheet program where entries are made consists of
A. Rows, columns and diagonals
B. Columns and rows
C. Rows and diagonals
D. Columns and diagonals
10. What kind of hardware would you use to put photos of your family into a file?
A. Printer
B. BDV Player
B. Scanner
D. PowerPoint
11. In a database, a collection of fields that contain data about a single
activity or transaction is referred to as a;
A. file
B. table
C. record
D. primary key
12. What type of objects is used to find answers to questions about the data in a database?
A. Macro
B. Query
C. Module
D. Form
13. Which of the following is not an example of programming language?
A. COBOL
B. Visual Basic
C. Lotus
D. Java

14. Kapere was doing his computer final examination when his computer hangs up. He lost everything he had been typing because he forgot to;
A. Copy
B. Save
C. Cut
D. Paste
15. The purpose of a screen saver is to
A. Help prevent screen burn out
B. Brighten up the screen
C. Test the capability of the monitor to display various graphics.
D. Entertain the computer user.
16. HTTP stand for;
A. Hyper et transport protocol
B. Hyper text transport platform
C. Hyper text transfer platform
D. Hyper et transfer protocol
17. Which of the following usually provides internet e-mail accounts and addresses?
A. ISP
B. Internet café
C. WWW
D. TCP/IP
18. Which of the following is the most promising use of a computer?
A. Error-free software
B. Online education
C. Voice recognition software
D. Downloading music

19. Which type of software is used of request a specific resource from the
server?
A. Server software
B. Client software
C. System software
D. Messaging software
20. Which of the following is created using presentation software?
A. A directory
B. A file structure
C. An organization chart
An e-mail message

SECTION B. (60 Marks)
21. (a) Answer any four rules that should be followed in computer (03 marks)
……
……
……
……
……
……
……
(b) Define the following terms as used in computer
(01 Marks)
(i) Directory
……
……
……
…..

(ii) Modem
(01 mark)
……
….....

(c) (i) Name any five peripheral devices of a computer
(05 marks)
……
……
…….....
.....
(ii) Give the function of each device named in (c) (i) above
(05 marks)
……
……
……
……
……
22. (a) Explain the following terms as used in computer studies:
(i) System software
(02marks)
……
……
(ii) Application Software
(02 marks)
……
……
(iii) Utility programs
(02 marks)
……
……
…….....

(b) Outline four functions of operating system software (02 marks)

……
……
……
……
……

(c) List any five operating systems that you know (05 marks)

……
……
……
……
……

23. (a) Write the following in full in relation to computer (03 marks)

(i)
RAM……
……

(ii)
ROM…….....
.....

(iii)
EPROM……
……

(b) Distinguish between primary storage and secondary storage devices, giving
an example of each.

……
……
……

……

(c) (i) Name three major parts of the CPU
(03 marks)

……
……
……
……

(ii) Explain the function of each part in (c) (i) above
(06 marks)

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……
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……

24. (a) Explain the following;
(i) Telnet
(02 marks)

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……

(ii) FTP
(02 marks)

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……

(iii) TCP/IP
(02 marks)

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……
……

……...
(iv) Intranet
(02 marks)
……
……
……
……

(b) What is a web browser? Give one example of a web browser. (03 marks)
……
……
……
……
(c) State four major components of an e-mail message
(04 marks)
……
……
……
……
…….....
25. (a) Define the following terms in relation to database.
(i) File
(01 mark)
……
……
……
(ii) Record (01 mark)
……
……

……

(iii) Field
(01 mark)

……
……
……

(b) Name three functions of databases:
(03 marks)

……
……
……

(c) Outline four steps taken to create a simple database.
(04 marks)

……
……
……

(d) With an illustration, explain how a shopkeeper can use spreadsheets to
run the business.
(05 marks)

……
……
……
……

26. (a) Distinguish between the following as used computers:
(i) Data and information……...(02 marks)
(ii) Domain name and IP address……..(02 marks)

(b) State two undesirable behaviors involving internet
(02 marks)
……
……
……
(c)(i) How does the use of the mouse make windows easier compared to the use
of the Keyboard alone?
(04 marks)
……
……
……
(ii) State any two major problems that often affect the proper functioning of the mouse.
……
……
……
(iii) Suggest any two ways the mouse can be protected from the problems in (c) (ii) above.
……
……
……

SECTION C: (20 Marks)

27. The Head teacher of your school wishes to buy computers for the school. As
a student of computer studies, what type of computers would you advise the Headteacher to buy and for what benefits are they to your school?

(20 marks)

28. Suggest reasons why there is an increase in the use of computers in most organization in Uganda today?
(20 marks)

29. Total data security is not possible today". Outline the areas where this has been achieved and challenged.
(20 marks)

SOLUTIONS TO UNEB PAPER 840/1-2006

SECTION A:

1. A	**2. C**	**3. C**	**4. D**	**5. A**
6. D	**7. D**	**8. D**	**9. B**	**10.C**
11.C	**12.B**	**13.C**	**14.B**	**15.D**
16.D	**17.A**	**18.B**	**19.B**	**20. C**

SECTION B:

21(a) Give any three safety rules that should be followed in a computer laboratory

- Avoid dust
- Proper shutdown of computers

- Temperature settings
- Proper air ration
- Back-up
- Moving equipment
- Avoid use of liquids
- Care for diskettes
- Moving equipment from place to place.

Like all electronic equipment, microcomputers need to be serviced regularly to maintain their operability. Some of the measures that should be taken are:

- Switch on your computer hardware system starting from the wall socket switch, UPS, or stabilizer computer then printer.
- Avoid making connections when the computer sys-tem is in power e.g. keyboard connections, mouse,monitor, printer e.t.c.
- Place the microcomputer in a dust free environment with good ventilation.
- Dust covers should be used to cover the micro-computer when not in use
  - and if you are using polythene covers then do not cover the computer
  - immediately after switching off as it will trap heat.
- The micro-computer should not be exposed to direct sunlight.
- Food or drinks should not be allowed near the computers.
- The computers should be regularly serviced. At least once a year, or more frequently if the environment is dusty. The service should normally include blowing the dust from the system unit, cleaning the floppy drives, keyboard including all the keyboard contacts, also clean the monitor externally and the computer equipment regularly with a wet cloth. Make sure you don’t drop

water into the computer system. If water drops in accidentally do not use the computer immediately until water has completely evaporated.

- Do not open the computer for inside cleaning, this should be handled by a qualified personnel.
- It is a good practice to keep a record of the daily condition in case of computer failure.
- The peripheral devices, such as printers and mouse, should be regularly serviced.
- The floppy disks used for installation of programs and backups should be kept safely in disk banks, and kept away from sunlight and magnetic media.
- Floppy diskettes have to be write-protected all the time especially for installation diskettes (using protection tabs) and remove the write protect when writing on the diskettes if they are used for backup.
- In areas where the power fluctuates, it is important to use either a stabilizer or uninterruptible power supply source (UPS), to ensure a steady input power to the compute system.
- Avoid abrupt switching off and on of the computer system, use the normal way of shutting or closing down all the programs then shut down the computer from the start button.

Software care

-The vital part of a computer system is the data. In fact data is expected to a number of risks and great care be adopted to protect against them. The risks to data are;

- Accidental loss
- Accidental damage or corruption.
- Theft
- Deliberate damage or corruption

- Authorized disclosure.

To guard against these risks, the operator must make sure that;

- Makes backup copies of the data regularly. Before backing up, make sure the data is error free otherwise you might take up a back copy of corrupted data.
- Minimize the number of visitors to your computer installations and do not allow any one to your server except the network administrator.
- Avoid diskettes coming from different installations as your system might contract viruses.
- If you have unwanted printouts, please destroy them because data is not supposed to fall in unauthorized hands.
- Save data regularly as an abrupt power cut off may corrupt your data, if you have no UPS.

File and disk maintenance.

- To minimize data corruption, the file and disk maintenance should be performed regularly. A lot of file deletion for instance causes file fragmentation that may lead to reduced access time, file cross-linking etc.
- These are some of the operations to be performed for file and disk management.
- Have proper subdirectory structure and avoid keeping a lot of files in the root directory.
- Use CHKDSK command regularly to check on the lost clusters and convert them to files.
- Use of utilities like optimizer (scan disk, defragmenter, pc-tools NDD, speed disk) should be utilized to remove fragmentation and system tools in windows operating systems.

❖ A number of programs have been written to enhance the use of personal computer utilities and this has been discussed in the previous chapter.
(Any three (3) x1 = 3 marks)

(b) Define the following terms as used in computer;

(i) Directory
(01 mark)
A collection of files on a given storage media/ given drive.

(ii) Modem
o A modem is a communications device that converts between analog and digital signals.
o Modem- a device that converts signals from computer into telephone and vice versa to enhance computer communication.

(Any (1) x 1 =1 mark)

(i) Name any five peripheral devices of a computer.
-A peripheral is any external device that attaches to the system unit.

1. Keyboard
2. Mouse
3.Trackball
4. Touchpad
12. Optical Character Recognition Reader
13. Optical Mark Recognition Reader
14. Bar Code Reader
15. Sensor and Remote Sensor
16. Magnetic Strips

Reader
5. Joystick
6. Touch Screen Recognition Device
7. Light pen
8. Termia Camera
9. Digital Camera
10. Scanner
11. Magnetic Ink Character Recognition Reader.
17. Microphone.
18. Voice
19. MIDI Device
20. Digital Video
21. PC Camera
22. Web Cam
23. Stylus and graphics Tablet.

Four common types of storage media are;

- Floppy disk
- Hard disk
- Compact disk
- Tape
- Zip drive
- Flash disk

Other types of storage media include

- Magnetic Optical disk
- PC card
- Smart card
- Microfilm and microfinche
- Online storage

Examples of output devices are:

- Display Device

- Printer
- Audio Output Device
- Data projector
- Facsimile Machine
- Termia

(Any five (5) x 1 = 5 marks)

Common types of storage devices include;

- Floppy disk drive- read/write storage media
- Hard disk drive –read/write storage media/ storage devices
- Compact disk driver read only storage media
- Tape drive read /write storage media.
- Zip drive read/write storage media.

Other types of storage media include;

-MO disk – MO has the high storage capability of an optical disk but can be written over like a magnetic disk.
-PC card – A memory card has only storage capabilities.
Smart card- A smart card which is similar in size to a credit card or ATM card, stores data on a thin microprocessor embedded in the card.
-Microfilm and microfiche – Microfilm and microfiche are used to store microscopic images of documents on roll of sheet film.
-Online storage – Online storage, sometimes called an Internet hard drive, is a service on the Web that provides storage to computer users for free or for a minimal monthly free.

(ii) Give the function of each device named in (c)(i)

above (05 marks)

Output devices.

1. **Display device** is an output device that conveys text graphics, and video information to a user.
2. **Printer** – printing/pricing hard copies
3. **Audio Output Devices** – are the components of a computer that produce music, speech, or other sounds.
4. **Data projector** – Takes the image that displays on a computer screen and projects it into a larger screen so that people can see the image clearly.
5. **Facsimile machine** – Is a device that machine transmits and receives documents over telephone lines.
6. **Multifunction machine**- Is a single piece of equipment that provides the functionality of a printer, Scanner, copy machine, and a facsimile machine.
7. **Termia** – Is a device with a monitor and a keyboard.

Input devices

1. **Keyboard** –Input data/information/instructions.
2. **Mouse** –Input data/information instructions.
3. **Trackball** –Input data/information pointing device.
4. **Touchpad** –Input data/information device sensitive to pressure and motion.
5. **Joystick** –Pointing device with vertical lever for playing games ultra sound scanners.

6. **Touch screen** –Is a touch-sensitive display used for information kiosks located in departments and ATM.
7. **Light Pen** –pointing device that can detect the presence of light.
8. **Stylus and Graphics Tablet** –Is a pen like pointing device, which uses pressure to write text and draw lines.
9. **Digital Camera** –Takes pictures and stores the images digitally and can not work separately.
10. **Scanner** - Capturing is a light input device that converts printed txt and graphics into a digital form that can be further processed by the computer.
11. **Optical Character Recognition Reader** –These include a small optical scanner for reading characters and sophisticated OCR software for analyzing what is read.
12. **Optical Mark recognition Mark reader** –Used to sense hand written marks such as small circles or rectangles made on pre-printed forms in certain places.
13. **Barcode reader Magnetic Ink Character Recognition Reader** –Can input (read) text printed with magnetized ink.
14. **Magnetic Strip Reader** – Used to input (read) information contained in the magnetic strips on cards (e.g. credit cards)
15. **Microphone** –is input device that allows a user to speak to the computer to enter data and instructions into the computer.
16. **Voice Recognition Device** –is the computer's capability to distinguish spoken words.
17. **MDI Devices** – is the electronic music industry's standard that defines how sounds are represented electronically by digital musical devices.
18. **Digital Video Camera** –records video as digital signals rather than analog signals.
19. **PC camera** -Is a kind of DV Camera that allows home user to record, edit and

capture video and still images, and to make phone calls on the internet.

20.Web Cam –is a video camera whose output displays on a web page.

21.Sensor and Remote Sensor- is an input device that can detect external changes in an environment.

22.Termia– is a device with a monitor and a keyboard.

22. (a) Explain the following terms as used in computer studies:

(i) System software

(02 marks)

-System software consists of programs that control the operations of the computer and its devices.

-Systems software also serves as the interface between the user, the application software and hardware.

-Underlying software that is used by the computer to manage its own internal activities and run applications software.

(ii) Application software

(02 marks)

-Application software refers to programs that perform specific tasks for users.

Most application software is available as packaged software that can be purchased in retail stores or on the Web.

Software used to perform general purpose tasks e.g. word processing, spreadsheets.

(iii) Utility programs

(02 marks)

-A utility program is a type of system software that performs a specific task, usually related to managing a computer, its devices, or its programs.
Programs used to support, enhance, or expand existing programs in a computer.

(b) Outline four functions of operating system software.

Functions of an operating system include;

- Memory management
- Spooling print job
- Configuring Devices
- Monitoring System performance
- Administering security
- Managing storage media
- File management
- User interface
- Booting
- Managing e.g. processing.

(c) List any five operating systems that you know;
(05 marks)

Popular operating systems for microcomputers include:

- Operating System
- DOS
- Windows 3.x
- Windows 95
- Windows 98

- Windows NT Workstation
- Windows 2000 professional
- Windows XP professional
- Mac OS
- UNIX Linux Solaris
- Windows CE
- Windows ME
- Windows XP Home
- OS/2 Wrap
- Novell Netware
- Windows NT server
- Windows.NET server
- OS/2 Wrap Server for E-Business
- Palm OS
- Pocket PC 2002.

23. (a) Write the following in full in relation to computer. (03 marks)

RAM - Random Access Memory
ROM - Read Only Memory
EPROM Memory – Erasable programmable Read Only Memory

(b) Distinguish between primary storage and secondary storage devices, giving an example of each; (03 marks)

Primary storage **e.g. RAM, ROM**

- Memory is fast because it is accessed electronically and no mechanical components are involved.

- Most memory (except ROM, flash memory and CMOs) is volatile and contents must be transferred to backing storage before the computer is turned off.

- Memory is expensive and its storage size on a computer system is usually limited when compared with backing storage.

Secondary storage E.g. Hard disk, floppy diskette.

- Secondary storage or Backing storage is nonvolatile and contents stored are relatively more permanent when compared with memory.

- Backing storage provides a cheap and almost an unlimited amount of storage.

- Backing storage is slow because of the mechanical components involved.

Primary storage		**Secondary storage**	
1.	Internal storage	1.	External storage (may still be inside the system unit)
2.	Holds data and programs	2.	Stores data permanently

	for immediate processing		
3.	On the motherboard	3.	Not on the motherboard
e.g. RAM		e.g. Diskettes, Hard disks etc	

(c) (i) Name three major parts of the CPU.
(03 marks)

- Memory
- ALU
- Control Unit

(ii) Explain the function of each part in (c) (i) above

Main memory – also called memory, primary storage, internal memory, or random access memory (RAM), refers to working storage.
Main memory:
- Holds data for processing
- Holds instructions for processing the data
- Holds data after it has been processed**.**
- Holds processed data waiting to be sent as an output or to secondary storage device.

The contents of main memory are temporal, meaning that if you turn off your computer before saving your work, you will lose your latest edits.
It is characterized by fast access to information, low capacity and high costs. **ALU (Arithmetic/Logic Unit):**

The arithmetic and logic unit (ALU) performs the execution part of a machine cycle.

- It performs arithmetic operations and logical and also controls the speed of the operations and controls the speed of the operations.
- Specifically, the ALU performs the arithmetic, comparison, and logical operations.

Arithmetic operations include addition, subtraction, multiplication, and division.

- Comparison operations involve comparing one data item to another, and determine if the first item is greater than, equal to, or less than the other item.
- Logical operations work with conditions and logical operators such as AND, OR, and NOT.

The control unit:

- It directs and coordinates most of the operations in the computer.

For every instruction, the control unit repeats a set of four basic operations called the machine cycle or instruction cycle;

- "Tells" the rest of the computer how to carry out a program's instructions.

-An intranet that extends to authorize users outside the company is called an extranet.

24 (a) Explain the following;

(i) Telnet
02 marks)
 A terminal emulation protocol that allows a user to log onto a remote device. (computer)
 A protocol that enables one computer to establish a connection to another computer. The computer establishing a connection to another computer, and the computer accepting the connection is the remote computer.

(ii) FTP
(02 marks)
 File Transfer Protocol – is an Internet standard to upload and download files.

 File Transfer Protocol is a set of rules that enables files to be transferred from one computer to another.

(iii) Transmission Control Protocol /Internet Protocol
(02 marks)
- TCP/IP manages the transmission of data by breaking it up into packets. The protocol defines how to break the message into packets, provides routing information for message delivered and reassembles the message at the receiving end.
- Transmission Control Protocol is a suite or family protocols that governs the way data is transmitted across networks.

(iv) Intranet
(02 marks)
-Intranet is an internal network of organization that uses TCP/IP protocols, supports multimedia Web pages, and is accessible via a Web browser.

Intranet generally makes company information accessible to employees and facilitates working in groups.
-An intranet that extends to authorize users outside the company is called an extranet.
Intranet – an internal corporate network. It uses the Infrastructure and standards of the Internet and World Wide Web.
(d) What is a web browser? Give one example of a Web browser (03 marks)

- A web browser is a software program that allows a user to access and view web pages.
- A web browser software program that acts as an interface between the user and the World Wide Web.

It sends requests for information that is available on the Internet and displays the information for the user.

(Any one x 2 = 2 marks)
Examples of web browsers are;
- Internet Explorer
- Netscape Navigator
- Firefox
- Opera
- Konquerer

(Any one x 1 = 1 mark)

(e) State four major components of an e-mail message (04 marks)

- Address of recipient

- Subject Title
- Body
- Sender's name and address (signature)
- **Cc:** Carbon Copy
- **Bcc:** Blind Carbon Copy

25. (a) Define the following terms in relation to database.
(i) File
Is a collection of many records.
A collection of related records.

(ii) Record
A record is a collection of related data items concerning a person, product or event.
A collection of related fields
A row in a database table.

(iii) Field
 A field contains a specific piece of information within a record.

A unit of data consisting of one or more characters.
 It is a column in a database table.

(b) Name three functions of databases
- Data storage
- Data manipulation
- Data retrieval
- Data sorting
- Enhanced data integrity

- Application data independence
- Improved security
- Improved flexibility of information systems

(c) Outline four steps taken to create a simple database (04 marks)

- Planning
- Design layout
- File structure creation
- Defining the fields

(d) With an illustration, explain how a shop keeper can use spreadsheets to run the business. (05 marks)

The shopkeeper create s a spreadsheet to show items stocked, cost price, selling price, profits earned or expected.

Can create an income/expenditure spreadsheet to help calculate profit/Loss of the business.

Item	Stock	Cost price	Selling price	Total cost	Total sales	Profit
Sugar						
Salt						
Oil						
Beans						

Explanation including relevant field in shop keeping (05 marks) e.g. sales, profit, income, expenditure, analysis, forecast.

26 (a) Distinguish between the following as used in computers:

(i) (a) Data and Information;

- Data consists of raw facts and figures that are processed into information.
- Information is summarized data or otherwise manipulated (processed) data.
- Procedures are description of how things are done, steps for accomplishing a result.
- Information is processed data.

Data	**Information**
-Letters (e.g., a, b, c, d,…)	-Words (e.g., pen, book, car..)
-Words and symbols	-a report, a letter, an essay
-Numbers	-a mathematical formula
-Examination scores	-Comments, grades
-Musical notes	-A piece of music, song etc.

(ii) Domain name and IP address
(03 marks)

-Domain name –It is the text version of an IP address
Away to identify and locate computers connected to the Internet

uniquely for each organization.

-IP address (Internet protocol address a numeric unique identifier for a computer on the Internet) – It consists of four groups of numbers. Each separated by a period, which uniquely identifies each computer or device connected to the Internet.
-Unique, numeric identifier used to specify a particular host on a particular network.

(b) State two undesirable behaviors involving Internet (02 marks)

- Spam (containing unsolicited messages)
- Pirating (Illegal access to other user's messages)
- Watching immoral websites before you are 18 years of age
- Illicit material
- Abusive and threatening messages
- Hacking and cracking
- Impersonation

(c)(i) How does the use of the mouse make windows easier compared to the use of the keyboard alone?
(04 marks)

Advantages of using a mouse include;

- A mouse is user-friendly for computer beginners.
- A mouse is easy and convenient to use with a graphical user interface.
- Using a mouse to select items or move to a particular position on the screen is faster than using a keyboard.

- Can move easier any direction
- Convenient to use
- Saves time
- Can be operated by one hand

(ii) State any two major problems that often affect the proper functioning of the mouse.
(02 marks)
Disadvantages of using a mouse include;

- It is not easy and convenient to input text with a mouse
- Issuing commands by using a mouse is slower than by using a keyboard.
- It needs some practice in order to control a mouse properly.
- A mouse is not accurate enough for drawings that require high precision.
- A mouse usually requires a flat surface to operate
- A mouse needs more desk space to operate when compared with a trackball or touchpad.
- Dirt disrupts motion of the ball.
- Nature of surface need for mouse – must be suitable.
- Should not be too rough and not too smooth
- Disconnection of chord in case the mouse to the system unit one must be very careful to follow the direction of the pins.

(iii) Suggest any two ways the mouse can be protected from the problems in (c) (i) above.

- Cleaning the ball and rollers regularly.
- Providing the correct roll surface or mouse pad.

❖ Avoid mouse falling or hanging on the chord by tying twists on both the mouse and keyboard cables.

SECTION C:

27. (a) The head teacher of your school wishes to buy computers for the school.
As a student of computer studies, what type of computers would you
advise the Head teacher to buy and for what benefits are they to your
school?

The following would be considered;

- Brands
- Speeds
- Storage capacity
- Amount of RAM
- Network Card (NIC)
- CD-ROM, DVD Combo drives
- Multimedia
- Type of Monitor
- Warrant
- Pre-loaded software
- Other extras e.g. printer, cameras, UPS,
- Computer skills handling.

Benefits of computers at school:

Computerization of the school will bring the following advantages:

- Computers with communicating capability can share data

and information with other computers.

- Tasks can be completed faster because computers work at amazing speed.
- Computers can process large amounts of data and generate error-free
results, provided that the data is entered correctly.
- Computers can store enormous amounts of data for future use.
- The high reliability of components inside modern computers enables computers to produce consistent results.
- Efficiency and productivity can be raised.
- Running cost becomes lower in the long term.
- Tasks can be completed with little human intervention .
- The management can observe new information and new trends more quickly.
- Customer services can be improved due to more efficient management and operations.

Local Area Network (LAN) will bring the following advantages:

These are advantages of using a network.

- Facilitates communications because people can communicate efficiently and easily via e-mail, instant messaging, chat rooms, telephony, and video conferencing.
- Reduce cost by sharing hardware (i.e. a printer) and software (e.g., using a network version or site license of a program).
- Sharing data and information stored on other computers on the network.
- Allow tight control over who has access to what data.

If the school is connected to the Internet, the school will

benefit from the following;

People have different reasons for connecting to the internet which include;

- Do research and take online training courses.
- Download files, listen to music and watch movies.
- Send and receive messages to and from other connected users.
- Communicate with others around the world.
- Assess a wealth of information, such as news, weather, reports and airline schedules.
- Shop for goods and services.
- Use online banking services and manage investments.
- Access sources of entertainment and leisure, such as online games, magazines, and vacation planning guides.

Other benefits include the following:

- Globalization
- Education online
- Enhance communication
- Entertainment
- Advertising
- Promote research
- Exchanging knowledge
- Learning tool
- Publication
- Motivation

28. Suggest reasons why there is an increase in the use of computers in most organizations in Uganda today.

(Introduction to the topic = 1 mark)

- An increase of computers in Uganda means that Uganda is in the right direction because it is reducing the digital divide meaning that more ICT devices per person or the rate of increase of ICT devices used by every Ugandan is increasing.
  - This has been brought about by the following points;
- The government policy of introducing the ministry of ICT has boosted the increase of computers in the country, because this is where the technocrats who advise the government sit.
- Taxes on imports of computers and computer related devices have been reduced.
- Makerere University since 1995 has increased the rate of intake of students doing computer related courses, thus; more Ugandans are becoming computer literate.
- Uganda being a liberal economy many institutions have come up with computer related International courses and local courses. Thus more students or people are now able to use computers thus an increase in the use of computers.
- The computer business is booming in Uganda and the forces of demand and supply are taking their course thus computers have become cheap, meaning that they are affordable.
- Government policy of introducing computer studies at O'level and probably later in A-level has led to more Ugandans using computers.
- People in the entertainment industry with technological changes dictating have switched drastically to using computers for presenting their shows and producing and storing music e.g on CDs, DVDs, Projector shows and clip making, recording using computers to mention a few in the music industry.

Other fields which have caused increase of computers include areas where
Computers are applied in fields like;

- Health
- Education
- Research
- Entertainment
- Communication
- Police
- Industry…

Apart from that after one has had some computer education he/she will have realized that computers are advantageous in the following areas thus taking action or giving advice that computers play a big role in these areas below;

Advantages of using computers for information processing include;

- Computers with communication capability can share data and information with other computers.
- Tasks can be completed faster because computers work at amazing speed.
- Computers can process large amounts of data and generate error-free results, provided that the data is entered correctly.
- Computers can store enormous amounts of data for future use.
- The high reliability of components inside modern computers enables computers to produce consistent results.
- Efficiency and productivity can raised
- Running cost becomes lower in the long term.
- Tasks can be raised due to less human intervention.
- The management can observe new information and new

trends more quickly.

- Overall security can be raised due to less human intervention.

Advantages of using a network;

- Facilitates communications because people can communicate efficiently
- and easily via e-mail, instant messaging, chat rooms, telephony, and
- video conferencing.

- Reduce cost by sharing hardware (i.e. , a printer) and software (e.g. using
- a network version or site license of a program)

- Sharing data and information stored on other computers on the network.

- Allow tight control over who has access to what data.

In brief I conclude that the efforts and commitment towards Computing and Information Technology by the ICT ministry of Uganda is fundamental and deserves to be credited.

29. "Total data security is not possible today". Outline the areas where this has been achieved and challenged.

Total data privacy is not possible. Discuss.
(Introduction and Definition of data = 2 marks)

- Threats of data privacy -Hackers
- Theft of hardware -Crackers

- Theft of software -Employers
- Theft of software, copying
- use of storage media etc
- Outside users

Ways of securing the system; to ensure privacy:

- Physical security against theft.
- Identification and access controls.
- Use of cards, keys, signatures.
- Passwords, PINs (Personal Identification Numbers).
- Physical straits, biometrics.
- Encryptions.
- Audit controls.

Essay

Data consists of raw facts and figures that are processed into information.

Information is summarized data or otherwise manipulated (processed) data.

Procedures are description of how things are done, steps for accomplishing a result.

- Cyber crime refers to online or Internet-based illegal
- Threats of data privacy -Hackers
- Theft of hardware -Crackers
- Theft of software -Employers
- Theft of software, copying
- use of storage media etc
- Outside users

Ways of securing the system; to ensure privacy:

- Physical security against theft
- Identification and access controls

- Use of cards, keys, signatures
- Passwords, PINS
- Physical straits, biometrics
- Encryptions
- Audit controls.

Essay
-Data consists of raw facts and figures that are processed into information.
-Information is summarized data or otherwise manipulated (processed) data.
-Procedures are description of how things are done, steps for accomplishing a result.
-Cyber crime refers to online or Internet-based illegal acts.
Some of the more common computer security risks include;

- System failure
- Threats to data privacy
- Computer viruses
- Unauthorized access and use of computer systems
- Hardware theft and software theft
- Information theft and information privacy
- Theft of hardware
- Theft of software
- Hackers
- Crackers
- Outside users
- Employers

Viruses are often designed to affect, or infect, a computer negatively by altering the way it normally works without the

knowledge or permission of the owner.

- A boot sector virus executes when a computer starts up because it resides in the boot sector of a floppy disk or the master boot record of a hard disk.
- A file virus attaches itself to a program files, and is loaded into memory when the infected program is run.
- A macro virus uses the macro language of an application (e.g. word processor or spreadsheet) to hide the virus code.
- A logic bomb is a virus that activates when it detects a certain condition.
- A time bomb is a kind of logic bomb that activates on a particular date.
- A worm copies itself repeatedly in memory or on a disk drive until no memory or disk space remains, which makes the computer stops working.

- A Trojan horse is a program that hides within or looks like a legitimate program, but executes when a certain condition or action is triggered.

- A polymorphic virus modifies its program code each time it attaches itself to another program or file, so that even an antivirus utility has difficulty in detecting it.

Type of destruction	**Symptoms**
Massive destruction	-Attacks the formats of disks whereby any program or damage will be unrecoverable.
Partial destruction	-Erase and modification of a specific portion of disk affecting any files stored in that location.

Selective destruction	-Erase and modification of specific files or file groups.
Random havoc	-Randomly changing data on data or in memory during normal program execution or changing key-stroke values or data from other input/output.
Network saturation	-Systematically using up memory or space to impede performance or cause the system to crash.

Viruses are activated in three basic ways;

1. Running an infected program.
2. Starting up the computer with an infected floppy.
3. Opening an infected file.

Precautions to prevent virus infection include;

- Install an antivirus utility and update its virus definitions frequently for detecting and removing viruses.
- Never start up a computer with a floppy in the floppy drive.
- Set the security level for macros in an application so that the user can choose whether or not to run potentially unsafe macros.
- Ensure that the e-mail is from a trusted source before opening or executing any e-mail attachment.
- Write-protect the recovery disk before using it.
- Back up important files frequently.
- An antivirus utility is a program that prevents, detects, and removes viruses from a computer's memory or storage devices.
- One popular antivirus program is Norton Antivirus

- Unauthorized access is the use o a computer or network without permission.
- A cracker, or hacker is someone who tries to access a computer or network illegally.
- Unauthorized use is the use of a computer or its data for unapproved or possibly illegal activities.

Examples of unauthorized use of computers include;

- An employee using a company computer to send personal e-mail.
- Someone gaining access to a bank computer and performing an unauthorized transfer.
- One way to prevent unauthorized access and unauthorized used of computers is to utilize access controls.
- An access control is a security measure that defines who can access a computer.
- When the users can access the computer and what actions the users can take while accessing the computer.

Access control is normally implemented using a two-phase process;

(i) Identification verifies whether the user is a valid one
(ii) Authentication verifies that the user is really the one he or she claims to be.

Four methods of identification and authentication exist, which include;

- User names and passwords
- Possessed objects

- Biometrick devices
- Callback system
- User names and passwords
- A password is a combination of characters associated with a user name that allow a user to access a computer or a network.
- A possessed object is any item that a user must carry to gain access to a computer or computer facility.
- A personal identification number (PIN) is a numeric password, either assigned by a company or selected by a user.
- A biometric device authenticates a person's identity by verifying personal characteristics (e.g. fingerprints)
- It translates a personal characteristic into digital code that is compared with a digital code in the computer.
- **Examples of biometric devices include;**
- A fingerprint scanner, which captures curves and indentations of a fingerprint.
- A hand geometry system, which can measure the shape and size of a person's hand.

- A callback system connects a user to a computer only after the computer calls the user back at a previously established telephone number.

To initiate the callback system;

(i) The user calls the computer and then enter the correct user name and password.
(ii) The computer instructs the user to hang up and then calls the user back.

Hardware theft is the act of stealing computer equipment. The act of defacing or destroying computer equipment is known as hardware vandalism.

- Use physical access controls, such as locked doors and windows.
- Use cables to lock the equipment to desk, cabinet, or floor.
- Install alarm systems for additional security.
- Never leave a notebook computer or hand held computer unattended in a public place.
- Use passwords, possessed objects, and biometrics as a method of security.
- Backup all the files stored on the computer regularly.

Software theft;
Two common forms of software theft are;

- Physically stealing media (e.g. floppy disk, or CD-ROM) that contains software.
- Software piracy, which is the most common form of software theft.

- Information theft refers to someone stealing personal or confidential information from others.

Reasons for Information theft include;

- A company wants to learn about a competitor.
- An individual steals credit card numbers to make fraudulent purchases.
- Preventions for information theft include;

Implement access control to computer and networks.
Use encryption techniques.

- Information privacy refers to the right of individuals or organizations to deny or restrict the collection and use of information about them.
- A system failure is a prolonged malfunction of a computer that can also cause hardware, software, data, or information loss.

1. Ageing hardware
2. Natural disaster (e.g. fires, floods, storms, or earthquakes)
3. Electrical power variation.

-Electrical power variations can cause loss of data or equipment. A single power disturbance can damage multiple systems in a computer network.

-Electrical power disturbances can include;

- Files should be backed up regularly to prevent against data loss caused by a system failure.
- A backup is a duplicate of a file, program, or disk that can be used if the original is lost, damaged, or destroyed.

COMPUTER STUDIES
Paper 1
Oct./Nov.2007
2½ hours
SECTION A (20 marks)

Answer all questions in this section.

1. The Scientific milestone of using Integrated Circuits (IC) was a characteristic of the;
(A) First generation.
(B) Second generation
(C) Third generation
(D) Fourth generation

2. What major invention defined the second generation of computers?
(A) Magnetic cores
(B) Machine language
(C) Micro processor
(D) Transistors

3. A device that interprets and executes the instructions in the computer and also called the brain of the computer is the
(A) System Unit
(B) Base Unit
(C) CPU
(D) ALU

4. In which computer classification is the main frame categorized?
(A) Process
(B) Size
(C) Process power
(D) Purpose

5. Which of these factors does not affect internet speeds?
(A) Band width
(B) Type of media
(C) Traffic
(D) World Wide Web

6. Which one of the following is a set of impact printers?
(A) Inkjet printers
(B) Bubble Jet Printers
(C) Line Printers
(D) Thermal Printers

7. One way of protecting the information on a computer is ……..
(A) Defragmenting the disk
(B) Formatting the disk
(C) Sorting the data on the disk
(D) Backing up the data onto different media

8. Computer programs used in tasks such as removal of viruses or data compression.
(A) Word processors
(B) Desktop publishing
(C) Utility programs

(D) Communication programs

9. Which one of the following is not a word processor?
(A) Microsoft word
(B) Word wrap
(C) Word perfect
(D) Lotus word pro

10. The contents of an entire text file can be referred to as a;
(A) Document
(B) Word processor
(C) Paragraph
(D) Page

11. A mega byte is equivalent to……Kilobyte
(A) 1024
(B) 1048575
(C) 11534336
(D) 104857600

12. ……..are programs that manipulate numbers and figures and also perform advanced chart drawing.
(A) Word processors
(B) Databases
(C) Spreadsheets
(D) Presentation

13. This networking protocol **does not** relay information out of a LAN
(A) HTTP
(B) TCP/IP

(C) TELNET
(D) NETBEUI

14. ……is local area network of computers whose users use web pages and transmission protocols to communicate with each other on the network.
(A) Intranet
(B) Extranet
(C) Client server
(D) Internet

15. The basic use of **a primary key** in a database is to;
(A) Uniquely identify a record
(B) Act as an alternative identifier
(C) Sort records
(D) Modify a file structure

16.In …….software, a field is the entire column that contains similar data.
(A) Word processor
(B) Database
(C) Spreadsheet
(D) Presentation

17. The primary purpose of presentation software is to…….....
(A) create awareness, documents, letters and reports
(B) design, create and edit slides for overheads
(C) create and edit graphics

(D) Create news letters, brochures and booklets.

18.The process of comparing data entered in a database with a set of predefined rules or values to check if the data is acceptable is known as
(B) Browsing
(C) Validating
(D) Sorting
(E) Querying

19.Rights enforceable by law accorded to a developer of software is called
(A) Copyright
(B) Patent right
(C) Trade secret right
(D) Trade mark

20.The future generation of computers will be characterized by advanced robotics, computer vision-based mobile robots and;
(A) low processing systems
(B) expensive computer systems
(C) expert systems
(D) mechanical systems

SECTION B: (60 Marks)

Answer any **four** *questions. All the working* **must** *be done in the spaces provided.*

21.a) State any three **advantages** and any three **disadvantages** of dot matrix printers over laser jet printers.

Advantages
(03 marks)
i)……
……
ii)……
……
iii)……
……
Disadvantages
(03 marks)
i)……
……
ii)……
……
iii)……
….....

(b) Identify any **three** advantages of display devices such as monitors over
printers.

(03 marks)
(i)……
……
(ii)……..
.....
(iii)……
……

c)i) Distinguish between primary and secondary storages.
(02 marks)

i)……
……
ii)……..
……
iii)……...…
……

ii) Give an example of each type of storage in (C) (i) above
(02 marks)
……
……
……
……

iii) Identify **one** disadvantage of a hard disk over a floppy disk.
(01 mark)
……
……
……
……

d) State a device that should be acquired along with computer to help a user
save work when electricity is switched off.
(01 mark)
……
……
…….....

22a) i) What do you understand by the terms below in reference to word
processing?
(03 marks)

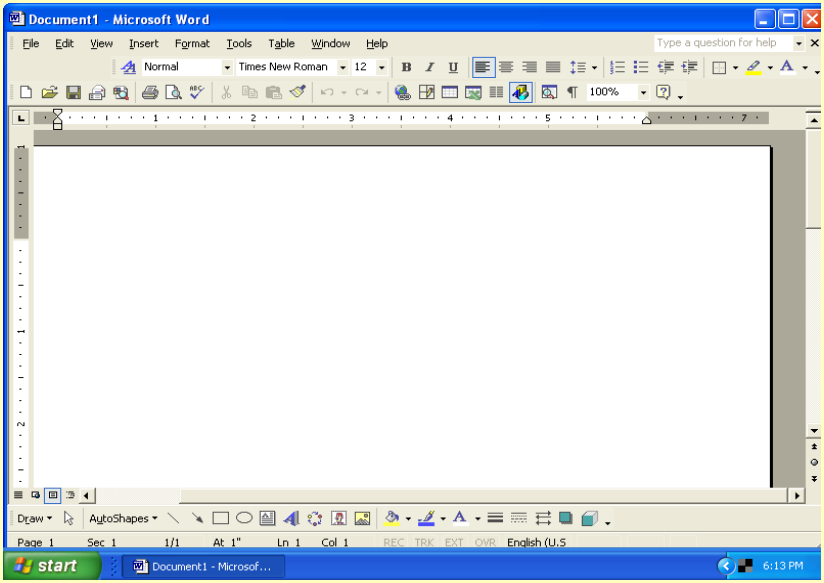
Formatting……
……
Editing……
……
Saving……
……

iii) Give **two** advantages of a hard copy over a soft copy.
(02 marks*)*
……
……
……
b) Identify **four** advantages of using a word processing software instead of an
ordinary typewriter.
(04 marks)
……
……
……
c) Describe **one** situation where it is more beneficial to use Desktop publishing
software instead of word processing software.
(03 marks)
……
……
……

d) Name the labeled bars on a word processing screen below:
(03mark)

x

X.....


Document1 - Microsoft Word
File Edit View Insert Format Tools Table Window Help
Type a question for help
Normal
Times New Roman
12
100%
Draw
AutoShapes
Page 1 Sec 1 1/1 At 1" Ln 1 Col 1 REC TRK EXT OVR English (U.S
start
Document1 - Microsof...
6:13 PM

Y.....

Z.....

Y

z

23. The worksheet below shows company bills (in dollars) paid for the months of July, August and September:

	A	B	C	D	E	F
1		July	Aug	Sept	Total ($)	Average ($)
2	Rent	72	72	106	250	83.33
3	Electricity	24	0	66	90	30.00
4	Telephone	96	90	114	300	100.00
5	Stationery	48	38	64	150	50.00
6	Total	240	200	350	790	

(a) Write down the formulas to calculate:

(i) Totals for the months of July, August and September (04 marks)

Rent……
……

Electricity……
……

Telephone……
……

Stationery……
……

(ii) Averages for the months of July, August and September

300

(04 marks)

Rent……
……

Electricity……
……

Telephone……..
.....

Stationery……
……

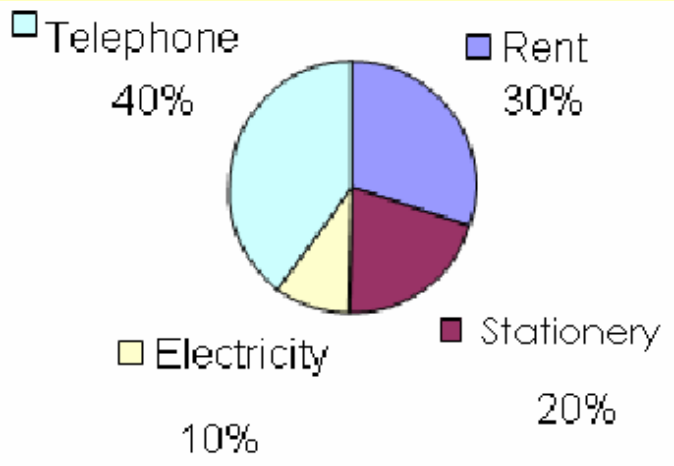
b) It is an error to enter zero (o) in cell C3. State the cells in which the values would change automatically when the correct amount is put……

(03 marks)

c) List the values in the B3:D4 in the above table.
(02 marks)

……
……
……

d) Shade on the worksheet above the cells that must be used to create a pie
chart below:
(02 marks)



24.a) Explain the following terms;

i) Hyper link
(02 marks)
……
……

ii) Web browser (Give examples)
(02 marks)
……
……

iii) Web master
(02 marks)
……
……

iv) Web site
(01 mark)
……
……
……

b) i) Write **URL** in full and state its use
(02 marks)
……
……
……

ii) Give **two** examples of **URL**
(02 marks)
……
……
……

c)i) What is an **ISP** in full in relation to internet?
(01 mark)
……
……
……
ii) State the use of an **ISP**
(01 mark)
……
……
……
iii) State any three factors that should be considered in choosing an **ISP**

(03 marks)
……
……
……

25.a) Describe briefly the functions of the following views as

used in presentation
software:

i) **Outline view**
(02 marks)
……
……
……
ii) **Slide sorter view**
(02 marks)
……
……
……
iii) **Notes pages view**
(02 marks)
……
……
……

b) What is **Auto content wizard** in presentation software?
(02 marks)
……
……
……

c) i) What is **Slide Show** as used in presentations?
(02 marks)
……
……
……

ii) Explain the following terms as used in a **Slide Show:**

Transitional effect
(02 marks)
……
……
……

Timing
(02 marks)
……
……
……

d) What is a **Master Layout** is used in presentations?
(01 mark)
……
……

26. a) i) What is a Database Management System (DBMS)?
(02 marks)
……
……
……

ii) Give any three examples of (i) above
(03 marks)
……
……
……

b) Various DBMS use different data types. Specify any **five** data types used in DBMS.

(05 marks)

.....
.....
.....

c) State any **five** advantages of using Database Management Systems Instead of manual databases.
(05marks)

……
……
……
……
…….....

SECTION C (20 marks)

*Answer only **one** question from this section.*

27. Describe the various categories of computer application software available today.
(20 marks)

28. Reasonably predict future in computing; from the perspective of the past and the present developments in the technology and use of computers.

(20 marks)

29. Describe the merits and Demerits of using Internet.
(20 marks)

SOLUTIONS TO UNEB PAST PAPER P840/1 - 2007

SECTION A:

1. C	2. D	3. C	4. B	5. D
6. C	7. D	8. C	9. B	10.A
11.A	12.C	13.D	14.A	15.A
16.B	17.B	18.B	19.A	20.C

SECTION B:

21.(a) State any three advantages and any three disadvantages of dot matrix printers over laser jet printers.

Advantages

- They are Inexpensive compared to non impact types.
- They can use stencils very well unlike any other non impact type.
- They can print on triplicate document because of the striking mechanism.
- They are able to use continuous paper rather than requiring individual sheets, making them useful for data logging unlike some of the non impact type.
- Can print on multi-part stationery or make carbon copies.
- They can withstand dusty environment, vibrations and extreme temperature.
- They are good, reliable workhorses ideal for use in situations where printed content is more important than quality.

Disadvantages

- They are usually slow unlike non impact types like laser jet printers.
- They are noisy when printing unlike laser jet type.
- They can only print low resolution graphics, with limited color performance and limited quality contrary to laser jet printers.
- They are not readily available on the market.
- They are not easily serviced because they are based on old technology.
- They are limited to only two colours i.e (black and red)

(b) Identify any three advantages of display devices such as monitors over Printers.

Advantages

- Output can be modified or changed easily
- They are generally quiet
- No need of paper
- Scrolling enables focus on a particular or part of the document
- Transmission to another device is faster e.g on a LAN
- The display devices are the user's workplace, there making it easier to use
- The time taken to display the image is fast
- Screen displays can include text, graphics and colour

(c)(i) Distinguish between primary and secondary storages.

Primary storages refer to temporary storage of information the computer is currently working on or Primary storage can refer to basic storage when used to refer to RAM and ROM.

While
Secondary storage is permanent storage of information for future retrieval. Or Secondary storage refers to backup storage facilities supplementing RAM.

(ii) Give an example of each type of storage in (c) above (02 marks)

-For Primary storage -**RAM** is an example

-For Secondary storage (Auxiliary storage); They are of two major cateories i.e

❖ Magnetic storage media e.g Hard disks, Floppy disk, Flash disks, Magnetic tapes etc
❖ Optical storage media e.g CD-ROM, Digital Versatile Disc (DVD), CD-R, CD-RW etc

(iii) Identify one disadvantage of a hard disk over a floppy disk. (01 mark)

- A hard disk is less portable compared to a floppy disk.
- A hard disk is costly in terms of cost per unit of data.
- Data becomes less secure if left on the hard disk
- Head crash may occur due to extreme shock or contaminations
- Since hard disks are metallic they expand and contract depending on changes in temperatures, this may cause data loss.

This is one of the factors that led to air conditioning of computer rooms.

- Disks may fail due to violet shaking (vibrations)
- Disks are affected by magnetics field since their storage media is made of the same material.
- Hard disks are susceptible to virus attacks.

(d) State a device that should be acquired along with computer to help a user save work when electricity is switched off.
(01 mark)

-An Uninterruptible Power Supply (UPS), also known as an Uninterruptible Power Source.

-It maintains a continuous supply of electric power to connected equipment by supplying power from a separate source when utility power is not available.

22.(a) (i) What do you understand by the terms below in reference to word processing?

Formatting – It refers to making changes to the appearance of a document.

Editing – It refers to the reviewing and changing a document by making
additions, deletions, or other changes to conform to some agreed-upon standard.

Saving - It refers to copying data from a temporary area (memory) to a more permanent storage medium (secondary storage) e.g. a floppy disk, flash disk etc.

ii) Give two advantages of a hard copy over a soft copy.

- A hard copy can be easily accessed by both the poor and rich readers.
- It cannot be easily changed without tracing.
- It can be read off-line namely without a computer
- It is cheaper compared to softcopy, which requires computer devices to be able to read the information / data
- Hardcopies last longer if stored in a safe place compared to softcopy, which must be all the time changed with the technological developments taking place

b) Identify four advantages of using a word processing software instead of an ordinary typewriter.

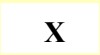
- The great advantage of word processing over using a typewriter is that you can make changes without retyping the entire document. I.e. Inserting, deleting, spacing, underlining, formatting, cut and paste etc.
- Documents can be previewed before printing
- Documents can be saved for future use
- Convenient to create for letters and mailing labels
- Possible to create a new document from an existing one etc
- They offer additional features like:
- Word wrap
- Find search
- Replace
- Spelling checker
- Automatic page numbering

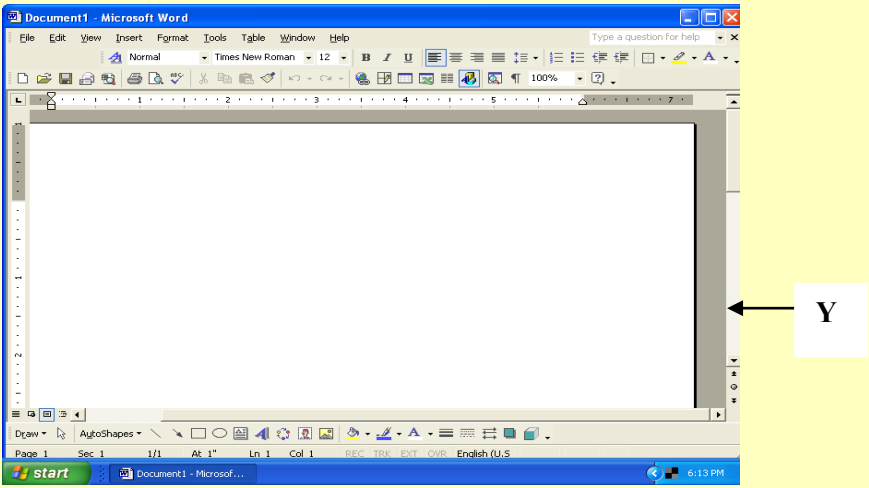
- Multi-columns
- Clip art gallery
- Mathematical formulae typesetting
- Templates
- Printing one, any page, whole document and many documents

(c) Describe one situation where it is more beneficial to use Desktop publishing software instead of word processing software.

- The main advantage of DTP is that it is **frame based**.
- Text and picture frames can be laid out on the page, and moved and resized if necessary.
- DTP are often used to produce newspapers, magazines and leaflets. A word processor is not always the best package to use to produce such documents.
- DTP software includes colours libraries to ensure that colours will print exactly as specified.
- DTP software supports colour separation for producing the master copies used in the final presswork.
- They also have several standard templates, which are ready for use
- Very high quality print with a lot of creativity needed e.g in printery, graphics designers, the press etc

d) Name the labeled bars on a word processing screen below;





Z

X – Menu bar
Y - Scroll bar (vertical)
Z – Status bar

23.The worksheet below shows company bills (in dollars) paid for the months of July, August and September:

	A	B	C	D	E	F
1		July	Aug	Sept	Total ($)	Average ($)
2	Rent	72	72	106	250	83.33
3	Electricity	24	0	66	90	30.00
4	Telephone	96	90	114	300	100.00
5	Stationery	48	38	64	150	50.00

6	Total	240	200	350	790	

(a) Write down the formulas to calculate;

(i) Totals for the months of July, August and September

-Rent @ or SUM(B2:D2) or B2+C2+D2
-Electricity @ or SUM(B3:D3) or B3+C3+D3
-Telephone @ or SUM(B4:D4) or B4+C4+D4

(ii) Averages for the months of July, August and September.

-Rent @ or SUM(B2:D2) or B2+C2+D2
-Electricity @ or SUM(B3:D3) or B3+C3+D3
-Telephone @ or SUM(B4:D4) or B4+C4+D4
-Stationery @ or SUM(B5:D5) or B5+C5+D5

(b) It is an error to enter zero (o) in cell C3. State the cells in which the values would change automatically when the correct amount is put.

When the correct amount is put, cells**;**

-E:3, F:3, C:6, and **E:6** would change automatically.

c) List the values in the B3:D4 in the above table.
-The values are 24, 66, 96, 90, 114 and 0

d) Shade on the worksheet above the cells that must be used to create a pie chart below:

	A	B	C	D	E	F
1		July	Aug	Sept	Total ($)	Average ($)
2	Rent	72	72	106	250	83.33
3	Electricity	24	0	66	90	30.00
4	Telephone	96	90	114	300	100.00
5	Stationery	48	38	64	150	50.00
6	Total	240	200	350	790	

24.(a) Explain the following terms;

(i) Hyper link
(02 marks)
-A hyperlink is a graphic or a piece of text in a Web page that link readers to another Webpage, or another portion of a document.

(ii) Web browser (Give examples)
(02 marks)
-**A web browser** is a software application that enables a user to display and interact with Web pages or HTML documents.

Examples are;
- Microsoft's Internet Explorer
- Netscape Navigator
- Opera
- Mozilla's Firefox

- Mac Safari: Specifically for Mac users

iii) Web master
A Webmaster is a practitioner of web or a system administrator for a World Wide Web server. Typically, he is a generalist with HTML expertise who manages all aspects of Web

iv) Web site
A Web site is a collection of Web pages, images, videos or other digital assets that are hosted on a single or several Web servers, usually accessible via the Internet, cell phone or a LAN.

b) i) Write URL in full and state its use
It is an abbreviation for Uniform Resource Locator.
It is the global address of documents and other resources on the World Wide Web.

ii) Give two examples of URL ;

- http://www.yahoomail.com
- http://www.campuser.net
- http://www.mak.ac.ug
- http://www.google.co.ug

(c)(i) What is an ISP in full in relation to internet?
ISP – It is Internet Service Provider.

ii) State the use of an ISP

❖ An address that points to a specific resource on the web e.g (addressing schemes used;

- to link resources on the web)
- to operate LANs connected to the World Wide Web
- to connect organisations and individuals to the web
- to also provide technical support

iii) State any three factors that should be considered in choosing an ISP.

There are several factors that will influence your choice of ISP, these include: --

- Speed
- Packages and equipment
- Bandwidth of the ISP
- Nature of customers
- Past experience
- Administrative support / Budget
- Software used
- Consultancy from technical specialist in that field

25. a) Describe briefly the functions of the following views as used in presentation software:

i) Outline view

Enables one to edit and display all presentations text in one location instead of one slide at a time.

ii) Slide sorter view

-A view where you can see all slides of a presentation at once.

It is good for arranging and organizing your slides.

iii) Notes pages view

-A view where you can type or edit text for the currently selected slide.

b) What is **Auto content wizard** in presentation software?

It is a presentation design wizard with templates and ideas for a variety of presentation types that one can choose from to edit and create a customized presentation.

(c) (i) What is **Slide Show** as used in presentations?

It displays one's slide in sequence, moving from one slide to another, transitioning (changing)with special effects that one has set up, and moving at a present timing that one can control.

(ii) Explain the following terms as used in a Slide Show:

Transitional effect

-These are different styles in which slides come and leave the screen during a presentation. It also includes timing, mouse click, transitions sound effects.

Timing

-This is where options are given and you set the speed at which transition effect runs. Here options are set i.e. slow, medium or fast.

d) What is a Master Layout is used in presentations?

This is a term used / applied to a presentation over all design.

26. a) i) What is a Database Management System (DBMS)?

-It is an application such as Microsoft Access that enables the user to collect information/data, manipulate and query a database on a computer.

ii) Give any three examples of (i) above

- Ms Access
- Structured Query Language Server (SQL)
- Oracle
- Sybase Adaptive Server Enterprise
- Dbase
- MYSQL
- Firebird

(b) Various DBMS use different data types. Specify any five types used in DBMS

(i) text
(ii) Numeric
(iii) Data/ Time
(iv) Currency
(v) Memo
(vi) Boolean
(vii) OLE
(viii) lookup wizard

c) State any five advantages of using Database Management Systems Instead of manual databases.

Database Management Systems enables;

- Improved strategic use of corporate data.
- Reduced data redundancy and inconsistency.
- Enhanced data integrity.

- Application data independence.
- Improved security.
- Improved flexibility of information systems.
- Increased access and availability of data and information.
- Reduced application development and maintenance costs.
- Performing complex retrieval and data manipulation tasks based on queries.
- Handling of personal and unofficial data so that user can experiment with. alternative solutions based on their own judgment.
- Interrelation of data from different sources.

-In simple English terms you can say;

- Easy to update
- Easy to retrieve data
- Easy to manipulate data (data manipulation)
- Concurrency
- Easy sorting
- Security
- Can be shared

SECTION C

27. Describe the various categories of computer application software available today.

Applications software (also called *end-user programs*) includes database programs, word processors, and spreadsheets.

The following categories describe different kinds of software applications that would be suitable for different tasks;

Because there are so many different uses for computers, there

are a correspondingly large number of different application programs that perform different tasks;

- **Tailor-made application software** addresses a specific or unique business need for a company.
- **Off-the-shelf application software** can be purchased, leased, or rented from a vendor that develops programs and sells them to many organizations (Vertical Markets).
- **General-purpose application programs** that are not linked to any specific Business task, but instead support general types of information processing.

General software categories;

- **Packaged / off-the –shelves software** i.e commercial software, which is copyrighted and designed to meet needs of a wide variety of users.

- **Custom / tailored / bespoke software** i.e applications designed and developed at a users request to satisfy personal data processing needs.
- **Freeware i.e copyrighted software** provided at no cost to users.
- **Shareware i.e copyrighted software** distributed free for the trial period, and payment is required for continued use after the trial period.
- **Public domain software** i.e free software donated for public use with no copyright restrictions.

Specific application software categories, functions and examples

❖ Packages / off-the-shelves software

- Word processors – Ms word, word perfect, notepad, Wordpad, Lotus WordPro Corel WordPerfect. etc
- Spreadsheets – Ms Excel, Lotus 1-2-3, Corel, QuattroPro. etc
- Database management systems – Dbase, Access, Lotus Approach Corel Paradox. etc
- Web authoring software – DREAMWEAVER, HTML, JAVA, etc
- Education software – Encarta, etc
- Communication software – (Browser, e-mail, video conferencing software)
- Entertainment software – windows and Nero media plater, Power DVD, etc
- Accounting and finance applications – sage, sand systems, Pastel, Tally, Point of sales, etc

❖ Desktop publishing application – Publisher, etc

- Video and image editing software
- Presentations software – power point, etc

❖ Custom / tailored / bespoken software e.g

- School Management System
- Banking systems
- Insurance systems
- Payrolls systems

- ❖ Freeware – games e.g
- Dave
- Solitaire
- Antivirus software e.g AVG

- ❖ Shareware – Antivirus software e.g
- McAFee, Kaspersky
- Computer Car driving simulations
- MySQL
- VBNET

- ❖ Public domain software – e.g
- Parliament news
- News papers e.g New vision, The Monitor, etc

28. Reasonably predict future in computing; from the perspective of the past and the present developments in the technology and use of computers.

The present development in the technology use of computers. *(The following points need to be explained)*

- Faster processors
- Smaller sizes
- Voice recognition perfected machines
- Voice synthesis
- Artificial Intelligence
- Computer vision
- More expert systems
- More need for computer skills

- Use of natural interface i.e. human being communicating with a computer by talking to it and getting the right answer.
- Cyber world over dependency on the internet for e.g shopping, weather forecasting, ticket booking, banking, e-business etc
- Computer tools becoming more user-friendly e.g more friendly spreadsheets, word processors, databases and interactive application.
- Increased use of hybrid and neuron logic systems
- Computer use and programming are expected to be more and purely interactive or conversational etc.

Demerits

- More invasion of privacy of individuals
- Unemployment as more and more less skilled people get retrenched and their roles taken over by more efficient IT experts.
- Increased crime through IT related forgeries, piracy, Internet scams, plagiarism etc
- Continued isolation of man and erosion of the socio aspect of work
- Moral problems through access of pornographic materials on networked computers.
- Increased instability in man being all the time insecure for his future and is compelled to learn new things every now and then.
- Isolation of old people being hard for them to cope with the many IT changes
- The widening gap between the rich and the poor as the rich can now produce faster using IT technology e.g robots and flood the markets

- IT related health problems e.g eye sight, repetitive strain injury, etc
- Computer addiction by young people e.g playing games and over surfing
- Virus threats making data storage on computers very insecure installation and maintenance costs.

....

29. Describe the merits and Demerits of using Internet.

The Internet is a network of computers spanning the globe.

The following are the merits of the Internet;

- **Information**

Information is probably the biggest advantage internet is offering. The Internet is a virtual treasure trove of information. Any kind of information on any topic under the sun is available on the Internet. The search engines like Google, yahoo is at your service on the Internet. You can almost find any type of data on almost any kind of subject that you are looking for. There is a huge amount of information available on the internet for just about every subject known to man, ranging from government law and services, trade fairs and conferences, market information, new ideas and technical support, the list is endless.

- **Research**

Students, Teachers, Lecturers and children are among the top users who surf the Internet for research. Today, it is almost required that students should use the Internet for research for the purpose of gathering resources. Teachers have started giving assignments that require research on the Internet. Almost every coming day, researches on medical issues become much easier to locate. Numerous web sites available on the net are offering

loads of information for people to research diseases and talk to doctors online at sites such as, America's Doctor. During 1998 over 20 million people reported going online to retrieve health information.

❖ **Public Services.**

Many services are now provided on the internet such as online banking, job seeking and applications, and hotel reservations. Often these services are not available off-line or cost more.

❖ **Communities.**

Communities of all types have sprung up on the internet. Its a great way to meet up with people of similar interest and discuss common issues.

❖ **Communication**:

The foremost target of internet has always been the communication. And internet has excelled beyond the expectations .Still; innovations are going on to make it faster, more reliable. By the advent of computer's Internet, our earth has reduced and has attained the form of a global village.
Now we can communicate in a fraction of second with a person who is sitting in the other part of the world. Today for better communication, we can avail the facilities of e-mail; we can chat for hours with our loved ones. There are plenty messenger services in offering. With help of such services, it has become very easy to establish a kind of global friendship where you can share your thoughts, can explore other cultures of different ethnicity.

❖ **Entertainment**

Entertainment is another popular reason why many people prefer to surf the Internet. In fact, media of internet has become quite successful in trapping multifaceted entertainment factor. Downloading games, visiting chat rooms or just surfing the Web are some of the uses people have discovered. There are numerous games that may be downloaded from the Internet for free. The industry of online gaming has tasted dramatic and phenomenal attention by game lovers. Chat rooms are popular because users can meet new and interesting people. In fact, the Internet has been successfully used by people to find life long partners. When people surf the Web, there are numerous things that can be found. Music, hobbies, news and more can be found and shared on the Internet.

❖ **E-Commerce**

Ecommerce is the concept used for any type of commercial maneuvering, or business deals that involves the transfer of information across the globe via Internet. It has become a phenomenon associated with any kind of shopping, almost anything. You name it and Ecommerce with its giant tentacles engulfing every single product and service will make you available at your door steps. It has got a real amazing and wide range of products from household needs, technology to entertainment.

❖ **You reach a global audience;**

By this I mean, you don't have to set up a shop some where and sell to the locals. You can set up an online shop, and sell to any one in the world. This means a huge increase in potential revenues and a fraction of the cost it would take for you to set up shops all over the world.

❖ **Low cost;**

The Internet is made of electrons, so there is not really anything physically to grab hold of like in a brick and mortar business. This considerably reduces your costs, as you don't really need many materials or buildings. Just a computer with WWW capabilities.

Demerits of the Internet

❖ **Theft of Personal information**

If you use the Internet, you may be facing grave danger as your personal information such as name, address, credit card number etc. can be accessed by other culprits to make your problems worse.

❖ **Can leave the businessmen feeling isolated**

This is very common. Because the WWW is faceless (In most cases), It can appear cold and inhuman. This can leave you feeling isolated and very inward. Not a nice feeling at all. Everyone likes to socialize and meet people, but in this case, it's quite difficult in business anyway.

❖ **Hard to tell if people are lying**

There is so much information on the World Wide Web now; It's sometimes hard to tell the difference between crap and quality. A lot of the crap is targeted at newbie's. Here is an example "Make money fast by doing **NOTHING**", Sound familiar? I bet you have had a ton of e-mails saying something similar.

❖ **Information Overload**

Once again we get to the part of there being a lot of information on the World Wide Web. There can too much good information too. There can be a lot of competition for an industry; this can

leave you more confused than if there were presented with loads of crap. You might not be able to tell whom to choose. If you are a veteran of the net, You won't have much to worry about, however if you are new then this is a problem.

❖ **Spamming**

Spamming refers to sending unwanted e-mails in bulk, which provide no purpose and needlessly obstruct the entire system. Such illegal activities can be very frustrating for you, and so instead of just ignoring it, you should make an effort to try and stop these activities so that using the Internet can become that much safer.

❖ **Virus threat**

Virus is nothing but a program which disrupts the normal functioning of your computer systems. Computers attached to internet are more prone to virus attacks and they can end up into crashing your whole hard disk, causing you considerable headache.

❖ **Pornography**

This is perhaps the biggest threat related to your children's healthy mental life. A very serious issue concerning the Internet. There are thousands of pornographic sites on the Internet that can be easily found and can be a detrimental factor to letting children use the Internet.

Though, internet can also create havoc, destruction and its misuse can be very fatal, the ***advantages*** of it outweigh its ***disadvantages.***

COMPUTER STUDIES
Paper 1
Oct./Nov.2008
2½ hours

SECTION A (20 marks)

Answer all questions in this section.

1. Computer system configuration information is stored in …….
   A. CMOS.
   B. BIOS.
   C. RAM
   D. CD-ROM.
2. All files ending with the following extensions are executable except……
   A. bat
   B. com
   C. exe.
   D. dos.
3. A……. is a computer output device.
   A. light pen
   B. Plotter
   C. digital camera
   D. scanner
4. What is the meaning of the term range as used in spreadsheets?
   A. Intersection of rows and columns.

B. A reference to a particular cell.
C. A group of adjacent cells.
D. A collection of worksheets.

5. The term TCP/IP refers to……..
A. Translated Control Protocol / Internet Protocol
B. Transmission Control Protocol / Internet Protocol
C. Transmission Control Protocol / Internet Protocol
D. Transmission Control Protocol / Information Protocol

6. …… is an example of a presentation program.
A. Excel
B. Lotus 1-2-3
C. Access
D. Power point

7. The device that stores programs and data when working with a computer and is lost when power is switched off is ……
A. CPU.
B. ROM.
C. GUI.
D. RAM

8. Which of the following is necessary for running application software?
A. Operating system.
B. Network Interface Card
C. Utility program
D. Graphical User Interface.

9. When the pointer on a computer screen does not move well, what device is more likely to be causing the problem?
A. Pentium processor
B. Key board

C. Mouse
D. Monitor

10. Which of the following attaches itself to a program in your computer?
A. Computer virus
B. Computer bug
C. Computer object.
D. Computer

11. Which of the following statements are correct?
1 Each web browser has a unique IP address.
II HTTP is an communication protocol.
III An internet domain may be referred to as HTML
IV The internet is a network of network.
A. 1 & 11 only.
B. 1, II & III only.
C. 11 & IV only.
D. 11, 111 & IV only

12. A…….. is a term used in web design to correct one document or file to another.
A. linker
B. hyperlink
C. hypertext
D. hyper web.

13. The text which appears in the lower margin of a page is called a …….
A. header.
B. gutter
C. margin
D. footer.

14. Which of the following is not a representation of a type of network topology?

A. Hub
B. Ring.
C. Bus
D. Star.

15. Files containing highly structured and organized data are……..
A. documents.
B. worksheets.
C. databases.
D. communications

16. An area of artificial intelligence that simulates certain experiences using special headgear, gloves and software that translates data into images is ……...
A. Collaborative technology.
B. Virtual reality
C. Hypermedia
D. Shell

17. Tables are primary requirements most applied to ……..
A. word processing.
B. presentations.
C. web publishing
D. databases.

18. …… invented the tabulating machine that was used in the USA population census in the 18th Century.
A. Blaise Pascal
B. Hollerith
C. Napier
D. Aiken

19. Achen wants to get some information from the internet on designing success cards for he Fine Art examination. What kind of software would she need to use to get this information?

A. Web browser.
B. Web authoring soft ware.
C. E-mail software.
D. Desktop publishing.

20. The points of connection between a computer (motherboard) and its peripherals are …….
A. network cards.
B. ports.
C. cables
D. sockets

SECTION B: COMPULSORY (60 MARKS)

Answer all questions in this section. All the working must be done in the spaces provided.

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

……
……

……
……...

(b) Mention four main characteristics of first generation computers.

(04 marks)

(i)

……
……..…

……
……

(ii)

……

……

(iii)

……

……

(iv)

……

……

(c) How do the second generation computers differ from fifth generation computers? List down four differences.

(04 marks)

(i) ……

……

(ii)

……

……

(ii)……

……

……

……

(iv)

……
……..……..……
……
……...…….

22. The database below contains data about items that have been ordered from various suppliers.

SUPPLIER	CODE	DELIVERY DATE	PRICE (S)
AD12	2146	28/09/07	44.99
CO35	3724	30/09/07	249.50
MO18	5613	05/10/07	98.15
L047	5613	11/10/07	102.75
P029	7215	17/10/07	127.50
RO16	4639	19/10/07	22.89

(a) State the data types of fields in the given table.
(04 marks)

(i)
SUPPLIER……
……..

(ii)
CODE……
…….

(iii) DELIVERY DATE…….

(iv)
PRICE……
……

(b) The following search condition is input

(CODE=5613) AND (PRICE) ($) < 100).

Write down the output using only the SUPPLIER field. *(01mark)*

……
……
……
……

(c) Which down a search condition that will search for all items with a price more than $50 that will be delivered in October. *(03 marks)*

……
……
……
……...

(d) Write down the output using only the SUPPLIER field if the records were sorted in descending order. *(02 marks)*

……
……
……
……

23. (a) (i) What is a spreadsheet? *(02 marks)*

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……
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……

ii) Give three examples of spreadsheet software. (*03 marks)*

……
……

……
……

(b) Name three types of data that can be placed in a spreadsheet cell.

(03 marks)

(i)
……
……

(ii)
……
……

(iii)
……
……

(c) What is a chart in spreadsheets?
(02 marks)

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……..

24. (a) In relation to computers, explain the meaning of the following terms.

(02 marks)

(i)
Intranet……
……

……
……

(ii)
Internet……
……...
……
……

(b) (i) Outline three benefits of networking computers.
(03 marks)

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(ii) Outline three demerits of networking computers.
(03 marks)

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……

(c) What is a server in a computer network?
(02 marks)

……
……..
……
……..

25.(a)A computer system is a composition of several components. List any four components that make up a computer system. ***(04 marks)***

(i) ……

(ii) ……

(iii) ……

(iv) ……

(b) Briefly, explain the function of any three components you have given in (a) above.

(i) ……
……
……
……

(02 marks)

(ii) ……
……
……
……
……
……

(02 marks)

(iii) ……..……...
……...

(02 marks)

26. (a) (i) Explain what is meant by the term Operating system.

(02 marks)

……
……
……
……
……
……

(ii) Give any two features of a graphical interface.
(02 marks)

……
……
……
……

(b) (i) Describe as precisely as possible the use of each of the following features:

List Box *(02 marks)*

……
……
……
……

Drop down list

……
……
……
……

(ii) Clearly state one example where anyone of the above features in
(b) (i) can be used.

……
……
……
……

SECTION C: (20 MARKS)

Answer only one question from this section. Answer to the question must be done in the answer booklet provided.

27. " Computers are a necessary requirement." How do computers affect people in every day life?

(20 marks)

28. (a) Explain what is meant by volatile and non volatile when referring to primary memory.

(04 marks)

(b) Explain the advantages and disadvantages of using primary and secondary storage devices.

(16marks)

29. What are the possible characteristics of the future generation of Computers?

(20 marks)

ANSWER TO UNEB -2008

SECTION A: (20 MARKS) – UNEB – 2008

Answer all questions in this section

SECTION B: COMPULSARY (60 MARKS)

1	A	6	D	11	C	16	B
2	D	7	B	12	B	17	D
3	B	8	A	13	D	18	B
4	C	9	C	14	A	19	A
5	C	10	A	15	C	20	B

SECTION B (60 MARKS)

Answer all questions in this section. All the working must be done in the spaces provided.

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

Evolution of computers- refers to the technological advancement in the development of computers over a period of time. Its grouped into the first to the fourth, and the coming fifth generations.

(b) **Mention four main characteristics of first generation computers**

(04 Marks)

First generations 1946-1956
Technological development or innovations

- The first generation of computers relied on vacuum tubes to store and process information
- They used magnetic drum memories
- They maximum memory size was approximately 2000 bytes (2 kilobytes)
- The speed was 10 kilo instructions per second
- Used punched cards for input and out put
- Programming was done in machine and assembler languages setbacks included:
- Limited primary memory
- Consumed a great deal of power and generated a great deal of heat.
- They were short lived and needed a standby technician
- Weighed about 30 tons

Example of computers in the generation included:
ENIAC Electronic Numerical Integrator and Computer.
EDVAC Electrical Discrete Variable Automatic Computer invented by Dr John Von Newman.
UNIVAC Universal automatic computer
IBM 5650

(c) How do the second generation computers differ from fifth generation computers? List down four differences. (04 Marks)

(i)	Used transistors for internal operations	(i)	Used very very large integrated circuits for internal operations

(i)	Marked the beginning of high level programming	(ii)	A variety of high level programming is being used
(iii)	Slow processing speeds up to 32 kilobytes only	(iii)	High processing speeds measured in gigahertz from 4.0 to 10 Giga-hertz
(iv)	Had magnetic drums for storage of data	(iv)	Uses hard disks made of magnetic materials shielded with metal for data storage
(v)	They were short lived compared to fifth generation computers	(v)	Live longer compared to second generation computers
(vi)	Consumed quite more power than fifth generation computers	(vi)	Consumes less power than the fifth generation computers)
(vii)	Produced heat during operation	(vii)	Produces minimal amounts of heat during operation
(viii)	Most of the programs were manually written had no wizards and translators	(viii)	Most of the programs have wizards for correcting errors and artificially intelligent.

22. **The database below contains data about items that have been ordered from various suppliers.**

SUPPLIER	CODE	DELIVERY DATE	PRICE ($)
AD12	2146	28/09/07	4499
C012	3724	30/09/07	249.50

M018	5613	05/10/07	98.15
L047	5613	11/10/07	102.75
P029	7215	17/10/07	127.50
R016	4639	19/10/07	22.89

(a) State the types of the fields in given table.
(04 Marks)

(i) SUPPLIER = Text
(ii) CODE = Number
(iii) DELIVERY DATE = Date / Time
(iv) PRICE = Currency

(b) The following search condition inputs
(CODE= 5613) AND (PRICE ($) < 100)
Write down the output using the SUPPLIER field.
(01 mark)

SUPPLIER= MO18

(c) Write down a search condition that will search for all items with a price more than $ 50 that will be delivered in October.
(03 Marks)

(PRICE ($) > 50) AND DELIVERY DATE (<= 31/10/07)
(PRICE ($) > 50) AND DELIVERY DATE= OCTOBER)
(01 Mark) **(01 mark)** ***(01 mark)***

(d) Write down the output using only the SUPPLIER field if the record were sorted in descending order
(02 Marks)

R016, P029, M018, L045, C012 and AD 12
(02 Marks)

23. (a) (i) What is a spreadsheet?
(02Marks)

Spread sheet software is used to organize data in rows and columns, and perform calculations on the data.

(ii) Give three examples of spreadsheet soft ware. ***(03 Marks)***

Popular spreadsheet software include:

- Microsoft Excel
- Lotus 1-2-3
- Corel Quattro Pro
- VisiCalc and SuperCalc
- Frame works

(b) Name three types of data that can be placed in a spreadsheet cell.

(03 Marks)

A cell can be empty, or contain a label, a value (i.e. a number) or a formula Lebels are text that identify the data and help organize the worksheet.

Values are numbers to be used for calculations.

Graphics (pictures) including graphs, maps

Data that can be placed in a spreadsheet includes also:

Number, currency, accounting numbers, date, time, percentage, fraction, scientific text, special custom.

(c) What is a chart in spreadsheet?

Charting allows a user to display data in a graphical, rather than a numerical form

Popular chart types includes

Lie charts, which are effective for showing a trend over a period of time.

Bar chars, which display bars of various lengths to show the relationship of data.

Pie charts, which have the shape of round pies cut into slices, and are best used to show the relationships of parts to the whole.

24. (a) In relation to computers, explain the meaning of the following terms.

(02 Marks)

(i) **Intranet**

Intranet is a small version of the internet used within an organization and the cessible via TCP/IP protocols, supports multimedia Webpages, and is accessible via a Web browser. Intranet generally makes company information accessible to employees and facilitates working in groups.

An intranet that extends to authorize users outside the company is called an extranet.

(ii) **Internet**

The internet is a worldwide collection of networks linked together.

(b) (i) Outline three benefits of networking computers.

(03 Marks)

Advantages of using a network

- Facilitates communication because people can communicate efficiently and easily via-e-mail, instant messaging, chat rooms, telephony, and videoconferencing.
- Reduce cost by sharing hardware (i.e, a printer) and software (e.g. using a net

2½ hours

SECTION A (20 marks)

Answer all qusestions in this section.

1. Disks come with a ……. feature as a measure of guarding against accidental erasing.
A. Write protect
B. saving
C. formatting
D. default

2. …….. refers to the number of computers controlled by a central host computer.
A. Serves
B. Stand alones
C. Clients
D. Switches

3. Which of the following characteristics will be associated with future computers?
A. Expensive computers.
B. Advanced robotics.
C. Big sized system units.
D. Inadequate storage systems.
4. A web page has a unique address called ……
A. Uniform Resource Locator
B. Hyper Text Transfer Protocol.
C. Virtual Reality Modelling
D. Transmission Control Protocol / Internal Protocol

5. Choose the software program used during meetings to enhance speakers'

A. Word processing
B. Ms Excel
C. Presentation.
D. Desktop publisher

6. Which of the following can be written to, only once?

A. Diskette.
B. Hard disk
C. Flash disk
D. CD- ROM

7.The word processing tool that offers similar words or alternatives is called ……..

A. word checker.
B. thesaurus.
C. Word scanner.
D. spell checker.

8. Real time processing is a task of …….

A. utility program
B. tailor made application
C. programming language.
D. operating systems

9. ……. is an example of a Boolean data type.

A. 001011
B. $200
C. Yes / No
D. 26/04/2040

10. …….. software uses hyperlink as one of its tools for developing a web page.

A. Web browsers
B. Web publishing
C. Presentations
D. Communications

11. ……..... is not an example of an input device.
A. OCR
B. MICR
C. OMR
D. LCD

12. A Local area Network (LAN) without a dedicated server is called and produce…….
A. a client server
B. a peer to peer
C. a ring
D. an intranet

13. Computers are electronic devices that accept instructions, process input and produce……..
A. information
B. prewritten programs.
C. data
D. end users.

14. Data from a floppy –disk is transferred to the computer through……
A. read-write heads.
B. access arms.
C. drive gate
D. drive A.

15. Which of the following languages was being used for students new to programming?
A. FORTRAN
B. COBOL

C. BASIC
D. PASCAL.

16. Special files that make a computer start when switched on are called……..
A. document files
B. command files
C. hidden files
D. boot files.

17. The text type using a computer is directly stored in ……..
A. RAM
B. a file
C. a directory
D. ROM.

18. One of the most useful features of the spreadsheet is the ability to ……..
A. perform what- if analyses.
B. spell check
C. create tables
D. perform calculations.

19. A computer program which is used to display information on the internet is
A. Gopher site
B. Browser
C. Web site
D. Home page.

20. Which of the following is an interactive computer program that helps users solve problems?
A. Robot
B. Perception system
C. Expert system

D. Natural language.

SECTION B: COMPULSORY (60 MARKS)

Answer all questions in this section. All the working must be done in the spaces provided.

21. (a) Describe the computer terms below:

(i) Line Spacing *(02 marks)*

……

……

……...

(ii) Changing Case *(02 marks)*

……

……

……..

(b) Explain the following terms in presentation software:

(i) Trasition Looping *(02 marks)*

……..

……..

(ii) Slide Master *(02 marks)*

……
……
……
……
……
……

(iii) Slide Layout *(02 marks)*

……
……
……
……

22. (a) State any two functions of a Central Processing Unit (CPU) . (02 marks)

……
……
……
……

(b) Define the following memory storage terms:

(i) Bit
(01 mark)

……
……

……
……

(ii) Byte *(01 mark)*

……
……
……
……..…

(c) State two categories of computer memory giving an example in each case.
(02 marks)

……
……..

Example:

……
……..……

(ii) *(02 marks)*

……
……..

Example:

……
……

(d) Describe the major difference between the two categories of computer memory in (c).
(02 marks)

……
……

23. (a) Describe a " relative address
(02 marks)

……
…….
……
…….

……
……

Give four advantage of electronic spread sheets over manual spread sheets
(04 marks)

……
……...

……
……..

(c) A teacher keeps a class list containing the following data for each students: Name, Student index number, Test scores.

(i) State the data type for each of these field: *(03 marks)*

Name:
……
……..

Student index number:
……..…….

Test scores:……..……..

(ii) Which field can serve as a primary key for the record?
(02 marks)

……
……

(a) What is a microprocessor? *(02 marks)*

……
……..
……
……..

……
…….

(b) Describe the difference between a digital computer and an analog computer. Give an example of each.
(04 marks)

……
……
……
……

Example:
Digital……
……
Analog……
……..
(c) What electronic technology characterized each of the four generations of computers?
(04 marks)
First generation……
…..
Second generation……..
Third generation
……

Fourth generation……
…

25.(a) Explain the following terms:

(i) Off-the shelf software. *(02 marks)*

……
……..
……
……...

Example:

……
……

(ii) Custom software. *(02 marks)*

……
……
……
……

Example:……
……..

(b)(i)What is a utility program? *(02 marks)*

……
……
……
……

……
……

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

……
……..
……
……
……
……

26. (a) (i) Distinguish between Internet and World Wide Web. *(02 marks)*

……
……
……
……

(ii) Mention any two offered by the Internet. *(02 marks)*

……
……..
……
……

(b) Define the following terms.

(i)Band Widith *(01mark)*

……
……
……
……

(ii) Packet Switching *(01mark)*

……
……

……
……
(c) Name four basic items that are required to gain access to the internet

(04 marks)

……
……
……
……

SOLUTIONS 2009

SECTION A:

1	A	6	D	11	D	16	D
2	C	7	B	12	B	17	A
3	B	8	D	13	A	18	A
4	A	9	C	14	A*	19	B
5	C	10	B	15	C	20	C

SECTION B:

21. (a) Describe the following terms below:

(i) Line spacing

- **Line spacing** – refers to the vertical distance between lines of text. The default line spacing is single. This type accommodates the characters in a text leaving a small extra space between lines
- Character spacing on the other hand refers to the space between the characters in the text

(ii) Changing Cases

Is when you type a text, there are a number of cases the user may intend to apply in order to create contrast within the text. These are:

(1). **Sentences case:** All the first characters in a sentence are in uppercase (capitalized)

(2.) **Lowercase:** All characters appear in lowercase

(3) **Uppercase:** All characters appear in uppercase

(4) **Title Case:** All the first characters of each word in a sentence appear in uppercase

(5) **Toggle case:** It changes upper case to lowercases and vice versa

(b) Explain the following terms in presentation software:

(i) **Transitional looping** – Is a facility which sets up the presentation to run continuously until it is stopped by the presenter. Got through slide show – setup show – then loop continuously until Esc. Under show options

(ii) Slide Master – This is a single slide that controls all other slides in a given presentation. Any changes made to it affects the rest, respectively.

(iii) **Slide Layout** – This is the given design of a slide showing divisions/ areas or sections of a slide where work can be done . E.g. title only and blank slide layouts

22.(a) State any two functions of a central processing unit (CPU)

- The central processing unit (CPU) is the electronic device that interprets / decodes, and carries out the instructions that tell the computer how to work
- Processing data
- Fetching and sending of commands and instructions
- Performs arithmetic and logic operations
- Temporary Storage / holding of data, instructions and results during processing

(b) Define the following memory storage terms:

(i) **Bit**

- **Bit:** In binary system, each 0 or 1 is called a bit, which is short for binary digit. (I.e. a bit is the smallest unit of measurement of information).

(ii)

- **Byte**: A group of 8 bits is called a byte, and a byte represents one character, digit, or unique shape, according to ABCDIC coding system.

(c) State two categories of computer memory giving an example in each case

Primary memory

Memory unit has stores the program that is being executed holds date data that the program is using and storage of OS programs that manage the computer.

Examples;

- RAM- Dynamic RAM, Rambus DRAM, Static RAM
- Registers
- ROM

Secondary memory
Relatively long-term and non-volatile storage outside the CPU and primary storage

Examples;
- HARD DISC
- Floppy disks
- CD-ROM
- Magnetic tapes
- Digital video disks
- Etc

(d) Describe the major difference between the two categories of computer memory in (c).

Primary storage		Secondary storage	
1	Data can be processed from directly from storage	1	Data cannot be processed directly but must be moved into main memory
2	Located within CPU	2	Located outside the CPU
3	More expensive	3	Less expensive
4	Lower capacity	4	Higher capacity
5.	Faster access time	5	Slow access time
6.	Volatile	6	Non volatile

23. (a) Describe a 'relative address'
Relative address is a cell reference which change accordingly as the formula is pasted to other cells in spread sheets. (e.g., in the formulae = B1*C1, B1 is a relative cell reference).

(b) Give four advantages of electronic spreadsheets over manual
spreadsheets

Advantages of spreadsheet software over manual worksheet include;

- Easy to make changes and corrections (ease of edit and format) to data on the worksheet
- Electronic spreadsheets can perform mathematical, statistical, and financial calculations quickly and accurately. The primary use of a spreadsheet is to calculate formulas, such as 200+350, that are entered into its cells.
- The rest of the worksheet is recalculated whenever data on a worksheet changes
- Operation is fast with the help of built-in functions and macros
- Calculation is always accurate, provided that data and formulae entered are correct
- Easy to create different kinds of charts, or to change chart types. ie they offer different options of data presentation
- Information on charts is updated automatically whenever related data on the different worksheet changes
- They are very useful for applications that require filtering, sorting, modeling and what-if analysis

(c) A teacher keeps a class list containing the following data for each
Student: Name,
Student index number, Text scores.

(i) State the data type for each of these fields:

	Field name	Data type

1	Name	Text
2	Student index number	Text
3	Test scores	number

(ii) **Primary key field** for the record is;
Student index number
(01 mark)

24.(a) What is a microprocessor?

- Very large- scale integrated circuit technology that integrates the computer memory, logic and control circuits on a single chip.
- A microprocessor usually contains the control unit, the arithmetic and logic unit, registers, and system clock.
- On a personal computer, the CPU is usually contained on a single chip and is often called a **microprocessor**

(b) Difference between a digital computer and an analog computer

Digital computers are so classified because they process data that is represented in form of discrete values, (Discrete values are numbers that can be defined like 1, 2, 3, etc). Digital watches are an example

	Computer	Examples
1	Digital	Digital watch
2	Digital	Digital calculator

Analog computers process data in a continuous form or measurable quantities/ units e.g. thickness of steel plates, From strength of electricity currents. They can only be measured by comparing them to other specific units. Their uses are normally restricted to scientific work and to engineering functions.

Examples of analog computers;

1	Analog	voltmeter
2	Analog	speedometer

(c) What electronic technology characterized each of the generation computers?

	Generation	Technology
1	First	Vacuum tube, valves, diodes
2	Second	Transistor
3	Third	Intergrated circuits
4	Fourth	Very large intergrated circuits

25. (a) Explain the following terms

(i) Off-the shelf software:
Packaged software is commercial software, which is copyrighted and designed to meet the needs of a wide variety of users.

Examples of off – the- sheff software:

- MS – Office suite

- Computer games e.g. chess, cross word puzzle, etc
- Education software e.g. Encarta,

Custom software is tailor-made software, which is developed at a user's request to perform specific functions

(iii) Example of Custom software

- Locally made school management systems (SMS),
- Inventory management systems
- Payroll management systems
- Library management system

(b) (i) What is a utility program?

Utility programs are part of system software used to support, enhance or expand existing programs in a computer system and make it more and more user friendly

(ii) **Functions of utility programs**

- Reduction and compression of files a through file compression utilities
- Compilation of technical information about a computer's hardware and certain system software programs and then prepares a report outlining any identified problems through diagnostic utilities
- **A disk scanner** is a utility that detects and corrects both physical and logical problems on a hard disk or floppy disk, and searches for and removes unwanted files.
- **A disk defragmenter** is a utility that reorganizes the files an unused space on a computer's hard disk so data can be accessed more quickly and programs can run faster. When the contents of a file are scattered across two or more noncontiguous sectors, the file is fragmented

- **An uninstaller** is a utility that removes an application, as well as any associated entries in the system files
- **A backup utility** allows a user to copy, or backup, selected files or the entire hard disk onto another disk or tape
- **Data recovery utility** – recovers accidentally deleted files from your computer
- An **antivirus utility** is a program that prevents, detects, and removes viruses from a computer's memory or storage devices. One popular antivirus program is **Norton Antivirus**
- **A screen saver is** a utility that causes the monitor's screen to display a moving image or blank screen if no keyboard or mouse activity occurs for a specific time period
- Screen savers originally were developed to prevent a problem called **ghosting,** in which images could be permanently etched on a monitor's screen
- Screen savers can also be used for reasons of security, business, or entertainment.

26.(a) (i) Distinguish between Internet and World Wide Web
The Internet is a worldwide collection of networks linked together
The Internet is the largest wide area network in the world
The World Wide Web (WWW), also called the Web, consists of a worldwide collection of electronic documents.
Each of these documents on the Web is called a Web page.

(ii) Mention any two services offered by the Internet
People have different reasons for connecting to the Internet, which include:

- Assess a wealth of information, such as news, weather reports, and airline schedules.
- Shop for goods and services
- Use online banking services and manage investments
- Do research and take online training courses
- Download files, listen to music, and watch movies
- Send and receive messages to and from other connected users
- Communicate with others around the world
- Access sources of entertainment and leisure, such as online games, magazines, and vacation planning guides.

(b) Define the following terms

(i) **Band width**

- The width of the communications channel is called the bandwidth

The higher the bandwidth, the more data and information the channel can transmit.

- Bandwidth:- is the difference between the highest and lowest frequencies-that is, the range of frequencies.
- The rate of speed of data through the channel is expressed in bits per second (bps)

(iv) Packet switching

Packet switching is a technique for dividing electronic messages into packets for transmission over a network to their destination through the most expedient route.

(c) Name four basic items that are required to gain access to the Internet

(i) Register with an ISP (Internet service provider)

(ii) Network Interface Card (NIC)

(iii) Transmission medium (cables or wireless)
(iv) Network operating system (NOS)
(v) Browser software. E.g. Internet explorer or Mozilla Fire fox

SECTION C:
27. A computer system comprises of hardware, software, users, data, procedures and communication. Describe the importance of each component.

Computer system
A computer system consists of interrelated organs or parts which function together for the same goal.

i)	**Hardware**	**iv)**	**Procedures**
ii)	**Software**	**v)**	**User**
iii)	**Data/information**	**vi)**	**Communication**

Hardware devices are the physical and tangible of a computer. Hardware comprises the electronic and the electromechanical parts of the computer.

Examples;
Monitor, keyboard, mouse, system unit. Etc

Hardware- is important because it carries out the
- In putting,
- Processing,
- Storage
- Out putting

- Communications of the system.
- **Software** is a term for electronic instructions that tell the computer how to perform a task
- These are a series of programs (instructions) that tell the computer what and how to work

Examples

System softwares -

- Operating systems – Windows XP, Vista, Windows 95
- Programming languages – C+, Java Script, SQL
- Utilities – ANTIVIRUS software, disk defrag mentors, data recovery

Application software;
Off the shelf (packed software) – MSOffice suite
Custom (tailor made) – school management system SMS

- These are a series of programs (instructions) that tell the computer what and how to work.
- System software manages he computer resources
- Application software solves the needs of the end user
- The made the computer more user friendly case for utilities
- Production of other programs (programming)
- Data consists of raw facts and figures that are processed into information
- Data consists of basic facts and figures that are processed information.

Data
Letters (e.g., a, b, c, .. .)
Words and symbols
numbers
examination scores

musical notes
Names e.g. Moses

- **Data** is the foundation for information
- **Information** is summarized data or otherwise manipulated (processed) data
- Is manipulated/processed data.

Examples

Information
word (e.g., apple, boy, cat)
a report, a letter, an essay
A mathematical formula
Comments, grades
a piece of music, a song

Importance

- These are the basis of decision making
- Planning
- Analysis
- Forecast
- Discovering the past, present and future

User – the most important components of a computer system – used to design and develop computer systems, operate the computer hardware, create the software, and establish procedures for carrying out tasks.

Ordinary user- is someone without much technical knowledge of computers but uses computers to produce information for professional or personal tasks, enhance learning, or have fun.

A computer professional user- is a person in a profession involving computers who has had formal education in the

technical aspects of computers; an example is:

Examples of users

- Computer programmer
- System analyst
- System administrator
- Database administrator
- Network administrator

Importance of users –

- Data entry
- Manipulating the computer system
- Programming the computer
- Administering the network
- Analyzing the computer system
- Communications hardware facilitates connection between computers and computer systems over phone lines and other channels
- This is the linking of one device of a computer to another

Examples are:

- Modems
- Cable
- Computer
- Fax modems
- Routers
- Gateways

Importance of communications

- Linking up computer devices and computers
- Enabling the flow of data

- Enabling the flow of information
- Enabling the flow of instructions
- Networking of computers

28.” The Internet is a harmful tool to man”. What is your opinion?

Positive aspects of internet:

- Personal/business connectivity – through E-mail, chatting, video conferencing, websites, etc
- News updates through online news groups and news room
- Secure online data storage
- Internet based education and research e.g. online training, publications,
- and research e.g. online training, publications,
- Tool for entertainment and leisure through online games, music and video clips, visiting of electronic zoos, etc
- Promotion of business through internet based trade and commerce (E-business and E-commerce). Business –to-consumer (B2C) e-commerce consists of the sale of goods to the general public. Consumer – to-

Consumer (C2C) e-commerce occurs when one consumer sells business (B2B) e-commerce consists of business providing goods and services to other businesses.

- Promotion of medicine and health through online medication and health care
- Promotion pf banking and finance through online banking
- Widened business investment opportunities and job opportunities through; PPS’s, internet service kiosks (café), online job, etc

Negative aspects of internet:

- Very high cost implications for initial capital outlay and maintenance costs
- Display of illicit/dangerous (pornographic) materials on grounds of health and materials
- Promotion of crime through Hacking, Piracy, and Money laundering
- Internet as a source of viruses through e-mail attachments, free games, etc
- Addition where people waste a lot of time
- Loss of man-hours as employees waste company time on unproductive surfing

29. Ways in which computers can be used in business and industry in Uganda include;

Computers in Business:

- Document production
- Data storage
- Data and information communication amongst departments and outsiders using E-mail and chat rooms.
- Decision making and planning through decision support systems and management information systems.
- Financial management through financial management systems. Programs.
- Stock and inventory management
- Security management for business and manufacturing installations through computer guided cameras
- Quality assurance and control
- Selling and buying of goods and services through networked computers (online buying and selling of products)
- Banking services through online computers
- Etc

Computers use for industry specifically:

- Computer aided design in manufacturing firms
- Computer aided manufacture through robotics. A robot is a computer controlled device that can move and react to feedback from the outside world
- Data sensing and logging i.e. mg't of temperatures in certain manufacturing areas
- Clocking for employee man-hours through card reading computer systems.
- Accident arresting through smoke, fire, poisonous gasses emissions detecting computer installations

COMPUTER STUDIES
Paper 1
Oct./Nov.2010
2½ hours
SECTION A: (20 MARKS)

Answer **all** questions in this section

1.The technology that made the microcomputer possible was

A. the vacuum tube.
B. Printed circuit boards.
C. The microprocessor
D. Magnetic cores.

2. The method which can be used to get files from a remote computer is

A WWW.
B. FTP.
C. user net .
D. e-mail.

3.The following are ‘field properties’ of a table in Microsoft Access except

A. field size.
B. Caption.
C. Text.
D. Input mask.

4.Which one of the following would qualify to be internal website address?

A.WWW.amused.com.
B.WWW.@amused.com.
C.WWW.amused@.com.
D. WWW@amused@com.

5…….. is the term widely used to describe commercial transactions on the World Wide Web.

A. WWW-commerce
B. Net commerce
C. Wire commerce
D. Electronic-commerce
6.Which of the following describes the process of getting a free copy of virus protection software off the internet?

A. Uploading.
B. Compressing.
C. Pirating.
D. Downloading.
7.The general term used to mean step by step instruction to run a computer is
A. hardware.
B. Software.
C. Network
D. Compiler.
8.The following type of device is usually non-removable.
A. Floppy disk.
B. CD-ROM disk.
C. Hard disk.
D. DVD-ROM disk
9. Which of the following is **not** classified as an application program?
A. Operating System.
B. Word Processor.
C. Database.
D. Presentation.
10. The term given to large forms of networks that exist where many networks are interconnected but not directly linked to the outside is called

A. Wide Area Network.
B. Internet.
C. Extranet.
D. Intranet.
11. The ……. Manages the entire operations of the Central Processing Unit.

A. Control unit.
B. Arithmetic logic unit
C. Power supply
D. RAM

12. Which one of the following computers would best suit a small scale factory of about 500 (five hundred) employees, to act as a server?
A. Microcomputer.
B. Minicomputer.
C. Mainframe computer.
D. Super computer.
13. The optional subject I chose was computer studies because I want to use it in my future profession.

A. magnify
B. drop cap.
C. Case change.
D. Bold.
14. Which of the following is not used in a formula in spread sheets?

A. Text data.
B. Graphical data.
C. Logical expression.
D. Numerical data.
15. A……..is a system that protects an organization's computer system from external access, such as through the internet.
A. HTTP

B. Domain
C. Flame
D. Firewall

16. The term used to explain the computer's ability to accept all kinds of inputs (functions), data, multimedia, etc is called
A. versatility.
B. Diligence.
C. Storage.
D. Automation.
17. Which of the following devices may help you continue using your computer when electricity is cut off?

A. Power Regulator.
B. Control Unit.
C. Uninterruptible Power Supply.
D. Transformer.
18. The process of restarting a computer when it is already turned on is termed as
A. cold boot.
B. Warm boot.
C. Cold reset.
D. Warm reset.
19…….. is a software that stores large amounts of records for a long time.
A. Unix
B. Ms-Excel
C. Front Page
D. Ms-Access
20. The title master command is a feature in ……..programs.

380

A. Presentation
B. Spread sheet
C. Database
D. Word processing

UGANDA NATIONAL EXAMINATION BOARD 2010
COMPUTER STUDIES 840/1
SOLUTIONS
SECTION A

1.	C	5.	D	9.	A	13.	B	17.	C
2.	B	6.	D	10.	D	14.	B	18.	B
3.	C	7.	B	11.	A	15.	D	19.	D
4.	A	8.	C	12.	B	16.	A	20.	A

SECTION B: (60 MARKS)
*Answer **all** questions in this section. All the working **must** be done in the spaces provided.*

21(a) Outline any three characteristics of computers.
(b)State any two examples of personal computers.
(c) Mention two uses of computers in the area of entertainment.
22(a) Explain the following terms as applied to a word processor.
(i) **Character map**
(ii) **Formatting**
(iii) Footer
(iv) Page break
(b) Outline four ways in which word processing can help in business activities.
(i)

(ii)

23.(a) Give two examples of spreadsheet packages.

(b) Study the table below and answer the questions that follow:

	A	B	C	D	E	F	G
1	**SCORES OF SELECTED S 4 STUDENTS IN SELECTED SUBJCTS**						
2	NAME	MATH	ENGLISH	PHYSICS	CHEMISTRY	COMPUTER STUDIES	TOTAL SCORE
3	Apollo						
4	Bob						
5	Charles						
6	Harriet						
7	George						
8	David						
9	Teo						
10	Titus						
11	Zuth						

G	H
TOTAL SCORE	AVERAGE SCORE

Give the cell reference for:
"COMPUTER STUDIES" **F2**

"AVERAGE SCORE" **H2**
State the formula for getting the:
(ii) total score for all the candidates.
Sum (H3 – H11)
(iii) **Average score for Bob.**
Average (B4 : G4)
(iv) overall best candidate.
Max (G3 : G11
(v) candidate with the least score.
Min (G3 : G11)

24.(a) (i) Distinguish between a Browser and an E-mail software.
Give two examples of each software in (a) (i) above.

(b) What is meant by the following terms?
(i) Search engine
(ii) Multimedia
(c) State any two examples of webpage authoring softwares.
25.(a) **Write the following abbreviations in full in relation to computers.**
(i) BIOS
(ii) CMOS
ALU
ICT
Give one function of each of the following:
(i) ROM-BIOS

(ii) CMOS
(c)(i) What is meant by the term cache?

why is a buffer necessary?
It sores duties / assignment sent to the printers which can be carried out by the booting.

26.(a)What is software suite?
(b)(i)State any two features of desktop publishing sofrware.
(ii) **What is Video conferencing?**
(c)Describe as precisely as possible the use of the following features:

SECTION C :
27.Explain the positive and negative effects of using computers to the society.
(20 marks)

28."A computer is a device which has hardware and software used to input, process, store and output date according to the instructions of the user"
As a student of computer studies, explain any two hardware components involved at each of the four stages above.

29.(a) Outline the advantages of networking over stand alone computers.
(b) Using illustrative diagrams, describe the various forms of LAN
Topologies. ***(12 marks)***

SETION B SOLUTIONS

21(a) Outline any three characteristics of computers.

(b)State any two examples of personal computers.

(c) Mention two uses of computers in the area of entertainment.

A. 21. Solution

(a) Characteristics of a computer;

- ***Speed:*** i.e. Computer operations are in millions or thousands of calculations per second
- ***Accuracy:*** i.e. Computers ar e thorough once the right instructions and data are entered
- ***Storage:*** i.e. Computer can store huge volumes of data without losing it through their storage devices like hard disks, flash disks, CDs, etc
- ***Versatility:*** i.e Computers can handle many various tasks at the same time or one at a time. Capable of multitasking
- ***Diligence/ constistency:*** i.e Computers can execute tasks repetitively
- ***Automation:*** i.e Computers work with minimal or no human intervention

Examples of personal computers

- Hand held PCs; PDA like palm VII, Sinclair 2481, TRS – 80, etc
- Portable PCs like; small laptops, Osborne 1, Outran PCs, etc
- Business PCs like Apple Lisa, TRS – 8011, DRC – 300, etc
- Professional PCs like; TRS – 8011, HP 85/6, etc
- Consumer PCs like; ATTARI 1400, TI – 99/41, etc

(c) Uses of computers in the area of entertainment:

- Audio and video clips
- Playing computer games
- Chatting in cases of networked computers

22(a) Explain the following terms as applied to a word processor.

(i) **Character map**

(ii) **Formatting**

(iii) Footer

(iv) Page break

(b) Outline four ways in which word processing can help in business activities.

(i)

(ii)

Qn. 22. Solutions

(a) Explanation of the following terms:

(i) Character map: Is a group of symbols not found on the keyboard.

(ii) Formatting: Changing the appearance / parameters of a text or document.

(iii) Footer: Is any text which is placed in the bottom margin of a page.

(iv) Page break: A parameter that controls the number of lines to a page after which additional text will be placed onto the next page

(b) Uses of word processors in business include'

- Production of reports and business proposals
- Making of adverts and posters (a case for word and clip art application)

- Production of business cards
- From letters and mailing label
- Publications
- Payroll where tables can be used for simple calculations
- In built templates for curriculum vitae

23 (a) Ms Excel Super Calc Coral Quattro pro
Lotus 1-2-3 Visi calc Multimate

(b) (i) F_2 and H_2
(ii) = or @ or + SUM (G_3:G_{11}) or = (G3 + G4 + G5 + G6 + G7 + G8 + G9 + G10 + G11)
= G3, G4, G5, G6, G7, G8, G9, G10, G11)
(iii) = AVERAGE (B4: F4) or = (B4 + C4 + D4 + E4 + F4)/ 5 or
= (B4, C4, D4, E4, F4)/5

(iv) = MAX (G3:G11) or = MAX (H3:H11)

(v) = MIN (G3:G11) or = MIN (H3:H11)

24.(a) (i) Distinguish between a Browser and an E-mail software.
Give two examples of each software in (a) (i) above.

(b) What is meant by the following terms?
(i) Search engine
(ii) Multimedia
(c) State any two examples of webpage authoring softwares.

24(a) (i) A browser is a communication software that allows a user to access and view web pages on the internet while E-mail software enables a user to create, send, receive, forward, store and print email messages.

(ii) **Examples of browser**

- Ms internet explorer
- Nets cape navigator
- Mozilla fire fox
- Google chrome
- Conqueror

Examples of E-mail software

- Ms out look express
- Eudora light
- Web mail

(b) **(i) Search engine** refers to software program that can be used to locate websites, pages and files on the internet. Or program that enables one to search for resources on the web (internet)

(ii) **Multimedia** refers to using computers to intergrate text, graphics animation, audio and video into pone application.

(c) Examples of webpage authorizing software

- Micro media dream weaver
- Nets cape composer
- Front page
- Adobe go live
- Ms publisher
- General office

25.(a) **Write the following abbreviations in full in relation to computers.**

(i) BIOS

(ii) CMOS

ALU

ICT

Give one function of each of the following:

(i) ROM-BIOS

(ii) CMOS

(c)(i) What is meant by the term cache?

why is a buffer necessary?

It sores duties / assignment sent to the printers which can be carried out by the booting.

25. (a) (i) **BIOS** Basic Input and Out Put System

(ii) **CMOS** Complementary Metal – Oxide Semi Conductor

(iii) **ALU** Arithmetic and Logic Unit

(iii) **ICT** Information and Communication Technology

(b) Function of the following

(i) **ROM-BIOS** Keeps the computer's basic start up information OR Contains the sequence of instructions the computer follows to load the operating systems and other files when computer is turned ON (01 marks)

(ii) **CMOS** Used to store configuration information about computer

(c) (i) Term **Cache** refers to a high speed that a CPU can access quickly

(ii) **Buffer** is necessary to provide a **temporary** storage so that the **CPU** is set free to carry out other activities instead of waiting for all data to be entered or information to be out put

26.(a)What is software suite?
(b)(i)State any two features of desktop publishing sofrware.
(ii) **What is Video conferencing?**
(c)Describe as precisely as possible the use of the following features:

26 (a) **Software** suite refers to a collection of individual application software sold as a single package e.g ms office
(02 marks)

(b) (i) features of **desktop publishing software**

- it includes color libraries
- supports color separation
- supports page lay out
- combines word processor and graphics to produce high documents

(02 marks)

(ii) **Video conferencing** refers to the technology in which people in different geographical locations can exchange text, sound and video clips over a computer net work in real time as if they are in the same location

(02 marks)

(c) Uses of the following features

(i) **Radio button** - this a type of graphical user inter face element used to select or choose only one of a predefined set of options

(02 marks)

(ii) **Check box** – this is graphical user interface used to select several choices from the available options
(02 marks)

SECTION C :

27.Explain the positive and negative effects of using computers to the society.
(20 marks)

Qn. 27. Solutions
Positive effects of using computers to society

- Created and widened employment opportunities e.g.; Software engineers,
Computer teachers, technicians, etc
- Improved education and research by simplifying teaching and learning. E.g. abstract content can be made real through cyber science technology – others are Computer aided teaching and computer aided learning, presentations software, etc
- Improved entertainment and leisure through computer games, music, etc for people to refresh and make-up
- Improved communication and collaboration through computer networks
- Improved health services where computers facilitate recording, monitoring, and diagnosis for patients
- Improved security through computer managed gates and monitoring of commercial and domestic premises, detecting and controlling crime by police.
- Reduced production time and manufacturing processes through computer aided manufacturing and computer aided designing which have greatly improved the quantity and quality of life
- Improved customer services delivery and care eg networked computers provide 24/7 on-line services like credit cards
- Improved business and investment opportunities

- Improved data and document production, storage and manipulation

Negative effects of using computers to society

- Computer related crime e.g. forgeries, computer based illegal funds transfers, etc
- Moral degeneration through morally dangerous clips, messages, etc
- Increased cost of production as computers are very expensive to buy and maintain. Computer experts can as well be expensive to hire
- They are both health and environmental hazards e.g. can cause eye defects, and their disposal after use has a lot of environmental concerns.
- Loss of employment as they take over job assignments for semi and less skilled job functions.
- Deaths and accidents due to computer malfunctioning or explosion
- Virus threats which has made data storage and safety very vulnerable
- Erosion of human intergrity and creativity as even the smallest calculation is assigned to the computer. Other cases are GMFs test tube children, etc
- Loss of man-hours as some workers go for unproductive computer based leisure at the expense of their work
- Cyber terrorism

28.“A computer is a device which has hardware and software used to input, process, store and output date according to the instructions of the user”

As a student of computer studies, explain any two hardware components involved at each of the four stages above. ***(20 marks)***

A 28.

Hardware devices for information processing

1. Input device

An Input is any hardware component that allows a user to enter data and instructions into a computer

Keyboard

A Keyboard is an input device tat contains keys that allow a user to enter data and instructions into a computer

Or

A Keyboard is an input device tat contains keys which initiate programmed routines

Mouse

A mouse is a pointing device that allows the entering of data and instructions by controlling a pointer on the screen which the user has to move on a smooth flat surface

Trackball

A trackball is a stationary pointing device with a ball mechanism on its top

Joystick

A joystick is a pointing device with a vertical lever mounted on a base to control the position of the cursor

Light pen

A light pen is a handheld pen like pointing device that has a light sensitive point to select options on the screen

Touch screen
A touch screen is an input that permits the entering or selecting of commands and data by touching the surface of a sensitized video display device with a finger or a pointer

Touchpad
A touch pad is a small flat rectangular pointing device that is sensitive to pressure and motion
Digital camera
A digital camera is an input that takes picture and store he images digitally rather than traditional films which image can then be transferred to the computer using a specialized cable or wireledd technology
Scanner
A scanner is a light sensing input device that converts printed text and graphics into digital form for computer use
Others include:

- Optical character recognition reader
- Optical maek recognition reader
- Barcode reader
- Magnetic ink character recognition reader
- Magnetic strip reader
- Sensors

Microphone
Microphone is an input device that allows a user to input voice or sound to a computer

MIDI
MIDI Short for musical instrument digital interface is an input device that defines how sounds are represented electronically by

digital musical devices and connected to the sound card of the computer

Digitizer

A Digitizer is an input device with a graphic tablet on which the user writes with a pen like device called a stylus

A terminal is nay device that sends data and instructions to a computer

2. **Processing Hardware**

This is a hardware component used to manipulate symbols, number and letters and controls the other parts of the computer system

Alphanumeric logic unit(ALU)

Alphanumeric logic unit (ALU) is the hardware which performs the computers principal ligic and arithmetic operations or calculations and logical operations.

Control Unit (CU)

The control unit (CU) is the part of the processor which manages he other parts of the computer system

Register

Register is the part holds one piece of data and instructions one a time during processing by the CPU

3. **Output hardware**

An output hardware is any device used to display or remove information from a computer to a user

A Monitor is an output device that provides a visual image of both the users input and computer output

Or

A monitor or a VDU display information on its screen thus helping the user to monitor operations carried out by the computer

Printer
A printer is an output device that produces text and graphics on a physical medium such as a paper

Speaker
A speaker is an audio output device that produces sound signals
Data projector
A data projector is an output device that takes the image that displays on the computer
Screen and projects it on a lerger screen sop that people can see the image clearly
Fascimile machine
A Facsimile machine (Fax) is a device that transmits and receives documents over a telephone line and print it out on paper.
Others include:
Plotter
Terminal
4. Storage hardware
A storage hardware is any device designed to retain data and instructions in a relatively temporay or permanent form
Primary memory
Random Access Memory (RAM) is where data and instructions are stored temporarily during processing

Read Only Memory (ROM) is where programs are stored permanently
Secondary storage
Floppy disk (Diskette) is a thin flexible device with magnetic coating enclosed in a square shaped plastic shell

A zip disk is like a floppy disk but can store up to 100MB of data

A compact disk (CD-ROM) is a flat portable storage media that is usually 4.5” (inches) in diameter used to store information using microscopic pits and lands that are in the middle layer of the disk
Hard disk is a storage device composed of several inflexible circular disks called platters
Magnetic tapes are magnetically coated ribbons of plastic cable of storing large amounts of data and information

Flash disk is a storage device that operates as a plug and play device which is removable and connected using a USB port and usually have fast access to data stored in large amounts

Others include: Memory card, Jazz disk, Magnetic strip cards (ATM), plastic card
Sim card
A.29

29.(a) Outline the advantages of networking over stand alone computers.
(b) Using illustrative diagrams, describe the various forms of LAN
Topologies. ***(12 marks)***

(a) Advantages of Networking over stand alone computers
- Facilitate communications e.g. through electronic-mail, chatting in chat rooms

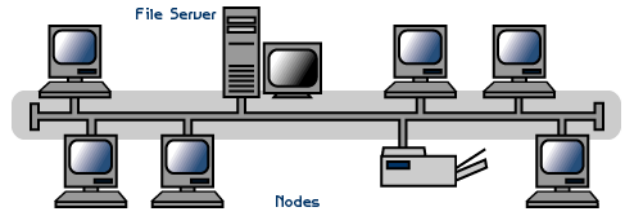
- Reducing on cost by sharing hardware like printers and software
- It allows for tight control over who has access to what data
- It allows sharing of data and information stored on other computers on the network
- It enables online learning and collaborative research
- It allows access to free common databases and databanks like free software, as in banks like ATM.
- It allows for advertising tools for products and services
- It allows access to more entertainment, leisure, clubs e.g. e-zoos
- Has enabled improved travel service through e-books and e-reservation
- News updates can be got on climate, weather, politics, and sports
- Provides for online employment e.g . telecommuting

(b) **Various illustrations of LAN topologies**

Bus or linear topology

This is a LAN topology which consists of a single central cable tat connects all computers and devices together

Diagram to illustrate a bus or linear topology



Star topology

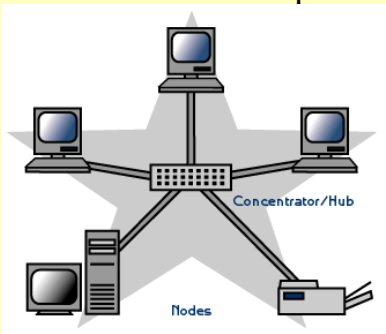
A star topology is a LAN topology which consists of a cable forming a closed ring or loop with all the computers and devices are connected to a central computer thereby forming a star

Or

A star network topology is a network configuration where all communication to workstations on a network go through a common hub or switch.

Diagram to illustrate a Star topology

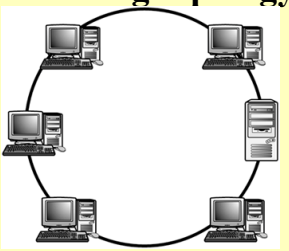
Star network. All computers and devices in a star network connect to a central computer thus forming a star.



Ring topology

A ring topology is LAN topology which consists of a cable forming a closed ring or loop with all the computers and devices in a network

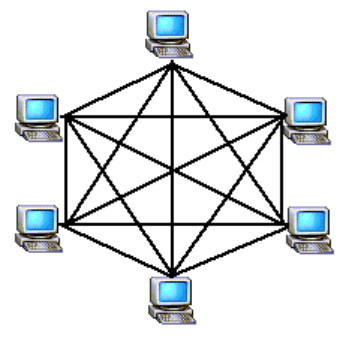
Diagram to illustrate a ring topology



Mesh or hybrid

A mesh of hybrid LAN topology is a network topology which combines the bus, star and ring network to form big network

Diagram to illustrate a mesh or hybrid topology



COMPUTER STUDIES
Paper 1
Oct./Nov.2011
2½ hours

SECTION A (20 marks)

Answer all questions in this section.

1.A device that converts images on a paper to electronic signals that can be stored in a computer is a …….
A. monitor.
B. Scanner.
C. Plotter.
D. Printer.

2. The binary code that is widely used in microcomputers is called ……
A. ASCII
B. EBCDIC
C. BCD
D. Unicode

3.A feature common to most application packages that contains icons or graphic presentation for commonly used commands is ……..

A. toolbar.
B. Menu.
C. Help.
D. Dialog box.

4.The asterisk software (*) in DOS is called a(n) …….
extension.
Wildcard.
Filename.
Substitute.

5. A hardware or software system used to restrict access to data and information on a network is called……..
A. modem.
B. Netscape.
C. ARPANET.
D. Firewall.

6. Which of the following is primary input device to a computer?
A. Scanner.
B. Mouse.
C. Keyboard.
D. Digital camera.

7. In a computer system, the system clock is very important because it ……
A. is a storage device.
B. Shows the time and date.
C. Determines data process speeds.

D. Turns off the computer after a long time.

8.The following are parts of the Central Processing Unit (CPU) except ……

A. ALU.
B. Control Unit.
C. Mother board.
D. Registers.
9. In computer studies and information technology, a bus is a …….
A. data bus damager.
B. Programming error.
C. Malicious program.
D. Syntax error.

10. In spreadsheets, formulas and functions are used to ……data.
A. format
B. design
C. edit
D. manipulate
11. Select one tool that controls the size, margins and orientation when working on a word document.
A. Page setup
B. Print preview.
C. |Format.
D. Insert.

12. Fourth generation computing is characterized by the development and use of …….
A. transistors.

B. Micro processors
C. Artificial intelligence.
D. Integrated circuits.

13. A query is used to ……..
A. enter and edit data.
B. Automate the way database is used.
C. Located specific records that meet specified criteria
D. Provide an alternative to tables of entry and view records.
14. Values such as ……. Are examples of logical date types.
A. true and false
B. months or years
C. object or graphics
D. binary or numbers
15.Which of the following is an extension for an image file name?
A.doc
B.exe
C. jpeg
D.xls
16. A hardware on a network or communication system which receives, boosts and retransmits a signal to the next part of a system is a ……
A. router.
B. Hub.
C. Gateway.
D. Repeater.
17. A……., or character is composed of eight ……..
A. kilobyte, megabytes.

B. Bit, bytes.
C. Megabyte, kilobytes.
D. Byte, bits.

18. The graphics interface usually moves and points the cursor with the ……
A. function key.
B. Toggle key.
C. Mouse.
D. Num lock.

19. A spreadsheet that already includes the labels formulas is called the ……..
A. template.
B. Macro.
C. Graphic.
D. Worksheet.

20.The linking of one or more computers together to communicate and share resources is called…….
A. Transmission
B. networking
C. packet switching.
D. On-line browsing.

SECTION B: COMPULSORY (60 MARKS)
*Answer **all** questions in this section. All the working **must** be done in the spaces provided.*
(a) **List three major characteristics of the third generation computers.**
(b)Explain the following terms in relation to computer usage.

(i) Hacking (02 marks)

(ii) Computer crime (02 marks)

(c)**Mention three ways of preventing computer crime.** (03 marks)

22. (a) (i) **Define the term word warp as applied to a word processor.**

(i) State any two word processor applications. (02 marks)

(b)Supposing it is sports day at your school where there are four houses competing. Each house has 3 team; Junior, Middle, and Senior.

(i) explain with an illustration how spreadsheet can be used to create an electronic score sheet for the teams.

	A	B
1	Houses	Teams
2	1	Junior
3		Middle
4		senior
5	2	Junior
6		Middle
7		Senior
8	3	Junior
9		Middle
10		Senior
11		Junior
12		Middle
13		Senior
14		

15		
16		
17		

(ii)Describe how spreadsheet can be used to find the total of each team,

……
……..
……
……

23.(a) Give one function of each of the following keys (buttons) on the computer keyboard.

(i) **Backspace key**

(ii) **Caps lock key**

(01 mark)

(iii)Delete key

(iv)Space bar

(01 mark)

Shift bar

(01 mark)

(b) **(i) What is booting in relation to computers**?

(01 marks)

(ii)Distinguish between cold booting and warm booting.

(04 marks)

24.(a) Define the following terms:

(i) Web page

(01 mark)

(ii)Web site

(b)Explain the functions of the following:

(i) IP address

(02 marks)

(ii) ISP

(02 marks)

(c)**(i)Mention any two factors considered in choosing a network topology.**

(02 marks)

(ii)Identify one advantage and one disadvantage of a star network.

Advantage

(*01 marks)*

Disadvantage

(01 mark)

25. (a) State any two factors to consider when designing a database. ***(02 marks)***

(b) What is a field in relation to databases ?

(01 mark)

(c) A property owner uses a database to store date a bout houses he sells. The table below shows part of the database.

Reference number	**Air Conditioner**	**Garden**	**Number of bedroom**	**Price (million Shs)**
L2132	Y	N	3	170
L4323	N	Y	2	130
L1232	N	Y	3	158
L4321	N	N	4	210
L5643	Y	Y	4	335
L3423	N	Y	5	400
L2342	Y	Y	4	285

(i)The records shown are to be sorted in a ascending order of price.
What will be the reference number of the first record in the database after it has been sorted?
(*01 mark)*

(ii) Give the names of the fields that contain Boolean data type.
(*02 marks)*

(iii)Identify the field type of the reference number field.
(*01 mark)*

(iv)Give two validation checks that could be carried out on the reference number filed.
(02 marks)

(v)which field should be the primary key of the database table?

26.(a) Differentiate between system software and application software.

(i) **system software**
(02 marks)

(ii) Application software
(02 marks)

(b)**Give any two functions of an operating system.**
(02 marks)

(c)(i)What is a computer virus?
(02 marks)

(ii) Name any two antivirus software (02 mark)

SECTION C: (20 MARKS)

*Answer only **one** question from this section. Answers to the question **must** be done in the answer booklets provided.*

27.a) Explain the meaning of utility programs (02 marks)
(b) Describe any six utilities. (18 marks)
28. Outline ten areas in which computers can be applied in society. (02 marks)

29.Word processors have become part of everyday life. Describe ten typical functions of a word processor.
(20 marks)

SOLUTIONS
840/1 UCE 2011
SECTION A

1.B	6.C	11.A	16.D
2.A	7.C	12.B	17.D
3.A	8.C	13.C	18.C
4.B	9, " None" or Definition of bus (Data transmission Pathway.)	14.A	19.A
5.D	10.D	15.C	20.B

SECTION B
21 (A) Characteristics of the 3rd generation
- Integrated circuits
- Introduction of Operating systems e.g Multics
- Simple programming languages e.g Basic
- Low cost compared to 1st and 2nd generation computers
- Increased user friendliness

- Parallel processing
- Small in size as compared to 1st and 2nd generation computers
- Consumption of low electric power as compared to 1st and 2ns generation computers
- Increased memory compared to 1st and 2nd generation computers
- Introduction of mini computers.
- Generation of less heat compared to 1st and 2nd generation computers
- Introduction of networking

(b) (i) Hacking – Gaining illegal (unauthorized) access into computer installations

(ii) Computer crime

Any illegal action involving the use of computers or against computers.

(c) Preventing computer crime

- Physical security e.g bugler proofing, locked key system, security guards, CCTV Cameras
- Cameras
- Encryption
- Passwords and usernames.
- Recovery plans/ back ups
- Bio-metric devices e.g thumb print readers
- Networks especially wireless networking and server- based networks
- Call back systems

-Possessed objects- Items carried to enable the user gain access to the system e.g a card

- Anti virus installation

- Activating firewalls

22. (a) (i) Word wrap – A feature that automatically moves the cursor, or word/text that doesn't fit in the space left towards the right margin to another line

(ii) Word processor applications.

- Ms Word
- Lotus Word processor
- Corel Word perfect
- Word star
- Word Pad
- Abi word
- Mac write
- Ami pro
- Magic wand etc

b) (i)

Illustration

	A	B	C	D	E
1		**House 1**	**House 2**	**House 3**	**House 4**
2	**Juniors**				
3.	**Middle**				
4.	**Seniors**				
5	**Total**	**=SUM(B2:B4)**	**=SUM(C2:C4)**	**=SUM(D2:D4)**	**=SUM(E2:E4)**

Or

	A	B	C	D	E
1		**Juniors**	**Middle**	**Seniors**	**Totals**
2	**House 1**				**=SUM(B2:D2)**
3	**House 2**				**=SUM(B3:D3)**
4	**House 3**				**=SUM(B4:D4)**
5	**House 4**				**=SUM(B5:D5)**

(ii) By summing up all house scores in their respective teams.
Or
- Any other appropriate formular. e.g =SUM (B2:B4), = SUM (B2:D2), = B2 + B3 + B4
= B2 +C2+D2

23.(a) Give one function of each of the following keys (buttons) on the computer keyboard.

(i) **Backspace key**
(ii) **Caps lock key**
(01 mark)
(iii)Delete key
(iv)Space bar
(01 mark)
(v)Shift bar
(01 mark)

23 (a)
(i) **Backspace Key** - To delete a character or space to the left of the cursor position
Or Ctrl + Backspace key removes the whole word to the left of the cursor

(ii) **Caps Lock Key** - To facilitate continuous typing in upper case when activated

(iii) **Delete Key** - To remove the character, space, text or word to the right of the cursor position. Ctrl + Del removes the whole word to the right of the cursor position.

(iv) **Space bar** -To create space
- Alignment
- Moving the cursor to the next line
- Pausing music in some music programmes e.g Power DVD,
- Playing games e.g in pinball
- Resizing or closing the current window with a modifier key e.g Ctrl Key + Space bar
- Helps in scrolling in some web browsers when used with Shift Key

(v) **Shift Key** - Activates second function keys
-Activates sticky keys
-Selects files and folders in specific order
-Modifies function Keys e.g Shift + F1 = F13 and Shift + F2 = F14
-Anchors the insertion pointer in word processors
-Used in modifying the mouse behavior while using a web browser

b) (i) Booting Refers to the process of loading an operating system into a compter main memory to make a computer ready for use

(ii) Cold booting- Cold booting refers to turning on a computer after it has been off by loading the operating system

Warm booting – Resetting the computer when the Operating System is already running by using reset button or ctrl + Alt +Del

24.(a) Define the following terms:

(i) Web page

(01 mark)

(ii)Web site

(b)Explain the functions of the following:

(i) IP address

(02 marks)

(ii) ISP

(02 marks)

(c)**(i)Mention any two factors considered in choosing a network topology.**

(02 marks)

(ii)Identify one advantage and one disadvantage of a star network.

Advantage

(*01 marks)*

Disadvantage

(01 mark)

24. (A) (i) Web page- It's document that uses http on the website covering a particular topic/related topics.

(ii) Website- A collection of related web pages. Or world wide web pages maintained by an
Organization or an individual

b) (i) IP Address – It uniquely identifies each computer / device connected to the network using the internet protocol

(ii) ISP – Internet Service Provider functions:

- A company which gives connectivity to the internet
- Electronic mail services
- Leasing server space for small businesses
- Web hosting services
- Provision of virtual machines e.g storage space etc

c) (i)Considerations when choosing a network topology

- Cost of installation
- Number of computers and other devices
- Architecture of the building to be used
- Purpose of the network
- Distance of connectivity
- Safety provisions of the network
- Personnel provisions/technicalities involved
- Ease in accessing the network

(ii) Advantages of Star topology

- Breakdown of an individual station does not affect other computers on the network
- It is simple to install and maintain if compared to other topologies like mesh and tree
- There is less noise (electronic)

Disadvantages of star topology

- Breakdown of the central computer or hub leads to breakdown of the whole network
- Leads to a “spaghetti” of cables for a large network since each workstation has two cables to and from the hub

25. a) Factors to consider when designing a database

-Number of tables needed
-Number of fields and field names
-Unique identifiers on fields with unique values
-Relationships between tables if any

-Practicability of the database
b) Field – is a name given to particular/ specific piece of data / information about a record
c)(i) L4323
(ii)- Air conditioner
- Garden
(iii) Text
(iv) Two type check
- Data type check
- Number of characters)Length of sentence)
- Presence check/ primary key
- Consistency Check / pattern matching
- Validation rule / range validation rule
(v) Reference number

26.(a) Differentiate between system software and application software.

(i) **system software**

(02 marks)

(ii) Application software

(02 marks)

(b)**Give any two functions of an operating system.**

(02 marks)

(c)(i)What is a computer virus?

(02 marks)

(ii) Name any two antivirus software (02 mark)

Solutions:

26. a) System software – Programs that start up the computer and manage the general functioning of the system devices and activities

Application software- Computer programs designed to satisfy specific needs of the user. E.g excel, database, word etc.

b) Functions of operating system

- Provides basic working environment/interface
- Controlling the use of peripherals
- Controlling the loading and running of application programs
- Organizing the use of memory/ Memory management
- booting
- File management
- Protecting hardware and software
- Configuring devices
- Processor management e.g multitasking and time sharing

(c) (i) A computer virus. This is a program which attaches itself to the system and alters the normal functioning of a computer

(ii) Examples of anti viruses

- Norton Antivirus
- Panda Antivirus
- Avast Antivirus
- Mac A free Antivirus
- AVG Antivirus
- Eset- Nod 32 Antivirus
- Dr. Solomon's tool kit
- Avira Antivirus
- Kaspersky Antivirus
- Escan Antivirus
- F-secure Antivirus
- Netqin Antivirus

SECTION C

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27.a) Explain the meaning of utility programs (02 marks)

(b) Describe any six utilities. (18 marks)

27. (i) Utility are part of system software which are designed to configure, analyze, optimize and maintain a computer in its working operations.

(ii) Description of Utility programs

- **Anti-virus** utilities scan for computer viruses and remove them
- **Backup** utilities can make a copy of all information stored on a disk, and restore either the entire disk
- **Data compression** utilities output a smaller file when provided with a stream or file
- **Disk checkers** can scan the contents of a hard disk to find files or areas that are
- **Disk cleaners** can find files that are unnecessary to computer and can decide to delete
- **Disk compression** utilities can transparently compress / uncompress the contents of a disk increasing the capacity of the disk
- **Disk defragmenters** increases efficiency by moving data to one side of the disk
- **Disk partitions** can divided an individual drive into multiple logical drives
- **Disk space analyzers** to get the size for each folder / sub folders & files in folder or drive showing the distribution of the used space
- **Disk storage** utilities

- **Archive** utilities output a stream or single file when provided with a directory or a set of files. Archive utilities, unlike archive suites, usually do not include compression or encryption capabilities
- **File managers provide** a convenient method of performing routine data management tasks, such as deleting, renaming, cataloging, uncataloging, moving, copying, merging etc
- **Cryptographic** utilities encrypt and decrypt streams and files
- **Hex editors** directly modify the text or data of a file
- **Memory testers** check for memory failures
- **Network utilities** analyze the computer's network connectivity, configure network settings, check data transfer or log events.
- **Registry cleaners** clean and optimize the Windows registry by removing old registry keys that are no longer in use
- **Screensavers** were desired to prevent phosphor burn-in on CRT and plasma computer monitors Contemporary screensavers are used primarily for entertainment or security
- **System monitors** for monitoring resources and performance in a computer system
- **System profilers** provide detailed information about the software installed and hardware attached to the computer
- Sorting utility for organizing files in any choose order
- Merging or combining different files in one
- Diagnostic utility

28. Outline ten areas in which computers can be applied in society. (02 marks)

28. Areas in which computers can be applied in society

- Education and training
- Information and data storage
- Business – e-business where computers are networked
- Entertainment and leisure
- Health and medicine for medical tests, drugs and prescription
- Transport
- Communication
- Accounting and finance
- Banking
- Climate and weather
- Security and military
- Manufacturing – Robotics, CAD and CAM
- Hotel and institutional catering
- General management
- Government management
- Government uses computers to manage the government payroll
- Space exploration
- Research

29.Word processors have become part of everyday life. Describe ten typical functions of a word processor.

(20 marks)

29. Functions of word processors

- Allow text to be edited easily e.g insert, delete and move text anywhere in the current document
- Mailing documents
- Mail merge
- Graphics creating and handling e.g frames, shapes
- Mathematics formulae especially in tables
- Creation of tables

- Sharing of documents
- Comparison
- Word count
- Creating web pages
- Creation of foot notes and cross references
- Creation of letters and document, memos etc
- Helps in saving on a storage device
- Helps in formatting and designing of simple office publications

COMPUTER STUDIES
Paper 1
Oct./Nov.2012
2½ hours

SECTION A (20 marks)

1.Which Computer classification does a Personal Digital Assistant (P.D.A.) belong?

A. Size B. Process
C. Purpose D. Processor Power

2.Which of the following is associated with visual slides, animated shows and overheads?

A. Databases B. Spreadsheets
C. Graphics D. Presentations

3.A ……. is a software that provides an interface between the user and the Internet

A. Gopher B. Server
C. Web browser D. Web page

4.The ……is responsible for the mathematical and comparison sequences in the CPU.

A. main memory B. Control unit
C. Arithmetic and Logic Unit D. micro processor

5.The scan disk process is categorized as a (n) …….

A. application software B. operating system
C. programming language D. utility program

6.Calculate the number of bits in 16 bytes.

A. 8 B. 2
C. 64 D. 128

7.What software can be used to browse the Internet?

A. record B. Ms Access
C. Power point D. folder

8.A collection of related data items a DBMS treats as a unit is a ……..

A. record B. file
C. Power point D. FTP

9.The introduction of the first super computers is a characteristic of …….

A. first generation B. second generations
C. fourth generation D. fifth generation

10.The use of functions to manipulate data is a facility of ……..

A. database B. presentations
C. spreadsheets D. communications

11.A uniform Resources locator is used to ……..

A. browse Internet B. find a particular website
C. down load information D. design websites on the Internet

12.A (n) ……. is an example of a wireless type of transmission media

A. twisted pair B. co-axial
C. versatility D. diligence

13.The ability of a computer to run many jobs at the same time is called

A. Multitasking B. flexibility
C. versatility D. diligence

14.A flash memory is an example of a (n) …… device

A. processing B. storage

C. input D. output

15.What is an operating system?

A. The part of hardware that operates input and output devices

B. The part of hardware that operates the mouse and the window on the monitor

C. Systems software that manages computer system resources

D. A section of software that must be part of every program

16.Which of the following programs are not typically included in a Microsoft Office Suites?

A. Presentation programs B. Financial programs

C. Spreadsheet programs D. Database programs

17.Which one of the following devices produces a soft copy as its output?

A. Display screen B. Plotter

C. Robot D. Laser printer

18.Small pictures that represent commands in a graphics interface are …….

A. icons B. Cursors

C. symbols D. graphics

19.If you want to “window shop” on the Internet, you would visit a ……..

A. chat group B. gopher

C. telnet D. cyber café

20.The computer ethical issue that deals with the responsibility of controlling the availability and use of data is ……

A. access B. accuracy
C. ownership D. privacy

SECTION B; COMPULSORY (60 MARKS)

Answer all questions in this section. All answers must be written in the spaces provided

21.(a) (i) What is word processing? (02 marks)

……
……..……
……
……
……
……
……
……

(ii) Mention three examples of word processing software (03 marks)

……
……

……
……

……
……

(b) Describe three ways in which personal data stored on a computer can be misused.
(03 marks)

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(i) ……

(ii) ……

(iii) ……

22.(a) Distinguish between application programs and system software (02 marks)

……

……

……

……

(b) Give two examples of application programs (02 marks)

……

……

(c) System software are normally grouped into three categories. State the three categories

(i)

……
……

(ii)

……
……

(iii)

……
……

(d)Mention the functions of each of the categories in (c) (03 marks)

(i)

……
……

(ii)

……
……..

(iii) ……
……..

23.(a) Define a computer network

……
……...
……
……
……
……....
……
……..
……
……

(b) Distinguish between a LNA and WAN. (02 marks)

……
……
……
……
……
……
……..

(c) Name any three types of network topologies

(i) ……
……

(ii) ……
……

(iii) ……
……

(d)State any three requirements for connecting a computer to Internet (03 marks)

(i) ……
……

(ii) ……
……

(iii) ……
……

24. A car showroom owner uses a spreadsheet to store data about cars he sells.

The table below shows part of the spreadsheet

	A	B	C	D	E
1.	Registration	Previous	Buying	Selling	Profit
2.	Number	Owners	Price	Price	
3.					
4.	KUP 315	1	$3900	$4400	$500
5.	ZAS 546	2	$3500	$3900	$400
6.	TRU 234	1		$3450	$750
7.	BWA 456	4	$1950	$2200	$250
8	Average			$3487.5	
9					

(a)How many columns are there in this part of the spreadsheet? (01 mark)

……

(b)Circle one cell on the spreadsheet that contains text data (01 mark)

……

(c) What type of alignment is being used in cell B4? (01 mark)

……

(d) What data type was used in cell D6 ? (01 mark)

……
……

(e) The owner of the car showroom wants to calculate the total profit of these four cars.

What formula should he type in cell E9?

(01 mark)

……
……

(f) Write down the formula which was used to obtain the figure in cell E4

(01 mark)

……
……

(g) (i) What formula would be used to obtain the entry for cell C6?

(01 mark)

`……
……

(ii)Write the entry for the cell C6 (01 mark)

……
……..

(h) (i) What formula can be used to calculate the average buying price?

(01 mark)

……
……

(ii) What is the average price in C8? (01 mark)

……
……

25. (a) "The storage capacity of my computer is 25 GB." Explain the statement

……
……
……
……

(b) Mention two advantages hard disks have over flash disks.
(02 marks)

(i)……
……
……
……

(ii)……
……
……

(c)Why are computer games and other programs commonly supplied on CD-ROMS? (Give two reasons)
(02 marks)

(i)……
……
……
……

(ii)……
……
……
……

(d)(i)What are **Impact printers?**

……
……
……
……

Laser printers ?

……
……
……
……
(ii)Give one advantage and one disadvantage of a laser printer over a dot matrix printer (02 marks)
Advantage:……
……
……
……
Disadvantage:
……
…
……
……
26.(a)Differentiate digital computers from analog computers (02 marks)
……
……
……
……
(b)List four characteristics of mini-computers (04 marks)
(i)……
……..
(ii)
……
……..
(iv) ……
……...

(iv)

……
……..

(c)(i)Write the computer related abbreviation "PC" in full.
(01 mark)

PC

……
……

……
……

(ii) Give any three advantages of PC's over mini-computers

……
……

……
……

UGANDA NATIONAL EXAMINATION BOARD 2012
COMPUTER STUDIES 840/1
SOLUTIONS
SECTION A

1.	A	5.	D	9.	D	13.	C	17.	A
2.	A	6.	D	10.	C	14.	B	18.	A
3.	C	7.	A	11.	B	15.	C	19.	B
4.	C	8.	A	12.	A	16.	B	20.	B

SECTION B: COMPULSORY (60 MARKS)

Answer all questions in this section. All answers must be written in the spaces provided

21.(a) This is the process of creating, editing saving, printing, formatting and pasting nice looking documents which contains graphics and text

(ii) - Microsoft word
- Word star
- Professional write, lotus notes, word pro

(b) (i) By corrupting it with computer viruses
(ii) By practicing plagiarism
(iii) By deleting lerasing data accidentally
(c) (i) Applying passwords to the data
(ii) Updating antivirus applications on the computer
22. (a) Application programs perform specific or particular tasks for the user while system software controls and manages both the computer hardware, its drivers and all application software
(b) Wet browsers (Netscape navigator, Internet –explorer) Spread sheets (Ms Excel) Quattro Pro
(c) (i) Operating systems software
(ii) Programming languages
(iii) Utility programs
(d) (i) Manage and control the Hardware and application
(ii) Used to write Computer software
(iii) Perform tasks related to Managing the Computer System and its hardware
23. (a) This is a collection? Interconnection of two or more computers for a purpose of sharing resources
(b) **A LAN** is a computer network which works within a small geographical location while a **WAN** is a computer network which deals with computers set in a wide geographical
(c) (i) Bus Topology
(ii) Star Topology
(iii) Ring Toplology
(iv) Mesh Toplology
(d) (i) Must have a network interface card

(ii) Must have a Router / Moderm
(iii) Network cables (Twisted parr)
24. (a) Five Column
(b)A8
(c)
(d)Value
(e)
(f) = (D4 – C4)
(g) (i) = (D6-E6)
(ii) Write the entry for the cell C6
2700
(h) (i)
= Average (C4; C7)
(ii) What is the average price in C8? (01 mark
3012.5
25.(a) It means that my computer can store up to a maximum of $25x10^9$ Bytes of data since IEB is equivalent to $1x10^9$ bytes of data
(b) (i) Hard disks have bigger storage capacities compared to flash disks
(ii) Harddiskd are more durable when compared to flash disks
(c) (i) To avoid the games and programs from virus infections
(ii) The CD-ROMS if well handled can keep the games and programs for long
(d) (i)
Impact Printers? (01 mark)
These are Printer which produce characters and graphics on paper by use of a striking mechanism
Laser Printers

These produce characters and graphics on paper with a non striking mechanism. They use laser light
(ii)
Advantage: They produce better quality out put
Disadvantage; The initial cost of buying a laser printer is very expensive
26. (a) Digital computers represent their data inform of discrete values while Analog Computers represent their data and process in a continuous form
(b) (i) They accommodate users ranging from 60-500 users
(ii) They are bigger in size compared to microcomputers
(iii) They have bigger processors compared to micro-computer
(iv) They are more power and expensive
(c) (i) PC Personal Computer
(ii) Personal computers are more potable than minicomputers
Personal computers are cheaper than mini computers
Personal computers are suitable for home
Use since the resources are allocated to single user

SECTION C: (20 MARKS)
Answer only one question from this section. Answer to the question must be done in the answer booklet provided. Any additional question (s) answered will not be marked
27. Why is it important for a school to have a website? (20 marks)
A public elementary school needs multifarious approaches to attain its mission and vision. Usually, the school aimed to produce graduates who are globally competitive and skilled enough to land better jobs. To realize this, the school has to improve its instructional and institutional strategies.
The limited financial resources of the school could sometimes hinder the implementation of school projects and activities.

Take the case of a school with a small enrollment. The few number of students means few parents and a meager slice of the school budget based on per pupil allocation. This means it has less income in terms of voluntary donations and less maintenance and other operating expenses (MOOE). The few students, however, still require quality instructional materials same as with other schools.

To raise funds for TV sets, DVD players, laboratory apparatus and other learning support materials, the school then has to establish linkages with its stakeholders. Project proposals have to be submitted to local government offices and non-government organizations hoping that they could partake whatever funds they have.

One of the most untapped resources is the school alumni. Today, workers abound who are gainfully employed either here or abroad. These people have their hearts on their Alma Mater, the only problem is right communication.

Here comes Facebook, Twitter, Yahoo, Friendster and other social networking sites. Billions of people used these sites, and for sure, graduates of the school are using them too.

To connect to these people, a school must create a website where its accomplishments, problems and aspirations could be posted. It can invite its alumni to visit the school website, post their comment, read its articles and reports and revive the attachments between students and their Alma Mater. To ensure speedy contact, the school website may utilize Facebook, Twitter and other networks.

A school website has the following aims:

1. To establish contact with the school alumni and friends of the school;
2. To bring school updates, accomplishments and concerns to

the readers;
3. To seek financial assistance through networking;
4. To harness journalistic skills among the students; and
5. To maximize utilization of the Internet and Information Technology.

28. Identify the health hazards that are associated with the use of computers

28. Solutions: Health hazards that are associated with the use of computers

There are three main notable medical problems that can arise from using computers. They are Carpal Tunnel Syndrome, Computer Vision Syndrome and Musculoskeletal problems.

1.Carpal Tunnel Syndrome

The biggest medical problem associated with Computer-related work is Carpal Tunnel Syndrome (CTS). CTS is a stress-related injury caused by repetitive movement of joints, especially the wrist, and can lead to numerous musculoskeletal problems. It has become very common among Computer professionals due to poorly placed computer components and extensive typing over a long period of time. Studies conducted show that one in eight computer professionals suffer from CTS.

2.Computer Vision Syndrome

In many cases, frequent computer users suffer from Computer Vision Syndrome, which is a degenerative eye problem which can result in severely reduced eyesight (Myopia), blurred vision, overall eye tiredness and even Glaucoma. Computer Eye Syndrome is an umbrella term for many problems but the causes of these problems can be easily identified. When using a computer due to the size and setup of the monitor and components it is necessary for the user to be within at least two feet of the monitor when performing any type of computational

work. This presents many problems especially in older monitors due to an elevated amount of monitor glare, poor display quality and insufficient picture display refresh rates. Although these problems are more evident in older computers the newer models are not free from these problems either. Studies have been conducted into the correlation between computers and eye problems and it was found that the Ionizing radiation given off by monitors has severe detrimental effects on the eye and eyesight on a whole.

3.Musculoskeletal problems

Another medical issue caused by the use of computers is back and posture problems. These problems relate to musculoskeletal disorders caused by the need for the user to be crouched and hunched towards the monitors and computer components due to the design and positioning of these particular computer peripherals. This hunching forward of the user causes posture and back problems but is also the cause of severe and acute pain in the upper back, particularly pain in the neck and or shoulders.

29. Describe any five devices used for the storage of data on a computer.

What are Storage devices?

Storage Devices are the data storage devices that are used in the computers to store the data. The computer has many types of data storage devices. Some of them can be classified as the removable data Storage Devices and the others as the non removable data Storage Devices.

The memory is of two types; one is the primary memory and the other one is the secondary memory.

The primary memory is the volatile memory and the secondary memory is the non volatile memory. The volatile memory is the

kind of the memory that is erasable and the non volatile memory is the one where in the contents cannot be erased. Basically when we talk about the data storage devices it is generally assumed to be the secondary memory.

The secondary memory is used to store the data permanently in the computer. The secondary storage devices are usually as follows: hard disk drives – this is the most common type of storage device that is used in almost all the computer systems. The other ones include the floppy disk drives, the CD ROM, and the DVD ROM. The flash memory, the USB data card etc.

Floppy discs

A floppy disk is a data storage medium that is composed of a disk of thin, flexible floppy)magnetic storagemedium encased in asquareor rectangularplasticshell. Floppy disks are read and written by afloppy disk drive.

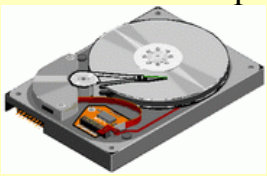
Application

Any use where small files such as word processing, small spreadsheets and databases need to be moved from one computer to another.
Useful to backup small data files.

Fixed hard discs

A hard disk drive is the device used to store large amounts of digital information in computers and related equipment like iPods and games consoles such as the Xbox 360 and PS3. Hard disk drives are used to store operating systems, software

and working data.
These are suitable for any application which requires very fast access to data for both reading and writing to. However, Hard disk drives may not be suitable for applications which need portability.
Almost all computers used a fixed hard disc. Used for on-line and real time processes requiring direct access. Used in file servers for computer networks to store large amount of data.



Portable hard discs
Portable hard discs are good sfun because you can carry data about all over the place and transfer information, programs, pictures, etc between computers.

Advantages:
Greatly improved data cargo carrying capacity (relative to the 1.44 Mb floppy disc).
You don't need to worry about the other person having the same type of special cartridge drive as yourself.
Disadvantages:
Hard drives have to be handled quite carefully, and when being transported should be wrapped in something soft and put in a padded bag.

More expensive than other forms of removable media.

Application

Portable disc discs are used to store very large files which need transporting from one computer to another and price is not an issue.

Magnetic tapes

Magnetic tape has been used for data storage for over 50 years. When storing large amounts of data, tape can be substantially less expensive than disk or other data storage options. Tape storage has always been used with large computer systems. Modern usage is primarily as a high capacity medium for backups and archives.

Drawbacks

Writing and retrieving data is slow.

It uses serial access for reading and writing.

Application

Magnetic tapes are used for application which requires extremely large storage capacity where speed of access is not an issue.

It is commonly used for backups of file servers for computer networks, in a variety of batch processing applications such as reading of bank cheques, payroll processing and general stock control.

Optical backing storage media such as CDs andDVDs

CDs tend to be used for large files (but smaller than 1Gb) which are too big for a floppy disc to hold such as music and general animation.
DVDs are used to hold very large files (several Gb) such as movie films. Both CDs and DVDs are portable i.e. they can be transported from one computer to another. Both can be used to store computer data.
CD ROM/DVD ROM Applications which require the prevention of deletion of data, accidental or otherwise. CDs used by software companies for distributing software programs and data; by Music companies for distributing music albums and by book publishers for distributing encyclopaedias, reference books etc. DVDs used by film distributors.

CD R/DVD R Applications which require a single 'burning' of data, e.g. CDs - recording of music downloads from the Internet, recording of music from MP3 format, recording of data for archiving or backup purposes. DVDs – recording of film movies and television programs.
CD RW/DVD RW Applications which require the updating of information and ability to record over old data. Not suitable for music recording but is very useful for keeping generations of files. DVDs have between five and ten times the capacity of CDs.

Solid state backing storage
These are the smallest form of memory available in the market today.
Widely used as removable storage.
They are more robust than other forms of storage.
Though expensive than other forms they can be easily written to and updated.
Memory sticks/Pen drives

USB flash drives are typically removable and rewritable, much smaller than a floppy disk. Storage capacities typically range from 64 MB to 64 GB. USB flash drives offer potential advantages over other portable storage devices, particularly the floppy disk.
They have a more compact shape, operate faster, hold much more data, have a more durable design, and operate more

reliably due to their lack of moving parts. Flash drives are widely used to transport files and backup data from computer to computer.

Flash memory cards

A memory card or flash memory card is a solid-state electronic flash memory data storage device used with digital cameras, handheld and Mobile computers, telephones, music players, video game consoles, and other electronics.

Nowadays, most new PCs have built-in slots for a variety of memory cards; Memory Stick, CompactFlash, SD, etc. Some digital gadgets support more than one memory card to ensure compatibility.

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SECTION A (20 marks)

1. RAM is……..

A. Permanent memory

B. Programmable memory
C. Read only
D. Working memory
2. Which of the following is not a purpose of the hyperlink
A. Closing the current web browser
B. Jumping to a new web page
C. Opening an e-mail program
D. Jumping to another position on the same web page
3. Sound stored and produced by computer is
A. Animation
B. Video
C. Synchronization
D. Audio
4. Invention of the defines the second generation
A. Magnetic core
B. Transistor
C. Relay
D. Vacuum tubes
5. The application that can link audio and video into ore form is……
A. Word processor
B. Multimedia
C. Spreadsheet
D. groupware
6. The is an electrical path for data to flow one point to another in a circuit.
A. System clock
B. Buffer
C. Bus
D. alu
7. A computer professional whose basic work is to write software code or instructions is called

A, programmer
B,system analyst
C,web designer
D, system manager
8. The internet service that enables exchange of text message in real-time is?
A. E-mail
B.telnet
C.chat
D. ftp
9. Data in a computer is stored in the ……format.
A. character
B.text
C.digital
D. multimedia
10. Spreadsheets are mainly used to perform……
A. Calculation
B.What-else analysis
C.Function
D. What-if analysis

11. A web browser is an example of ……soft ware
A. Utility
B.Programming language
C.System
D. application
12. The slide sorter command is associated with ……programs.

A. Word processing
B. Spreadsheets
C. Presentation
D. Database
13. The interconnection of two or more computers to enable communication is called…….
A. Protocols
B. Processing
C, Browsing
D, networking
14. A unique field used to identify a record in database is called……..
A. Field key
B. Private key
C. Primary key
D. Record key
15. Off-shelf software are examples of……
A. High level language
B. Application software
C. Utility software
D. Operating system
16. Which device specializes in producing line drawings as an output?
A. Monitor
B. Laser printer
C. Plotter
D. Dot-matrix printer
17. The word processing term similar to a dictionary is called a ……
A, Mail merger
B. Spell checker

C. Word wrap
D. Word scanner
18. The…….is an example of system software that uses a command line interface.
A, DOS
B,Macintosh
C.Windows
D. Novel
19. The……are instructions that direct the central processing unit (CPU)
what to do when the computer is switched on,
A. Disk memory
B.Applications
C.Firmware
D. Control unit
20. In a database management systems a collection of information about one stem is referred to
as a…….
A. Record
B.File
C.Field
D. Folder

Section B (60 marks)

21. **(a) Explain the term spreadsheets as used in computer studies**

Spreadsheets are counting and calculative programs or software which manipulate data inrows and columns. They are grid like structures made up of rows and columns used for calculations, management and analysis of numerical work. They are

computerized programs with pre-existing tables and formulas.

(b) Name three types of data that can be placed in a spreadsheet cell

- Labels (descriptive text such as titles, column headings.)
- Values/constants
- Formula/functions
- Date/time
- Currency

(c) What is the use of a formula in a spreadsheet?

- for performing calculations
- for arithmetic manipulation of data
- for analysis of data
- for logical manipulation of data

(d) Describe with illustrations, how a shop keeper can use a spreadsheet to keep records of his/her business

A shop keeper can begin by opening a spreadsheet
Then he/she keys in the labels of his records such as item (goods), quantity, cost price, selling
price, profit, loss.
He can finally enter his records in the spreadsheet as illustrated below

Item(good)	quantity	cost price	Selling price	Profit	loss
Posho	10	12,000	15,000	3,000	
Beans	15	30,000	33,000	3,000	
Bread	20	60,000	50,000		10,000

Table (02 marks) Explanation (02 marks)

22. (a) List four advantages of hard disk over compact disk(CD)

- Hard disk has more storage capacity than CD
- It is not prone to external harsh conditions like scratches
- It is more reliable in terms of data security
- It has a long life span than CD
- Its access time is faster compared to CD

(b) Describe the following

i. Flash memory

- This is a kind of nonvolatile memory that can be erased electronically and reprogrammed.
- Flash memory is used to store programs and data on persona/ computers, cellular phones, printers, digital cameras and personal digital Assistants (PDA's),
- flash memory is connected to a computer through ports

ii. Optical Character recognition

This kind of device includes a small optical scanner for reading characters and sophiscated OCR software for analyzing what is read. OCR readers are often used for turnaround documents such as Water bills, electricity bills, etc.

iii. Laser jet printer

These are non-impact/quite printers where the actual printing element doesn't touch the paper while printing. These kind of printers hardly make any noise when printing. They produce high quality output.

23. (a) (i) What is Computer communication

- This is the transmission of signals or data from one computer to another

➢ This is the high exchange of signals or data between computers and other electronic
devices via communication media such as cables or wireless

(ii) State any two advantages of using emails

➢ It's quick; e mail takes seconds to send compared to snail mail.
➢ It's cheap. Compared to posting or faxing messages
➢ The same message can easily be sent to many recipients at once by use list.
➢ Messages can be replied to or forwarded with speed and ease because the software automatically inputs the address of the sender.
➢ Other files can be sent as attachments which has increased the popularity of email in business.
➢ It is convenient because a message can be sent anywhere in the world without having to leave one's desk.
➢ E-mail can be used by businessmen to sent advertisements to potential customers.
➢ It is possible to send multimedia content as e-mail.
➢ The sender is informed in case the email is not sent so that is able to find other ways of delivering the message.
➢ A copy of the message is kept

(b) Explain the functions of the following

(i) Web server

This is a computer that fulfills user's requests for web pages

(ii) FTP

➢ Transfer Protocol (FTP) is a standard means of exchanging files over a TCP/IP network,
➢ This is an Internet standard that a/lows the user to upload and download files with other computers

(iii) HTTP

- HTTP(Hyper Text Transfer Protocol) is the protocol used to transmit hypertext over the internet.
- HTTP is the set of rules that govern how the multimedia (text, sound, video) files are
transmitted over the Internet.

24. A senior four class in Naluwerere S.S has formed a club. A file named CLUB MATES is to be kept by the secretary of the club. The design of CLUB MATES has the following fields. NAME, MEMBERSHIP-NUMBER, SEX and TELEPHONE. ,

(a) Suggest a primary key for CLUB MATES. Explain why it is chosen as the primary key

MEMBERSHIP-NUMBER

It the primary key because it is unique for each record

(b) If the longest name in a class is Sangalyambogo, suggest the minimum field length 13.

(c) Why is not a good idea use the field of AGE?. Suggest an appropriate field name and

type

This is because AGE changes as time goes on, so it would make the database loose integrity

as time goes on. Thus the appropriate field name is **date of birth** and type is **date/time**

(d) Suggest appropriate data types for the following fields

i. Membership

- Number
- Text
- Auto number

ii. SEX

- Text
- Lookup wizard

iii. Telephone

Text

25. (a) Give any two ways of classifying computers

- By size
- By processing speed
- By purpose/function
- By generation
- By technological processing

(b) Differentiate between the following terms

i. Analog and digital computers

Analog computers process data that is in continuous form or in form of measurable or changing phenomena **while**
Digital computers process data in form of digits! or binary or discrete values

ii. Main frame computer and micro computer

MAIN FRAME	**MICRO COMPUTERS**
Very Large in size	Small in size
Has high processing capability	Has low processing capability
Used by many people	Use by one or few people
Has high storage capacity	Has low storage capacity
Use by large organisations	Used by individuals, in schools, homes

(c) List any three types of micro computers

- Desktops
- Laptops/note books
- PDAs
- Smart phones
- Pads
- Tablets

26. a. State any four functions of operating system

- It makes the hardware to start
- Supervising, Coordinating and controlling operations of the hardware Such as spooling

printing jobs

- It provides an interface between the user and hardware.

Memory management. The OS allocates/assigns items to areas of memory (buffer) while they are being processed, monitors carefully the contents of these items in memory and clears these items from memory when no longer required by the CPU.

Configuring devices. OS support plug and play and can configure devices automatically

Monitoring system performance: OS can access and report information about various system resources and other devices. This enables a user to identify problems with resources.

Administering security: For systems that involve the users to. log on, the OS enables system administrators to review or audit the successful and unsuccessful log attempts. Note that tog on usually requires a user to have a user name and password

Storage Management: operating system controls all the storage operations. How the data or files will be stored into the computers and how the files will be accessed by the users, etc. OS has file management capabilities that performs functions of

storage and file management such as:
Extended machine: OS also behaves like an extended machine meaning it provides the sharing of files between Users. It also provides some geographical environments and various languages for communications. It provides many complex operations tike using many hard wares and soft wares
Master mind: Operating systems also perform many functions. It provides
booting without an operating system and provides facility to increase the logical memory
of the computer system by using physical memory of the computer system. An OS a/so
provides various types of formats like NTFS and FAT file systems.
Error handling and reporting: An OS controls the errors that are incurred into
programs and also provides recovery of systems when there is damage due to hardware
failure.

(b) List any two types of operating systems commonly used in computers

- Single user operating system
- Multiuser operating system
- Time sharing operating system
- Batch process operating system
- Real-time processing operating system
- Embedded operating systems

Or

- Graphical user interface (GUI)
- Command line interface (CLI)

(c) (i) What is a programming language?
These are artificial languages designed to communicate instructions to a machine, particularly a computer.
They are languages in which local instructions are written for a computer to perform different tasks.

(ii) Differentiate between machine language and high level language
Machine languages are languages written in binary form (represented as 0:s and 1's) which are easily understood by the computer. **While**
High level languages consist of statements or sequences of text including words, numbers, and punctuation, much like written natural languages.
Machine language was used in the first generation **while** High level languages emerged
during the second generation

Section C (20 marks)
27. (a) Describe any four ways in which computer crimes are committed
Computer crime refers to any Criminal activities which involve the use oflCTs to gain illegal or unauthorized access to a computer system with Intent of damaging, deleting or altering Computer data.
Some of the computer crimes are described below:
➢ Computer Viruses:- These are Malicious programs that can replicate themselves and harm the computer system on a network without the knowledge of the system users.
➢ Spam:- This is the Unsolicited sending of bulk email mostly for commercial purposes

- Hacking:- This is the activity of breaking into a computer system to,gain unauthorized access .
- Fraud:- This is the use of computer system to create fake documents, hide information or cheat unsuspecting public with intention of monetary benefits.
- Obscene or Offensive Content:- Access and use of harmful or offensive content such as pornography.
- Phishing:- The act of attempting to acquire sensitive information tike passwords, Usernames and credit card details by disguising as a trust worth source.
- Cyber stalking:-This is the use of ICTs mainly the internet to torture other individuals through false accusation, transmission of threats, damage to data and equipment.
- Identity theft:- This is the act of pretending to be someone else by using someone else's identity as one's own.
- Drug trafficking:- This involves the use of ICTs such as encrypted emails, restricted chartrooms to sell illegal substances
- Cyber terrorism:- This is the act of terrorism committed through the use of cyberspace or computer resources, e.g. the use of propaganda on the internet such as "there is a bomb planted on a shopping mall”
- Trespass:- This is the illegal access to data sent over a network
- Tapping:- The use of intelligent programs (spyware) to gain unauthorized access to information and data during transmission
- Alteration:- This is the illegal amendment of data or information with the intention o[misinforming others or gaining money
- Salami attack:- This is the use of a program to alter data in one's computer system by little margin and then transferring the stolen data to another computer system
- Eavesdropping:- This is the act of secretly listening to the

private conversation of ethers without their consent.

(b) Explain ways of safeguarding against computer crimes

- Use of log files:- These are system files installed in a computer system to maintain a record of how the system is being used
- Audit trail:- The thorough study done mostly by system administrators on an information system to identify any loopholes that can be used to illegally access the system resources
- Biometric Analysis:- This is a form of access control measure that takes His user's attributes such as finger prints and facial recognition.
- Data encryption:- This is the use of unreadable data (cipher) during data transmission which is later decrypted by the recipient. In most cases it is only the sender and the receiver who able to understand the encrypted data.
- Security patch:- This is a piece of code that is added to software so as to enhance its security feature
- Firewalls:- This is a security mechanism installed at the network gateway to block any unauthorized access to the system resources.
- Use of guinene and updated antivirus software
- Burglar proofing rooms where computers are kept
- Blocking some e websites
- Activating firewalls at the network gateway
- Use of passwords authorizing system to access of data
- Putting up physical security mechanisms such as use of armed guards, Use of CCTV
- cameras, sensors
- Employing system administrators to centrally manage system resources

28. Describe the nature and features of the four computer generations

Computer generation is the state of improvement in the development of computers over years.

First generation

The first computer generation is also known as the vacuum tube years. It was characterized of the Mowing technological developments and innovations;

- it relied on vacuum tubes to store and process information
- They had a maximized memory size of approximately 2kilobytes(2000 bytes) of RAM (Random access memory)
- It relied on machine language were computers were programmed depending on the machine and assembler languages
- Input and output of data/information was done using punched cards
- They used magnetic drum memories
- The speed was 10kilo instruction per second.

Examples of first generation computers included:
ENIAC (Electronic Numerical Integrator And Computer)-1946, EDVAC (Electronic Discrete Variable Automatic computer), UNIVAC (Universal Automatic Computer), IBM-650

Second generation

The Second computer generation is also known as the era of the transistor. This generation enabled the production of computers for the atomic energy industry.

The second generation was characterized of the following technological developments and innovations;

- It relied on transistor technology to store and process information. Computers were built up from individual

transistors wired up together.
- Memory size expanded to 32kb of RAM memory
- The speed increased to 300, 000 instructions per second
- High level programming languages such as FORTRAN (Formula Transition), COBOL (Common Business Oriented language) were introduced.
- Magnetic tape storage media were introduced
- They still relied on punched cards for input and output of data/information.

Examples of second generation computers included; Livermore Atomic research
computers (LARC), NCR 501 computers, CDC6600 Main frame computers, IBM 7094

Third generation

The third computer generation saw the development of the Integrated Circuits (ICs).. The integrated circuit technology was invented by **Robert Noyce** of Fair child corporation and **Jack Kilby** of Texas / instruments.

The third generation was characterized of the following technological developments and innovations;
- Computer users interacted with the machine using key boards and monitors instead of use of punched cards.
- Introduction of 0/S (Operating system) such **Multics** which allowed the device to run many different applications at a time (Parallel processing) with a central program to monitor memory.
- Introduction of simple programming languages like **BASIC** (Beginning All Purpose Symbolic Instruction Code)
- This period saw the production of the first microcomputers.(1974)
- It consisted of fast main frame computers

The advantage of this generation is that it lead to the use of smaller size computers which are more energy saving and are of low cost.
Examples of third generation computers included; IBM 360 Series, IBM 370, PDP-11, 8-bit microcomputers

Fourth generation
Computers of the fourth generation used large scale integration (LSI) and very large scale integration (VLSI) circuits. This generation led to the invention of the **microprocessor** (a single chip that could do all the processing of a full-scale computer).
The fourth generation was characterized of the following technological developments and innovations;

- Introduction of the microprocessor that led to the development of the micro and mini computers.
- The Intel 404 chip and was introduced, and it located all the components of the computer from CPU to memory
- The primary memory size increased to 128,000,250 kb(128 MB) of RAM
- There was development of programming languages which were easy to use such as C, C^{+}, C^{++}, JAVA, HTML, etc,
- Introduction of a variety of software.
- The speed accelerated to 50 million instructions per second (50MIPS).
- Storage mediums / memory used was done on magnetic disks, bubble memories and optical disks.
- Computers became more powerful and cheap enough that schools and homes were able to

purchase them.
➢ There was limited Artificial intelligence and expert systems
➢ Introduction of robotic technology (Robots)
Examples of fourth generation computers included;
➢ Computers with processors 8088,802886,80386,80486
➢ Pentium 1, Pentium 11, Pentium 111, Pentium 1V
➢ Apple macintosh
➢ Powerful main frame computers like IBM 308, Ambah 580, etc.

29. Some people believe that using computers will cause unemployment whilst others believe that the economic survival of a society depends on making even greater use of computers. Describe how computers can

(a) Cause unemployment

➢ Office messengers could be replaced by use of computer gadgets for communication
such mobile, phones, emails, chat rooms
➢ Machine operators could be replaced by automatic computers or even robotic
technology
➢ Post office jobs could be replaced by use of computers for sending Emails
➢ Customs officers, clearing & forwarding officers could be replaced by use of online
transaction of goods
➢ Agents responsible for reading Electricity meters at premises could be replaced by the,
e-payment system
➢ The computerization of every sector in n organization could lead for companies to lay
off some workers

- In instances where traditional skills are now irrelevant, computers could lead to unemployment, e.g. when the physical money counting /s replaced with money counting machines

(b) Be the basis of economic survival

- Running an internet cafe
- Computer and ICT teachers and instructors
- E-money dealers
- Technicians -those involved in servicing and maintenance of computers
- People operating computer secretarial bureaus
- Sales men involved in sale of computers and computer accessories.
- Internet service providers - those in charge of supplying internet connections to clients and other services
- Software developers and vendors
- People involved in video shooting, music recording and editing
- Computer professionals such as web developers, system administrators, data base administrators

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SECTION A (20 marks)

1. A(n)……is a set of programs that helps the computer to manage its resources
A. Bootstrap loader
B. Application
C. Operating system
D. Diagnostic routine
2. How many bits are in the word "BYE"?
A. 9
B. 12
C. 24
D. 27
3. The highest capacity computers used primarily for research purposes are
A. microcomputers
B. Supercomputers
C. Minicomputers
D. Personal computers
4. The……..controls and manipulates data to produce information
A. keyboard
B. Monitor
C. CRT
D. CPU
5. Two types of memory chips are RAM and…….
A. RISC
B. MCA
C. CD-ROM
D. ROM

6. The Grammar of a programming language is called
A. syntax
B. methodology
C. Documentation
D. flowcharts
7. If you Change your mind a moment after you have deleted something you usually…..
A. undo your last action
B. Unsavethe file
C. Reboot the computer
D. Remember what you deleted
8. Commands or Formulas you create and store in a spreadsheet are called……....
A. icons
B. templates
C. Graphics
D. macros
9. Which of the following may copy itself in to memory or a disk drive until no more space is left
A. Virus
B. E-mail
C. Dirty data
D. Antivirus
10. Which of the following inventions is a major discovery in computer evolution in the second generation ?
A. intergrateed circuits
B. Transistors
C. Vacuum Tubes
D. Microprocessors
11. Restarting a computer using control keys can be technically called

A. Booting
B. Warm booting
C. Cold booting
D. Packet switching
12. Which of the following CRT is likely to display the best colours to the user?
A. Video graphic array (VGA)
B. Enhanced Graphic Array (EGA)
C. Super Video Graphic Array(SVGA)
D. CRT Array
13 The facility for setting a password to protect a spreadsheet is found under the…....menu
A. tools
B. data
C. format
D. window
14, The following are features of word processing software except.....
A. spellchecker
B. thesaurus
C. What-if analysis
D. Justification
15. In an e-mail the.....provides information about the sender
A. header;
B. subject
C. attachment
D. message
16. Which of the following allows different computers on different networks to communicate?
A. E-mail

B.BBS
C.LAN
D. TCP/IP
17. The networking device that converts analog signals to digital and vice versa is a ……..
A. Protocol
B.hub
C.server
D. Modem

18. Which of the following computer applications is most suitable for stock checking in a super market ?
A. word process
B.Database
C.Desktop publisher
D. Spreadsheet.

19. A web page is a file that contains……
A. Text and internal explorer
B.HTML tags and Google
C.Text and HMTL tags
D. Internet explorer and hyperlinks

20. In a database a …….is a primary object.
A. record
B.table
C.query
D. report

Section B (60 marks)

21. (a) The application of computers has reached most sectors in society and has created an improvement in work places. State any two institutions where they can be used and for what purpose.

(i) Institution: in a bank

Purpose:

- For keeping customer records
- For money counting
- For detecting fake notes
- For security purposes by use of sensors, CCTV cameras
- For communication purposes, such As use of internet connected computer to send &
- receive message
- For withdraw and deposit of money at ATMs

(ii) Institution: in a school

Purpose:

- for keeping students records such as school fees, attendance
- for communication purposes, such As use of internet connected computer to send'&
- receive message to parents and public
- for mark sheeting and grading of students by class teachers
- for research by both teachers on complex topics, and online collaborated teaching

(iii) Institution: in a hospital

Purpose:

- Computers ease many surgical procedures such as laparoscopic surgeries by doctors
- ICT high end machines such as CT scan, Ultra sound devices,

magnetic Imaging (MRI)
have enabled the diagnosis and cure of many diseases.
➢ Computers enable online consultations by medical professionals. With the use of web
conferences doctors can treat patients globally in liaison with other doctors online.
➢ Computers have enabled patient's records (data) to be manageable in hospitals.
➢ Information about medical history of patients, physical ailments, already diagnosed
diseases and prescribed medicine are stored in the hospital's data bases,
➢ Computers are a means of research by medical professions, an unknown
epidemic/disease can be researched on using online consultation,
➢ Computer have enabled faster communication between medical professionals, doctors
and patients. It is possible to seek expert opinion over the internet or by a phone call as
regards, a sickness a patient may be having.
➢ ICT based gadgets enable the hospital to monitor the patients in hospitals. For example
a doctor sited in his/her office can easily monitor the health status of patient lying on a hospital bed in another room by a networked environment.
➢ The security of the hospital, property and the patients is ensured by high end ICT
devices such as CCTV cameras, sensors, etc.

(b) Mention two areas where the number of workers has been reduced due to the introduction of computers

- In postal service delivery: people instead use computer based communication such as e-mail, chatting, use of mobile phones.
- In electricity meter reading, where I has been replaced by the digital way of payment for the units one uses (“YAKA")
- In controlling of traffic along road junctions. These have been eased by used of traffic lights.
- Office messengers have been replaced by use of mobile phone calls, use of internet such as e-mail, chatting, and instant messaging.
- Clearing and forwarding agents: have been replaced by direct access between customer and seller of item using online transactions.
- Tax agents of the revenue body have been replaced by Online payment system.
- Machine operators have been replaced by computerized control of machines.

(c) State two examples of computer crimes

- Computer virus
- Spam
- Hacking
- Fraud
- Obscene or offensive content
- Phishing
- Cyber stalking
- Drug trafficking
- Tapping
- Cyber terrorism

(d) Describe two ways of protecting people against Computer crimes

➢ Installing Guinene antivirus software. This helps to ensure that your computer and the
data on it is protected against attacks from malicious codes,
➢ Use Firewalls: this is a security mechanism installed at the network gateway to block any
unauthorized access to system resources
➢ Data encryption: the use of unreadable data (cipher) during data transmission which is
➢ later decrypted
➢ Log files: these are system file installed in a computer system to maintain a record of how
the system is being used.
➢ Biometric analysis: this is a form of access control measure that takes a user's attributes
such as finger prints and facial recognition.
➢ Burglar proofing rooms where computers are kept
➢ Blocking some e websites.
➢ Activating firewalls at the network gateway.
➢ Use of pass words authorizing system to access of data.
➢ Putting up physical security mechanisms such as use of armed guards. Use of CC TV
cameras, sensors
➢ Employing system administrators to centrally manage system resources

22. (a) Define the following presentation software terms

(i) Master layout

This is a parent slide (plain white slide) layout that contains text and objects that will appear on all other slides such as headers & footers, slide number, date & time, etc. all sides are created

using the slide master except the title slide which uses the Title master

(ii) Clip gallery

This is a collection of available clip art, graphics, images which can be accessed when designing a presentation. This can be assed from the insert tools menu.

(iii) Slide sorter view

This provides a convenient way in which all slides in a presentation can be viewed as icons in a single window. These are usually numbered. This view allows you order or rearrange slides. This view is important when applying animations, adding slide timings, formatting slides.

(b) Give any four tasks where a word processor is most appropriate

- Repetitive tasks like circulars, public notices, Memos, prospectus, etc.
- Tabular reports like tables, report cards, forms, etc..
- General correspondence like letters, invoices, speeches, etc.
- Time consuming tasks like; creating reports, tenders, contracts, agreements
- Repetitive and tiresome tasks like mail merging for meetings, invitations, circulars, etc.
- Other important tasks like charts, objects, certificates

23. (a) Differentiate between computer Hardware and Software

Hardware

(i) is tangible

(ii) Enable the user to physically use a computer, such as input, output, storage, process **Software**

(i) Is intangible

(ii) Controls the operation of hardware

(b) List any four internal components of computer hardware

- Motherboard
- Power supply unit
- Memory chips (RAM, ROM)
- Microprocessor (CPU)
- Expansion slots
- Adapter cards
- Cooling systems (fans)
- Ports and connectors
- Storage drives(HDD,FDD,/ODD)
- Data Buses
- Internal cables

(c) Name two computer input devices other than a keyboard and a mouse

- Optical scanner
- digital cameras
- Voice recognition Equipment (VRE)
- touch pad
- touch screen
- track ball
- Joystick
- light pen
- stylus and graphic tablets
- bar code reader
- Web cam
- Sensor & remote-sensor
- PC earners
- Microphone
- MIDI devices

24. (a) (i) Define a Computer Network

This is the interconnection of two or more computers and other devices using transmission / communication media for purposes of communication, sharing information and resources.

(ii) State three advantages of computer Networking

✓ It Facilitates easy communications e.g. through Electronic mail

✓ It Reduces on cost by sharing hardware like printers and sharing software among
network users since one device is jointly used on the network instead of installing
devices to each computer.
➢ It allows for tight control over who has access to data in the system
➢ It enables sharing of data and information stored on any other computer on the network.
➢ It enables online learning and collaborative research
➢ It allows access to free common databases and databanks like free software and ATM
services.
➢ Software is easily upgraded on the network since it is done at ago en the server.
➢ Computer networks enable centralized administration, control and monitoring of individual users on the network.
➢ Computer networks enable workgroup Computing.
Workgroup software allows many users to work on a document or project concurrently.
➢ Networks provide a very rapid method for sharing and transferring files instead of using a time consuming method of using movable disks to transfer data from one computer to the other.
➢ It enables flexible access. Users can log on and access their work from any workstation on the network.

(b) What is the function of a server in a computer network?

✓ It fulfills client requests
✓ It controls and manages the network resources, making them available to its clients (computers connected to it).

(c) (i) What is a search engine ?

This is software that allows one to search for web pages on the World Wide Web, by typing in a search query relating to the topic that one is searching for.

(ii) Name any two search engines that you are familiar with

- Google
- Yahoo search
- Bing
- Dogpile
- Altavista
- Youtube
- Free book search
- Monster
- Business.com
- Alibaba.com

25. (a)What is the major difference between an electronic and a manual database?

Electronic databases are entirely dependent on use of computers while manual databases are dependent on use of file in data management

(b) Mention any three advantages of an electronic database over a manual database

- Controls redundancy: In the File-based system every user group maintains and independently keeps its own files on their data base e.g. students, thus much of the data is stored twice or more which leads to redundancy. This leads to loss of storage space, duplication of data, and inconsistence in similar data files when it comes to independent updates. Hence DBMS enables the control of redundancy.
- Restricting Unauthorized Access; electronic database provide security and authorization to its users.
- Providing backup and recovery: electronic database provides

facilities for recovery from hardware and software failures.
- Improves data accessibility and responsiveness: it is possible to access data via network connection.
- Improves maintenance through data independence

(c) State any three database application
- School registers
- National voters register
- National passport register
- National population and housing database
- Mobile Phone subscribers data base
- Address books
- National ID database

(d) Define the term Primary key.
This is a field or combination of fields that uniquely identifies each record in the table.

26. (a) What is a computer file ?
A file is a collection of related data
It can also be referred to as a block of arbitrary information, or resource for storing information, which is available to a computer program and is usually based on some kind of durable storage.

(b) Apart from printing a file, state any three operations which can be done on a file
- Editing a file
- Printing a file
- Saving a file
- Protecting a file by encrypting It or pass wording it

(c) (i) Identify the applications associated with the given file extensions
-doc word processor

-exe executable file
-pdf Portable document format, a file type that displays finished text and-graphics in application such as Adobe Acrobat

(ii) State two common graphical file format extensions

- gif
- jpeg or mpg
- png
- BMP

Section C (20 marks)

27. (a) Describe the classifications of computers by process, purpose, size and processing power

Classification by Process

- Computers can be classified according to what type of data they process, such as discrete or continuous data.
- Thus we have digital computers and analog computers for this purpose
- Digital computers are computers that process data in discrete values and they use binary codes to represent information transmitted as zeros (0s) and ones (1s) e.g. digital watches, digital thermometers.
- Analog computers are those that process data represented in continuous form or as measurable entities e.g. speed meters, voltmeters, hygrometers

Classification by purpose

- Computers can be classified according to the work or task they are designed to perform Thus we have special purpose computers and general purpose computers
- Special purpose computers are computers designed to handle only a particular task and can't do any other task e.g. digital

watches for time only, pocket calculators for calculations only, lifts or easing movement up a storage building

- General purposes computers are computers designed to solve a wide range of problems and are able to carry out a variety of activities as needed. Computers for playing games, word processing, accounting.

Classification by size

➢ Computers can be categorized according to how big or small they are; thus we have super computers, main frame computers, mini computers and micro computers

➢ Supercomputers are the fastest, most powerful and very big computers. These are used for tasks such as forecasting weather reports worldwide, manufacturing nuclear weapons, nuclear reactants in robots

➢ Main frame computers are also very large computers fast and relatively expensive. They are I capable of supporting many users at the same time. They are used in big organizations such as universities, big hospitals, and mobile telephone companies, etc

➢ Mini computers posses the same principals as main frame but are relatively smaller in size. They support a smaller number of users at the same time depending on the model, they -are used in industries for automatic control of machinery, in research labs, etc

➢ Micro-computers commonly known as personal computers are the smallest of all, they are single user based e.g. PDAs, desktops, Laptops, notebooks, I-pads, mobile phones

Processing power

- Computers are classified according to how fast they can accomplish a certain processing task. Thus the faster the

processing power of the computer the faster the computer. The processing speed of the computer is measured in hertz. The common types of processors on the market according to the model are Pentium iv, Pentium duo core, Pentium i-3 core, etc also we have AMD Sempron, AMD Athlon, AMD Turion Ultra, AMD Dual core.

28. Explain the effects of the introduction of computers on society today

Computers have always assisted to solve the problems faced by mankind. Today people use computers in almost every walk of life thus are necessary in today's society. They have come with both positive and negative impacts to our society

Positive impacts of computers on society

➢ **Ease of communication:**

The diffusion of the computer gadgets have drastically made communication easier between individuals. For example use of computers with internet, use of mobile phones for communication.

➢ **Improvement on peoples standards of leaving:**

The use of computers in areas such as entertainment, communications, banking, etc. has drastically improved peoples standards of living. Many people can now afford personal computers & modems for easy access to internet services. Media houses such as TV stations, radio stations, online entertainment sites such as You tube have greatly improved the entertainment in homes. Some, people can afford high valued ICTs like IPads, tablets. Now days many people need just to move with an ATM or credit cards to withdraw money at any time rather than suffer with limited banking hours.

➢ **Enhancement of personal security:**

With the evolution of technology many homes and private individuals can now beef up the security of their property. People can now afford having automatic remote-controlled gates or doors, installing of CCTV cameras & sensors which are computer assisted.

➢ **Eased education with Online cyber classes:**

There are online universities that offer online degrees and also distance, learning (cyber classes). This makes learning easier and convenient for individuals who may be busy and are unable to attend lectures physically. Research from home or office is also possible using personal computers.

➢ **There is growth of labour productivity:**

With the continued use of computers, many workers in firms have improved on their personal skills and productivity. A work force which has been trained or has computer skills may bring about innovative skills to the company.

➢ Enhancement of advertisement of goods and services:

Many sectors, industries and individuals use the internet for advertising. Other media such as TV and radio stations are massively being used for adverts hence accelerating the customer base for economic development.

➢ With the use of computers in production in industries, sufficient competitive pressure, has led to quality improvement and innovations hence stimulating further productivity.

➢ The use of computers has led to the introduction of sectors producing goods and services such as software developers, recording studios, ISP companies such as broad band, UTL, MTN, Orange etc.

➢ The use of internet as the best way of advertising (virtual reality) helps to safe guard and protect the local tourism ecology and landscapes as many people can just use websites to tour

various sites without physically going there.

Negative impacts of computers on society:

➢ Risk of addiction:- Many people don't care about anything else because they spend many
Hours in front of a computer.

➢ Eye Strain:- Using computer for long can be very harmful to the eyes.

➢ Over dependence:- Our creativity, skills and reasoning can decrease when we are too dependant to the computer.

➢ For instance, with email replacing the hand-written letter, Onscreen Art designing
instead of Hand drawing Art etc.

➢ Computer can destroy the culture of a certain group of people in the society, especially
youths:

➢ Expensive, Computers are still costly because The initial costing and maintenance cost of
a computer are very high.

➢ Need for Extra Training:- Use of computers require additional training before use of
computers and their programs.

➢ Social isolation:- Excessive use of computer for communication with others threatens to reduce the intensity of personal bond that often develops between people, For instance the opting to use telephone calls instead of physical interaction.

➢ Computers have led to unemployment of people such as Tellers, shop workers, postal
workers; since many manual/repetitive jobs have been replaced by computers like ATMs.

➢ Electronic fraud:- Stealing money electronically through practices like Credit card

cloning

➢ Impact on Environment:- Computer manufacturing processes and computer waste
are-depleting natural resources and polluting the environment. Excessive use of
computers may lead to pollution especially from toxic substances used in making hardware devices.

➢ Electronic fraud:- Stealing of money online is now rampant:- Commerce on the internet
is mainly paid for by use of the electronic transfer of funds system or use of credit cards, either personal or corporate credit cards. Therefore thieves- ere always active in obtaining stolen credit card details to purchase goods and services over the internet. This type of crime ruins many innocent people millions of shillings yearly.

➢ Hackers or crackers .Unauthorized access into computers possibly to access information,
compromising privacy. E.g. Wikileaks

➢ Hackers can do enormous amount of damage if they break into the computer system.
Computers which form part of networks or those with external links such as attached modems are in danger from hackers. Many hackers often have no specific fraudulent intent but just enjoy the challenge of breaking into the system. However in some instances, a hacker's purpose could be to commit fraud, to steal commercially valuable data, to damage or delete the data in order to harm the company. Hacking is often carried out by corrupt employees or employers having a grudge with others. These may have inside knowledge of pass words and user IDs which makes it easy for them to harm others.

➢ Computer crime has become rampant:- There is stealing of

software (this includes all aspects of making or installing of illegal copies of software. People may damage or destroy ICT facilities belonging to others or even cause a general havoc for fun. Damaging or disrupting someone's system may be done for revenge purposes.

- Software Piracy:- Stealing software, not paying for licenses through cracking.
- Presence of Viruses:- You may lose all your programs, files, documents folders and other
- data on your computer because of virus infection on the computer.
- Moral Decay:- The internet has websites with content such as pomography, which have a

bad impact on the users especially the young children.

29. (a) Why do people prefer to use flash disks over floppy disks today ?

People prefer to use flash disks over floppy disks today due to the following reasons;

- Flash disks have a bigger storage capacity of data (from 500MB to up to GBs of data storage) compared to a limited storage of floppies (1.44MB)
- Flash disks are not prone to magnetic interference
- Flash disks suite the latest technology development of system units which almost use USB technology only without Floppy disk Drives (FDD)
- Flash disks are more portable than Floppy disks
- Can support storage of multimedia content

(b) Outline the ways computers and data may be protected against viruses

- Installing an Updated Antivirus software
- Using Guineine Antivirus software
- Scanning all external storage devices for viruses before using

them with the computer
- Avoid down loading content from the internet without being sure of their safety
- Sensitizing computer users on the damage caused by viruses
- Installing a fire wall at the network gateway
- Avoid using external storage devices from unknown sources as these may be contaminated with virus code
- Avoid opening email attachments as a habit
- Avoid access to spam messages as most of them may contain malicious codes

COMPUTER STUDIES
Paper 1
Oct./Nov.2015
2½ hours

SECTION A (20 marks)

1. The ability of the computer torn perform many different tasks is termed as……
A. reliability
B.efficiency
C.versatility
D. accuracy

2. Digital cameras save the expense of all the following except
A. Duplication
B.Posting
C.Film developing
D. Battery power

3. In-computer storage capacity, a megabyte is approximately equivalent to …... byte
A. 1,073,741,84
B.1,048,574
C.1,024
D. 1,099,511,627,776

4. When using a word processor, a footer can best be defined as……
A. A text that prints in the button margin of a page
B.A text that in the gutter of the page
C.A text that that prints in the top margin of the page
D. The last word of the document

5. Spreadsheet would be the best application to carry out
A. The production of letters
B.Budgeting and financial projections
C.Notes about appointments and meetings
. D. Drawing of graphics and structural designs

6. The process of writing a program is called
A. Running
B.Compiling
C.Coding
D. debugging

7. Which one of the sets below contains network security technology?
A. Firewall and encryption
B.Pharming and phishing
C.Spamming and adware
D. Cookies and spyware

8. Computer management utilities, such as disk defragmentation, are found in……..menu
A. Entertainment
B.Accessibility
C.System tools
D. communications
9. Which one of the following makes up the last phase of the system development?
A, Feasibility study
B.Maintenance
C,Coding
D. testing
10.The startup computer Instructions on **boot up** are found in…….
A. ROM BIOS
B.CPU
C.REGISTER

D. CONFIG. SYS

11. The standard make up language used in creating most webpages is
A. HTTP
B. TCP
C. URL
D. HTML
12. In data base, a field is ……
A, A unit of information in a record
B. The way information is displayed
C, The particular listing with a file
D. The entire collection of data
13. Which one of these below is not performed by the computer's operating system?
A, Loading of computer program
B, Interfacing between the user and the program
C. Removing computer viruses
D. Scheduling tasks for execution
14. The development of wireless computer networks was a technological milestone in the……. Generation.
A, First
B, Second
C. Third
D. Fourth
15. The following are web browsers except ……
A. Internet explorer
B. Netscape navigators
C. Mosaic
D. Google

16. The process transferring files from a client's computer to server on the internet, referred to as…….

A. Saving
B. Up loading
C. Downloading
D. storing

17, Which one of the following is not a utility program?
A. Back up
B. Registers
C. defragmentation
D. disk cleaning

18, The software most suitable producing visual aids to enhance communication of ideas is…….. software.
A. Database
B. Spreadsheet
C. Presentation
D. Word processing

19. A combination of characters associated with a user name that allows one to access computer
resources is referred to as……
A. Users ID
B. Login
C. Password
D. Word star

20. Which of the following structures is not correct for a URL?s
A. ftp://WWW.google.com
B. https://WWW.google.com
C. http://WWW.google.com
D. html://www..google.com

Section B (60 marks)

21. (a) Give two ways of categorizing computers.

- by process
- by size
- by purpose
- by processing speed/power

(b) Name three stages of the data processing cycle

- input of data
- processing of data
- output of information
- storage of information

(c) (i) Distinguish between legal issues and ethical issues

Legal issues refers to those aspects that may call for legal redress in case of
misuse of ICTs by professionals **while**
Ethical issues refers to aspects related to the misuse of use of lCTs by professionals

(ii) Give any three Computer ethical issues

- Plagiarism
- Software piracy
- Copyright infringement
- Misuse
- libel

22. (a) (i) Name any two ports through which computer peripherals are connected (02 marks)

- Universal Serial Bus(USB) ports
- PS/2 ports

- Fire wire
- Video graphics array (VGA)
- Serial ports
- Parallel ports

(ii) Give two components inside a computer which can be replaced or upgraded, when the computer is slow

- Random Access Memory (RAM)
- Hard disk
- Central processing Unit (CPU)

(b) Outline two uses of a computer system control panel

- Changing settings for windows
- Creating and editing user accounts
- Changing settings for keyboard and other input devices
- Uninstalling a program
- Checking properties of connected output devices such as printers, projectors
- Changing the appearance & personalization of desktop
- Configuration of networks
- Creating security procedures for your PC and network

(c) (i) Explain a computer interface

A computer system interface is that part of software with which a computer user interacts with. It controls how data and instructions are entered and how information is presented on the screen.

(ii) Identify any two features of an application software interface

- Input, allowing a user to manipulate a system
- Output, allowing the system to indicate the effects of a users'

manipulation

23. (a) Explain the following functions as used in applications
(i) IF
This function is useful in spread sheet when you want to test for more than one value. For example "has a student Passed or Failed" ? The function can a/so be used in tasks such as grading student's exam scores.
(ii) MAX

This function returns the biggest or maximum value from a given range of cells
(b) When is an absolute cell referencing necessary In a spreadsheet formula?
When you want to copy the same cell contents to other parts of a spreadsheet
(c) Give the function of the following field properties in a database table design
(i) Default value

This ensures that the a certain value is set to prevent the typing of the same thing numerous times
(ii) Validation rule (02 marks)
This gives an expression that must be true whenever you add or Change
value in a field e.g. "F" or "M"
Or
These specify the requirements for the data entered in a database

24. (a) (i) What is a peer to peer computer network?

This is an interconnected group of equal computers where there is no hierarchy among them, each computer acts as both a client and a server to others on the network

(ii) Name any three examples of communication media used in a computer network

- coaxial cables
- optical fibers
- wireless transmission media (such Wi-Fi)

(b) (i) Define a webpage.

This is an HTML document that can be accessed and read over the World Wide Web.

(ii) State three benefits of a school having a website

- It is used for communication purposes. The school can reach out to a wider audience worldwide, for example, in school recruitment.
- Used for mobilization of sources. The website can be used for resource mobilization as it can reach out to a wide supporting audience.
- For advertising purposes. The website can provide general Information about the school.
- The website can provide a forum for discussion of issues concerning the school using blogs.
- The website can provide 2 forum for students and teachers to collaborate with others elsewhere.

- The site can provide a forum for parents and alumni feedback.
- It can work as a depositor/ (store) where students' achievement data is posted for easy access by the stakeholders.
- It can help teachers to collaborate with other teachers worldwide.
- The site can be used to publish students and teachers work.
- It can be used for teaching and learning e.g. the website can provide subject content notes to students.

25. (a) State five factors considered in order to come up with an attractive and professional presentation

- Identify the goal of the presentation
- Use slide designs effectively
- Establish a uniform, single look for the presentation
- Include the title page with your name, contact, date and session topic for the presentation
- Include only the main points
- Present the information consistently
- Include only one main concept per slide. Do not crowd too many concepts
- Include in your slides graphics, charts, clip an videos to add avariety and keep your audience interested
- Avoid fancy fonts
- Avoid script fonts
- Use contrasting colors for text and background so that the text is not fused into the background

- Do not include to many slides in the presentation
- Avoid excessive use of slide transitions and animations
- Keep animations consistent in the presentation by using animation schemes and apply a uniform transition throughout the presentation

(b) Give any two ways that can be used to navigate an electronic word

- By use of vertical and horizontal scroll bars with the help of a mouse
- By use of arrow keys
- By use of page up and page down keys on the keyboard any two answers

(c) Outline the effects of the following word processing features:

(i) Indentation

This leads to the increase or decrease in the amount of space between the text and margin.

(ii) Superscript

This enables the creation of a text above another text or creating like a power or an exponent.

(iii) Line

This enables the vertical spacing to be creates or adjusted in between lines,

26. (a) Define the term Off-shelf software

These are commercial software packages designer to meet the needs of a wide variety of users, e.g. word processors, spreadsheets, databases, presentations,

(b) In the table below, categorize the given programs as either system software or application software

- Auto CAD - Windows 2000
- Disk defragmenter - Publisher

SYSTEM SOFTWARE	APPLICATION SOFTWARE
Windows 2000	Auto CAD
Disk defragmenter	Publisher

(04 marks) (e)

(c) Explain the following computer programming tools

(i) Compiler

This is a program that translates an entire high level program into machine code, the language the computer can understand.

(ii) Interpreter

This is a program that translates the source high level programming language into machine code line by Sine while the program is running.

<u>Section C (20 marks)</u>

27. (a) You are provided with the following computer hardware parts and other electrical accessories.

(i) AC mains, socket outlets
(ii) Uninterruptible Power Supply (UFS)
(iii) UPS power cable
(iv) System unit
(v) System unit power
(vi) Monitor
(vii) monitor power cable
(viii) Mouse
(ix) Keyboard

(x) VGA cable

(b) Describe how they can be assembled to make a functioning computer ***(12 marks)***

➢ Fix the VGA cable to the monitor and system unit such that there is a communication between them
➢ Attach both the key board and mouth to the system unit by plugging to their respective ports
➢ Attach the system unit power cable to the monitor
➢ Attach the UPS power cables from system unit and the monitor such that they make connections with the UPS
Fix the power cable from the UPS to the AC mains socket outlet

(c) Outline the logical order of switching on the computer system, assembled in (a) above

➢ *Switch on the UPS by pressing its power button*
➢ Switch on the monitor by pressing its power button
➢ Switch on the system unit (boot the computer) by pressing its power button
➢ Wait for the sequence of operations on the boot up to take place (POST)
There's a display of information from the system and windows logo screen (e.g. windows 7), appears if the computer is using windows otherwise you go to DOS prompts if using MSDOS

28. (a) Describe any four services that are provided by the internet

E- mail:- Electronic mail, commonly referred to as email or e-mail. Is a method of exchanging digital messages from an author to one or more recipients across the internet or other computer networks? For one to use e-mail service he/she must own an email account and an email software must be installed

on the computer to be used. E.g. Yahoo, Eudora light, Gmail, Opera mail, etc.

Mailing lists:- This is an e-mailing facility which distributes the same messages to the electronic mailboxes of all subscribers to the mailing list. The automated list manager assembles all the messages and sends them to the subscribers which enable email discussion among the subscribers of a particular mailing list one can subscribe to or unsubscribe from a mailing list.

Chat rooms:- This is any technology ranging from real-time online chat over instant messaging and online forums to fully immersive graphical social environments.

The primary use of a chat room is to share information via text with a group of other users. **Internet forum/message boards:-** An Internet forum, or message board, is an online discussion site where people can hold conversations in the form of posted messages. They differ from chat rooms in that messages are at least temporarily archived. Also, depending on the access level of a user or the forum set-up, a posted message might need to be approved by a moderator before it becomes visible.

Voice over Internet Protocol (VoIP):- VoIP is a category of hardware and software that enables people to use the Internet as the transmission medium for telephone calls by sending voice data !n packets using IP rather than by traditional circuit transmissions of the PSTN.

With VoIP the user does not need to pay for the call since he/she is already subscribed to internet 'access

Video Conferencing :- Videoconferencing is the conduct of a session/discussion using a set of telecommunication technologies which allow two or more locations to communicate by simultaneous two-way real time video and audio transmissions. Videoconferencing is mostly used in business, education, medicine and media.

It reduces the need to travel to bring people together.

E-Commence (E-Trade):- E-Commerce (electronic commerce) is a business transaction that is carried out electronically over the internet.

This is business where the buying, and selling of products or services is conducted over electronic systems such as the Internet and other computer networks, involving the exchange of data to facilitate the financing and payment of business transactions.

Business organizations have websites (online market place), where online transactions and purchases can be made. It is a modern way of carrying out business internationally.

With the use of the internet for E-trade, companies and business entities can easily communicate with their clients and business partners.

(b) Explain the functions of any four devices that can be used to connect to the internet

(12, marks)

Network Interface Cards (NIC):- This is a piece of computer hardware allows a computer to physically access a networking medium.It is an electronic communication device that connects a computer to a local area network having a server,

Routers:- The router can a/so be referred to as a device that connects computers to a single Digital **Subscriber Line(DSL) for internet access.**

The main function of the router is to sort and send data packets to their destinations based on their IP addresses.

Repeaters:- A repeater is a device that is used to regenerate and amplifies signals along a communication channel to create long-distance networks by placing it between two segments of the

network channel to overcome distance limitations

Hubs/switch: This connects your computer to the network and its function is to send and receive signals along the network between the devices (server and your computer) connected to it by broadcasting the data to all the devices/computers.

COMPUTER STUDIES
Paper 1
Oct./Nov.2016
2½ hours

SECTION A (20 marks)

1 The word processing feature used to address a document to many recipients at ago is……

A. mail box
B. Word wrap
C. Mailing list
D. Mail merge

2. The arrangement of elements in a presentation application such as title and subtitle text, pictures,
tables is called slide....

A. layout
B. show
C. design
D. scheme

3. The high speed memory unit between the Central Processing Unit (CPU) and main memory is.....

A. CMOS
B. RAM

C. Buffer
D. Cache
4. A utility that tests the malfunctions of computer hardware and software is .....program
A. diagnostic
B. Scan disk
C. sorting
D. defragmentation
5. Machine an Assembly languages are referred to as
A.third generation languages
B.Low level languages
C.System languages
D.High level languages
6. A User interface in Computers is an interaction between
A. a printer and a computer
B. A person and a computer
C. Programs in the Computer
D. A digital camera and a computer
7. The process of finding errors and fixing them within a program code is called.....
A,compiling
B.executing
C.
D.
8.In the period of mechanical computers, machines were characterized by…….....
A.semi-conductor diodes
B.Transistors and vaccum tubes
C.Gears and wheels
D.Intergrated circuits

9. Computers that measure continuous variables are categorized as…….. ....
A. intergrated
B. hybrid
C. digital
D. analog
10. Which of the following is not a function of spreadsheet applications?
A. Accounting
B. Data management
C. Spell checking
D. What-lf analysis
11. In databases, data can be organized in terms of …….
A. characters
B. records
C. modules
D. pages
12 A person who writes lines of codes of computer software is a…….....
A. programmer
B. System analyst
C. Technician
D. System administrator
13. A desktop computer is classified as a……..
A. super computer
B. Mainframe
C. Micro computer
D. Mini computer
14 When installing an operating system you can partition a new hard disk during
A. debugging

B. formatting
C. defragging
D. booting

15. Match each device to its proper function

Device	**Function**
(i) Monitor	a. entering data
(ii) Mouse	b. performing operations
(iii) Compact disk	c. present results
(iv) System unit	d. save data

A. i - a, ii -b, iii - c, iv - d
B. i - c, ii-a, iii - d, iv -b
C. i - b, ii-a, iii - d, iv - c
D. i - d, ii -c, iii - d, iv - a

16 One of the image file formats used when working with pictures in Web designing is…….
A. JPEG
B. HTML
C. PP3
D. MP3

17. A tool that takes a user to another Web page is a ……..
A. protocol
B. hyperlink
C. tag
D. bus

18. A set of rules and regulations that govern communication between a client and server computer is
A. topology
B. network
C. protocol

D. baud

19. A modem is a……..

A. word processor
B. Web browser
C. Storage device
D. Communication device

20. The following are basic principles of maintaining information security in organizations except...

A. flexibility
B. confidentiality
C. availability
D. integrity

Section B (60 marks)

21. (a) Name the early computing device developed by Blaise Pascal.

Arithmetic machine

(b) State a reason for each of the following characteristics of the first generation computers

(i) They were very expensive

➢ due to the-need to constantly replace the vacuum tubes that blew out

➢ due to the need for huge coolers to disperse off the a lot of heat generated.

(ii) They generated a lot of heat

✓ due to the nature o! vacuum tubes hence need of a lot of power (electricity)

(c) Give any three characteristic features of a modern computer

- It has a fast **speed** Operation of several million Instructions per second (MIPS)
- Computers are **accurate** capable of performing calculations to the extent of 24 decimal accuracy. They are capable of detecting and correcting any mistakes made.
- Computers are capable of **storing large volumes of data** and information for purposes of future Data processing or Information outputting
- Computers are capable of **retrieving** of information perfectly
- Computers have **diligence** they have the ability to perform the same fast "over and over" for a long time without getting bored.
- Computers are **versatile**. They are capable of doing very many tasks competently.
- They can carry out a number of different tasks at the same time and in different ways
- Computers have **artificial intelligence**. They can respond to requests given to them and provide solutions due to their programmability.
- Computers work **automatically**, they do not need any supervision in order to perform programmed routines.

(d) What is Virtual Reality?

This is a condition in which a person becomes psychologically submerged in an artificial setting generated by a computer system, eg. In computer aided learning, Computer games,

Interactive mappings such as Google maps,3D movies ,0nline tourism, Online advertisement.

22. (a) What is a peripheral device in the area of computers?

This is an external device which can be attached to the system unit to add on functionalities of computers

(b) Give four categories of computer hardware devices

- Input devices
- Output devices
- Storage devices
- Processing devices
- Communication devices

(c) Outline four situations under which a computer user can carry out warm booting

- When the computer slows down
- After installing new software programs
- After Installing new hardware devices
- When a computer freezes
- In case one wants to recover from errors

23.(a) Study the spreadsheet below and answer questions (a) - (c)

F9	f_x		
A	B	C	D
Students' Name	Gender	Total score	Comme
Clare	F	230	
Moses	M	34	
Isma	M	320	

Madina	F	210	
Trica	F	255	
Solomon	M	199	
Katrina	F	365	

ERROR !!!!

(a) Identify spreadsheet features to perform the tasks below:

(i) Arrange data in ascending order basing on gender

Sort

(ii) Display only female students in the table

Filter

(b) Write an IF function statement that will return a comment REPEAT for students whose total scores are below 200 and PROMOTION for those whose total scores are above or equal to 200

=IF(C2>=200, "PROMOTION,IF(C2<200, "REPEA T"))

(c) State a function that would return the highest total score

MAXIMUM

(d) (i) Define a Database Management System

This is a collection of programs that enables users to create and maintain the database

(ii) Name one activity where database management system can be used

Create forms for input and display of data in a graphical user interlace

- filter out(query) records meeting given criteria
- Creation of summary reports

(e) Give the database objects that are specifically used for:

(i) Entering data in the table

Form

(ii) Retrieving particular information from a database

Query

24. (a) Define the following terms in relation to computer communication and give an example in each case:

(i) Simplex

This is a communication that occurs in only one direction.

Example

- Radio and Television broadcast,
- Communication between a mouse and computer

(ii) Full duplex

This is a transmission technique that allows communication in both directions simultaneously.

Example

Land-line and Cell telephone networks

(b) Computers can be used in business transactions over the internet. Give three advantages and one disadvantage of using this method.

Advantages:

- Information resources: the internet offers research information to business men and clients on possibilities of markets and suitability of products with the help of Numerous websites and search engines
- Faster communication: it offers a speedy communication to business clients when using services such as Email, Chat.
- Online shopping is possible using numerous websites such as eBay
- Online services: one can access online services such as pay for taxes, bills, etc
- E-money services are possible using credit card facilities
- Online adverts are possible using personal business website, or using various applications (apps) suitable for mobile computing.

Dis Advantages:

- Theft of personal Information: when using an (Insecure connection, there is a high possibility that your personal details such credit card number, bank account info, etc. may be accessed by Con artists
- Virus threat: Computers on the internet are very prone to virus attacks, which may lead to crushing of hard disk or business data loss

➢ Spamming: Unwanted/Unsolicited E-mails in bulk are very frustrating as they make the internet connection very slow and unreliable

➢ Social disconnect: when many business people are engulfed in a virtual world of
socialization, this may lead to drifting apart of business partners and clients

25. (a) Distinguish between Wrap text and Word wrap features as used in word processor

Wrap text is a feature that enables all content within a cell of table to be visible by displaying it'.' on multiple lines while ***Word wrap*** is a feature that enables text or a sentence to automatically continue to the next line after reaching the margin.

(b) Give three Advantages of using word processors over a manual type writer

➢ It enables revising or editing without retyping, eg changing words, paragraphs, etc.

➢ It easier to make many copies (duplicate) from an original copy without retyping unlike a typewriter where there's only an original copy produced at a time

➢ Manipulation of text such as copying or moving (cutting) of words and paragraphs from' one pi ace to another is possible.

➢ There's increased productivity. It enables quick online editing and hence fast completion of work,

➢ There's mass production of work such as mail merging to address many people.

➢ It enables special print effects such as italics, bold, underline, color, font size.

➢ There's faster proof reading. Word processor has tools that check for spellings, grammar and meaning of words to speed up the process.

- The auto correct feature may be used to correct typing or spelling errors as you type. When you make a mistake, the autocorrect rectifies out right.
- It has an auto save feature that enables you to recover some lost work in case the
computer battery runs down or incase of power failure.

(c) Explain why sound may be added to a presentation

This enhances the presentation especially on any comments you want to make to
go along with the slide

(d) What is a slide master in a presentation

This is a parent slide (plain white slide) that contains text and objects that will appear on all
other slides such as headers & footers, slide number, date & time, etc.

(e) Give an example of a presentation program

- Microsoft power point
- Open office.org impress
- Lotus freelance
- Corel presentation
- Harvard graphics
- K-Presenter
- Magic point
- Apple keynote

26. (a) Define a Utility program

This is system software designed to help analyze, configure, optimize or maintain a computer. They are computer programs

designed for general support of the processing process of the computer.

(b) List any three examples of Utility programs

- Anti-virus
- Backup software
- Disk cleaners
- Disk compression
- Disk defragmenters
- Disk Partitions
- Disk space analyzers
- Cryptographic utilities
- File compression utility
- Screen savers
- Diagnostic utility
- Sort-merge utility
- Memory festers
- Registry cleaner
- Uninstaller utility

(c) Outline two advantages of off-shelf software

- Off-the-shelf software are relatively cheap. The cost of development can be spread over a large number of users.
- Off-the-shelf Software offers a wide range of capabilities, performs several functions.
- They are Easily available from most computer vendors
- This software is thoroughly tested so there are no serious problems or bugs.
- Off-shelf has-a lot of user support that is: books, user guides, online help and discussion forums on the Internet.
- Off-shelf is easy to learn and use (user friendly)
- Off-shelf can be customized to the user's needs.
- Off - shelf programs are easy to install.

(d) Give three considerations of developing a computer program

✓ the editor environment where you will create the program source code,

✓ the compilation environment where your source program will be converted into a machine code, the execution environment where your program will be run

Section C (20 marks)

27. (a) Describe how a laboratory technician would help a user when the following error messages appear:

(i) Non-System disk when the computer is switched on

Remove the disk and start the computer again

Start the computer with a good disk and install the required files missing

Turn off the computer and boot the computer with a virus free disk or carry out a virus scan on the disk

(ii) Low disk space and Computer is slow

The computer user should carry out a disk clean, by deleting un necessary files to free up space.

The user should also do a file compression using utilities such as WinZip compression. This reduces or compresses the size of a file to enable less usage of disk space and improve system performance.

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

The computer user should log in with the correct password in order lobe authenticated to access to file.

The user should seek for administrative rights in order to access particular files.

(iv) Out of memory

The computer user should install s higher capacity RAM

The user should close some of the programs running in order to enable the RAM to load files.

(v) Device not ready

The computer user should wait for the system to full accept the disk

The user should install a less faulty (good)disk

(b) Adania bought a new laptop computer and installed a number of software. She uses the lap top to get access to the internet. After a few months, her laptop started to slow down and sometimes it would hung.

Explain five reasons why her laptop started to become slow.

➢ Virus infection

The computer would have been infected with viruses due to the continuous usage with infected external storage devices, or downloading infected file attachments, accessing pirated software, etc.

➢ The computer should have run out of hard disk space which leads it to become slow and bad system performance

➢ The computer user could be using outdated system software such as operating system,,

antivirus which needs to be updated urgently.

➢ Accumulation of fragments of files on the disk which slows down system performance, thus a need to carry out a disk defragmentation.

➢ Existing RAM may be unable to load large sized files which the computer user may need to access. Thus this leads to slow operation of the laptop.

28. (a) As a student who has been working with computers, explain at least five observable symptoms you can base on to conclude that a computer has malware.

- The computer runs slower than usual. This happens as the virus is spreading to other files in the system or is taking over system resources.
- Disks or disk drives and other system resources are inaccessible, this is because the virus has changed the settings on a device to make it unusable
- There is a double extension on an attachment that you recently opened, such as a .jpg, vbs, gif, or .exe. extension.
- An antivirus program is disabled for no reason. Additionally, the antivirus program cannot be restarted.
- An antivirus program cannot be installed on the computer, or the antivirus program will not run.
- New icons appear on the desktop that you did not put there, or the icons are not associated with any recently installed programs.
- A program disappears from the computer even though you did not intentionally uninstall it
- Program sizes change from the installed versions. This occurs because the virus is attaching itself to these programs on your disk.
- Your web browser, word processing application or other software begins to exhibit unusual operating characteristics. Screens or menus may change.
- The computer stops responding, or it locks up frequently.
- The computer restarts on its own.
- Applications on the computer do not work correctly.
- You see unusual or strange error messages.
- Strange sounds or music plays from the speakers unexpectedly.
- It shuts down unexpectedly or crashes frequently.
- It experiences memory problems or runs out of disc space.

- Unusual files or directories appear on your system.

(b) Describe five measures you would put in place to safe guard computers against malware.

- Installing updated antivirus software, this helps the antivirus to detect new virus definitions that may come up
- Scanning all external storage devices for possibilities of virus infections, before using these devices with other computers.
- Avoid downloading content from the internet without being sure of their safety
- Sensitizing computer users on the damage caused by viruses.
- Install a fire wall at the network gateway to filter incoming traffic on the network.
- Protect your computer by limiting other people to use it with external storage devices.

29. (a) Describe five benefits of networking computers in a school

- To allow users to share resources such as printers, modems, storage devices application programs. In a networked environment, authorized users may access data and information stored on other computers on the network. The capability of providing access to data and information on shared storage devices is an important feature of many networks.
- To enable sharing of software, such databases, network
- To enable remote communication between devices. Using a network, people can communicate efficiently and easily via e-mail, instant messaging, chartrooms, telephone, video telephone calls and video conferencing.
- To enable data communication, i.e. transmission of electronic content over a given medium.

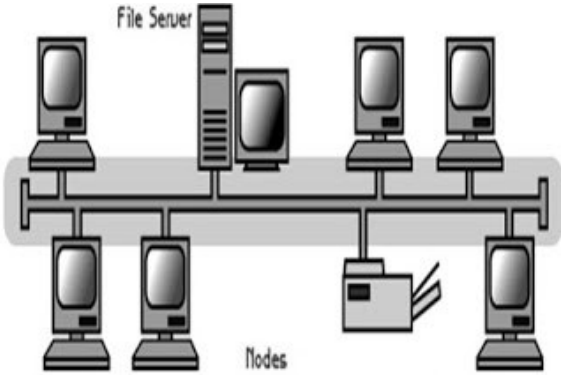
➢ To ensure security of data by putting in place administrative controls over the network.
➢ To share databases

(b) Explain any three types of network topologies which can be used

Topology is the physical and logical arrangement of a local srea network. The types of physical topologies include

Bus network topology

This consists of a main, central cable known as the backbone with a terminator at each end of it, and all devices on the network are connected to the main/central cable.



Advantages of Bus topology

➢ It is less expensive than a star topology due to less footage of cabling, only needs one main cable/ and no network hubs
➢ It is good for smaller networks not requiring higher speeds
➢ It has a high transmission speed if coaxial cable is used.
➢ It is easy to add new workstations on the net work.
➢ Multiple servers can be used.
➢ Easy to connect a computer or peripheral to a bus.

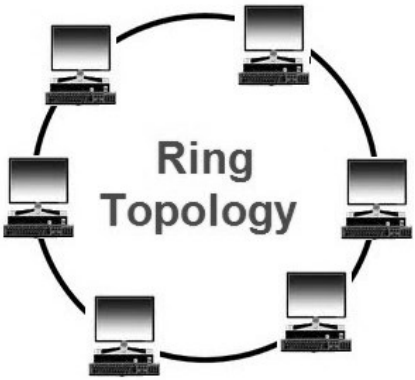
- Requires less cable length than a star topology.

Disadvantages of Bus network

- It is Limited in size and speed
- The Entire network shuts down if there is a break in the main cable.
- Difficult to troubleshoot,
- It is difficult to identify the problem if the entire network shuts down
- It is less secure since all data is transmitted down one main cable
- Transmission slows down as more work stations are added
- If the main cable fails, then all workstations are affected.

Ring topology

This is a topology. where ail devices on the network are connected to one another in the shape of 3 closed loop, so that each device is connected directly to two other devices, one on either side of if to form a ring Each data packet is sent around the ring until it reaches its final destination.



Advantages of ring topology

- It is a Very orderly network where every device has access to the token and the opportunity to transmit
- It Performs better than a star topology under heavy network load
- Can create much larger network using Token Ring
- It is Cheaper to install than star network as there is only one cable between each workstation.
- High speed can be achieved as each workstation can boast the signal.

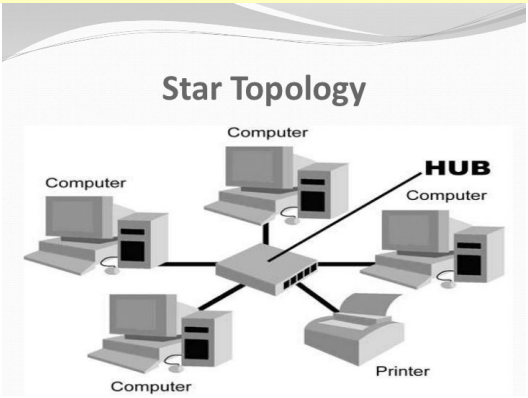
Disadvantages of a Ring Topology

- One malfunctioning workstation or bad port in the central hub can create problems for the entire network
- Moves, additions and changes of devices affects the entire network.
- Network adapter cards are expensive.
- It is much slower than an Ethernet network under normal load
- Less secure than star network as data pass through a number of workstations before reaching its destination. '

Star topology

A star topology is designed with each device/node (file server, workstations, and peripherals) connected directly to a central network hub or switch.

Data on the star network passes through the hub or switch before continuing to its destination. The hub or switch manages and controls all functions of the network. It also acts as a repeater for the data flow.



Advantages of Star topology

➢ It is suited for large networks
➢ It is easy to expand the network without negatively affecting it.
➢ If one cable or station fails, the entire network is not affected
➢ It is easy to install, maintain and troubleshoot because the problem usually isolates itself. That is, its easy to detect faults and to remove parts.
➢ Cabling types can be mixed to maximize efficiency.
➢ High speed transmission is possible since each station has a dedicated cable.
➢ Greater security as connection from one station to server is unique.
➢ No disruptions to the network when connecting or removing devices.

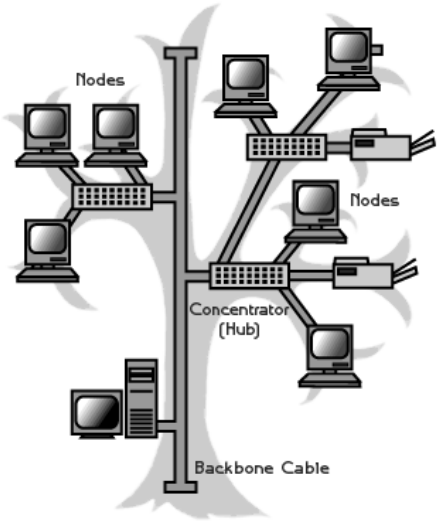
Disadvantages of Star topology

➢ A breakdown of the switch/Hub becomes a single point of network failure
➢ Its expensive to set up due to increased cabling costs and the need for a switch or hub.
➢ Mass of cables around in case of a large network.

➢ If the cable fails the workstation cannot receive data via any other route.
➢ The server can get congested as all communication must pass through it
➢ Requires more cable length than a bus topology.
➢ If the hub or switch fails, nodes attached are disabled.

Tree topology

A tree topology combines characteristics of bus and star topologies; It consists of groups of star-configured workstations connected to a bus backbone cable. Tree topologies allow for the expansion of an existing network, and enable organizations to configure a network to meet their needs.



Advantages of Tree topology

➢ Allows for Point-to-point wiring for individual segments. Supported by (compatible with) several hardware and software.

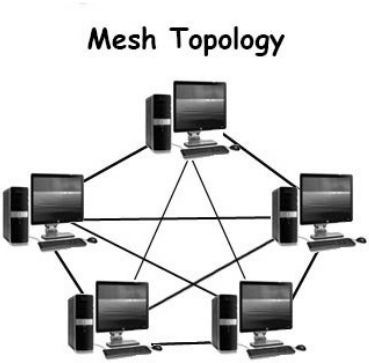
Disadvantages Tree topology

➢ Overall length of each segment is limited by the type of cabling used.

➢ If the backbone line breaks, the entire segment goes clown.
➢ More difficult to configure and wire than other topologies,

Mesh topology

This is a network where each device has its own connections to all other devices on the network provides each device with a point-to-point connection to every other device in the network.



Advantages of mesh topology

➢ If there are other possible routes through the network, the damage of one or several cables or computers may not have vital impact except the involved computers.
➢ Mesh networks provide redundancy, in the event of a link failure, meshed networks enable data to be routed through any other site connected to the network.

Dis advantages of mesh topology

➢ It is the most expensive and difficult to maintain topology because each device has a point-to-point connection to every other device.
➢ The damage of at least one cable or device may damage the network seriously inhere are only few cables in the network.

COMPUTER STUDIES
Paper 1
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SECTION A (20 marks)

1. Which one of the following is **Not** a storage device?
A. flash disk
B. Memory card
C. Hard disk
D. Motherboard
2. A good password contains……
A. very few characters
B. Text and numbers
C. Common words or names
D. Only numbers

3. A light pen facility can **best** help computer users to……

A. draw pictures on the computer screen

B. Play computer games

C. Convert hardcopy text into bit-mapped image forms

D. Mark examinations on a computer

4. In document production , a font is……

A. data of the same field

B. Characters of the same face and shape

C. Data of the same record

D. Characters in the same document and file

5. The error message that will appear in a cell when a formula used contains a function which is recognized in spreadsheet is

A. ####

B. #VALUE!

C. #NAME?

D. #REF!

6. The process of checking whether essential computer peripherals are attached and operational called

A. configuration

B. CMOS

C. POST

D. defragmentation

7. Which of the sets below contains characteristics of advancement in computer technology

A. smaller in size, faster and more expensive

B.bigger in size, faster and cheaper

C,Bigger in size, more expensive and faster

D, Smaller in size, faster and cheaper

8. Computer maintenance, upgrade and configuration utilities are accessed through. ……..
A. Control panel
B.Network manager
C.System registry
D, My computer
9. The lowest level language of a computer is…….
A. BASIC
B.FORTRAN
C.MACHINE
D. COBOL
10. The abbreviation MIS in system analysis stands for……..
A. Memory Interface System
B.Management Information System
C.Memory Interface Structure
D. Management Information Support
11. The ……will enable users to optimize personal computers
A. Utility routines
B.Operating systems
C.Device drivers
D. Programming languages
12. The service needed to transfer or upload files on the internet service provider is called……..
A. HTTP
B.FTP
C.IP
D. HTML
13. The first computing device used to perform arithmetic calculations

A. weaving loom
B. Slide rule
C. Napier's bones
D. Abacus
14. Software systems are development……
A. antivirus tools
B. Operating systems
C. Programming languages
D. Word processing
15. Identify the correct rule for HTML tags from the following

A. Do not use the < and > symbols
B. Symbols and tag text should be spaced
C. there should always be an opening an closing tag
D. all tags must start with equal signs(=)

16. A row in a database table that contains information about a given person, event, product or asset
is a
A. Field
B. Record
C. Key
D. Mask
17. The important way to protect data and other computer network resources is referred to as……
A. decoding
B. backup
C. zipping
D. encryption
18. The views that enable a user to rearrange the order of slides are:
1. outline view

2. slide sorter view
3. Notes page view
4. slide show view
5. normal view

A. 1,2,3
B. 2,3,4
C. 3,4,5
D. 1,2,5

19. A computer that is not connected to a network is called a……

A. standalone
B.Client
C.server
D. Terminal

20. Publishing a web page means:

A. creating files and placing them on a webserver
B.Creating an advert and placing it in a newspaper
C.Web content is printed directly from the source document
D. The source documents are merged to webserver contents

Section B (60 marks)

21. (a) What is meant by Computer Evolution?

This refers to the historical developments through which computer technology has existed right from the start to the current times

(b) Use the terms below to complete the statements (i) to (iv)

- Data processing
- Information
- Computer
- Data
- Harddisk
- Information technology

i) An electronic device that accepts data input, processes it, outputs the desired information and stores the result is

Computer

(ii) The conversion of data into information is

Data processing

(iii) Raw facts or figures that are of little meaning until they are sorted in a useful way are **called……..**

data..

(iv) Processed data that has meaning and is useful to the human being is……

Information

(c) Give two examples of how computers are used in each of the following sectors

(i) Health

- Information management such as
- Create databases to contain patients' medical history.for accounting and billing of patients word processors are used to produce print outs of health forms of patients as well as letters to communicate to other doctors and hospitals.
- Databases can hold pharmaceutical information which assists medical practitioners with calculations of dosage rates, repeat doses and behavior of certain drugs to various body tissues when taken.

- Pharmacists in hospitals and drug shops need to maintain records of drugs at hand and those dispensed to the public and also provide returns to government.
- Drug manufacturing companies and medical researchers use computer technology to analyze data from experiments to assist them in developing of new drugs.
- Medical tests and operations
- Computer assisted equipment such as x-ray machines, ultra sound scanner's, magnetic imaging(MRI) can enable medical tests, diagnosis and cure of many diseases. Doctors can also use computer aided lasers for operation of patients body tissues such as in (cutting, heating, vaporizing)
    - Advanced hospitals use medical Robots to carry out very precise operations. E.g. they can be programmed to carry out an entire operation, monitor after effects using computer imaging and diagnosis. Note that these Robots can be controlled by a medical expert who is not on site.
    - Ward management
    - The staff in a hospital ward can use computer technology in accessing patients information such as symptoms, results of laboratory tests and patients history.
    - Computer technology can also be used to prepare ward budgets, duty rosters. of staff and notices/letters.
    - Computer assisted gadgets can be used to monitor patients in intensive care units and also assist the functioning of life saver machines.
    - Hospital administration

- With the existence of a network of computers in hospitals, its now easy .to access online assistance to medical workers concerning many aspects, of
- Hospital management: The management can ensure security of patients, staff and property by use of computer aided gadgets such as sensors, CCTV cameras.
- Medical research and worker training
- Computers are used at all levels of medical research such as research into diseases, drug production, biological research, etc.
- Computer aided calculations of measurements assists with the design of repairs to and construction of body pads and plans for rehabilitation, long term replacements. E.g. in the area of dental care there has been a research into accurate replacement parts of the teeth.
- Computer aided instruction can be used in the initial training of nurses and doctors; computer simulations and imaging allows them to learn about anatomy and to recreate and practice operations without the physical presence of a patient.

(ii) Security

- Computer technology is highly used in **fighting crime**. Security operatives such as the police can use **digital forensic (investigations involving crime scenes** monitoring and analysis).
- Criminals can also be tracked by use of computer aided gadgets such as security cameras (such as Street CCTV cameras) and other computer based operated systems.
- The Police, CIDs are able to use the Biometric device technology (such as fingers print, iris,

signature/handwriting verification) in identifying criminals. Figure prints are, automatically analyzed by use of computer technology. / Security agencies such as the police can store data and information using database software about crimes. This can later be use for future references on criminals.

- Security agencies can use computer technology such as the phone, internet tapping technique to track down crime.
- ICTs are highly used by the army. The integration of computer based technology and defence is used to modernize the military such as gathering electronic news, detecting & tracking of targets, use of radar systems, warning systems ad military lasers.
- Computers are used in helping the military find out where all their assets are (Situational Awareness) and in Communications/Battle Management Systems.
- Computers are used in the logistic and ordering functions of getting equipment to and around the battlefield.
- Computers are used in tanks and planes and ships to target enemy forces, help run the platform and more recently to help diagnose any problems with the platforms.
- Computers technology helps in design and testing of new systems.
- Computer aided technology is essential in training and educating the military forces.
- Skills and vital details regarding military tactics, training that can a physical risk can now be done safely using computer technology. the Air force can train their pilots in flight simulators long before they actually get in the Cockpit

- Computer technology is essential in communications by the security and military agencies. During the military training communication skills are the key to learning how to work together those responsible for communication during security or military operations can get hands on training in a real world setting.
- Computer technology can also be used in surveillance of mobile assets such as cars,' mobile phones. The surveillance is possible through communication of sensor gadgets at both the surveillance center and gadget being tracked.

22. (a) Define the term computer hardware

These are the physical parts of the computer which can be seen, touched and picked up.
Computer hardware refers to the physical pieces of equipment that make up a computer system.

(b) Fill in the appropriate category of the hardware devices from the given list: input, output, storage, communication

Hardware Device	Category
(i) Compact disk	storage
(ii) MODEM	communication
(iii) Projector	output
(iv) Barcode reader	input

(c) Explain the functions of the computer components below

(i) Power supply

- This provides the necessary electrical power to make the PC operate
- The power supply converts alternating current (AC) power from the wall-outlet into direct current (DC) power, which is a lower voltage. DC power is required for all the internal components of the computer

(ii) ROM chip

ROM chips stores basic instructions for booting the computer and loading the operating system.

23. (a) (i) What is a wild card in database management systems?

Wild cards are symbols used as place holders when you want to return a result of a give query

(ii) Give one importance of a wild card in query criterion .

Wild cards are used as place holders for other characters when you don't know exactly what you are looking form, but know part of a value or you want to find values that start/end with a letter or match a certain pattern

(iii) Name one example of frequently used wild cards

- *
- ?
- #
- !

(b) (i) State one characteristic of a label when placed in a spreadsheet cell ***(02 marks)***

- for descriptive text such of sheet titles,
- for descriptive text of column headings.

(ii) Outline three uses of electronic spreadsheets

- They are used for accounting work say in generating cashbooks; ledger books, trial. balances, balance sheets, sales and purchases day books.
- They provide an invaluable tool for collecting and calculating data of all types such as electricity bills, water bills, telephone bills, etc.
- They are used in schools for creating class registers and mark sheeting of students marks.
- They are used for examination processing e.g. in calculating totals, averages, exam analysis and grading of students.
- They are used for budget planning. E.g. weekly, monthly, quarterly and yearly budgets
- They are used in inventory management such as in recording quantity stocks, sales,balances, etc.
- They are used for statistical analysis e.g. in computing averages, modes, medians, standard deviation, etc.
- They are used by financial authorities in preparation and management of employee's pay rolls.
- They are used for project planning and forecasting eg. Viability of a particular project, etc.
- They can be used for creating personal lists e.g. Shopping lists, stored items, etc.

24. (a) (i) State any two ways a systems administrator can prevent access to some information

on the internet

- By using content filtering software to block some sites from being accessed by internet users
- By caution to internet users on the forbidden sites
- By keenly monitoring (in form of surveillance & use audit trail) on the use of internet facility by users

(ii) Give three reasons for preventing access to such information

- To prevent effects of access to undesirable content such as porn which have aftereffects on the social being of individuals
- Access to heavy content which consumes a higher band width, thus slowing the connectivity
- To prevent diversion of mind and concentration of internet users from the real

cause of use of internet

(b) (i) Explain the term data transmission media in computer networks

This is a communication channel or path over which data signals are sent from source to destination. This can either be physical or wireless.

(ii) List three examples of Computer data transmission media

- Twisted pair cables
- Coaxial cables
- Optical fibers
- Sateilite(broadcasting) communication
- Bluetooth

- WI-Fi(Wireless Fidelity)
- Infrared
- Microwaves

25. (a) Give the importance of the following features in word processing.

(i) Footnote

A **foot note** is a comment or additional text found at the bottom of a page that helps to explain or refer or comment on a phrase or word in a document.

(ii) toggle case

This is a formatting feature which will change letters of a word in lower case to uppercase in a word and vice versa

(b) Distinguish between Cut and copy editing features of a word processor

Copy allows the duplication of text or data to get two or more copies leaving the original behind **while**

Cut allows the complete transfer of data or text from one position to another without leaving the original behind

(c) What is presentation software?

This is software application used to enhance content and communication process with the use of visual aids such as slide shows.

(d) Outline two area where presentation software may be used

- E-Learning and instructional design: publish instructions, presentations, lessons and teaching material «

➢ Tutorials and instructions: publish tutorials, commented screenshots and explain
illustrated instructions
➢ Business presentations: presentations, product descriptions, price lists and other
marketing materials
➢ Events and project documentation: picture shows from events, project information,,
meetings documentation, and personal photo shows.

26. (a) Explain the function of each of the following programming concepts

(i) Termination

This tells the compiler where an instruction ends in the program code. The terminator is a semi
colon (;) at the end of each line.

(ii) Variable declaration

This enables the determination of data type of the variables to be used in a program code,
either (float, double, int, long or char)

(b) State the use of a compiler to a programmer

A **compiler** translates an entire high level program into machine code, the language computer can understand.

(c) Explain the term device drivers as applied to computers

A device driver is a program that controls a particular type of device that is attached to a computer by converting the more general input/output instructions of the operating system to messages that the device type can understand.

(d) Give any two forms of interfaces that can be provided by an operating system to the computer user

- Graphical User interface
- Command line interface

Section C (20 marks)

27. (a) Assuming that an organization is faced with a challenge of choosing between a peer to peer network and a server based network, outline five factors to consider before a final decisions is made

- Cost of installation. An organization has to choose a network basing on cost effectiveness and within their budget
- Number of computers and other hardware devices to be connected
- The communication medium to be used such as cabling system or wireless technology
- The architecture of the buildings to be used
- The number of users to access the network. A bigger number of users requires a large network
- The bandwidth to be used on the network. This will determine the speed of the network
- Expansion of the network, the future expansion of a network will depend on the topology used i.e. a star topology easily enables future expansion
- The technicalities involved in setting the network
- The safety provisions of the network.

(b) Explain any five limitations to full internet use in Uganda ***(10 marks)***

- High costs of data bundles(charges) may limit people
- The existence of high computer illiteracy levels. Thus those who are computer illiterate may fear the use of certain ICT gadgets such as smart phones, tablets, and PCs.
- High costs incurred in buying ICT hardware communication devices such as smart phones,
- personal computers.
- Lack of infrastructure such as Masts, optical fiber back born to support the reception of internet signals
- Quality of ISPs. Some ISPs provide slow connections because of outdated technology
- Age of Computer (clone)set used: computers with outdated technology(old processors) slow down
- The connection speed hence limiting the use of internet .some ISPs provided lower connection speeds hence limiting interne use.
- Distance of broadcasting service (masts), when the mast is far from internet users may lead to poor network signals thus render the proper use of the internet
- Weather, prevailing bad weather conditions may affect internet speed .

28. (a) Describe five factors ahead teacher should consider before buying computers for a school ***(05 marks)***

- **Purpose of use /User needs**

What will the computers be used for:- whether for office activities or for stud y purposes

- **Software requirements**

Which kind of software will be required to be used with the computers? Depending on
what the computers are to be used for, the head teacher must know that computers for
network will require certain software

➢ **Warranty given and its scope**

The computers to be bought should have a specified period for complains to be raised to
the sales personnel and possible solutions, sought

➢ **Hard disk capacity**

The amount of data and information to be stored will be useful in deciding on the type of
computer to purchase. One may require a computer with a higher hard disk capacity

➢ **Processor speed and type**

The speed of the computer's processor will determine the productivity at the work place.
computer with faster processing speed will easy the activities at school

➢ State of the computer, whether new or clone .depending on the available finances, the
head teacher will decide on what to buy

➢ Technology used to make the monitor and its size

The head teacher may choose to either use CRT or LCD

(b) Explain five ways in which computer hardware should be taken care of ***(10 marks)***

➢ Computers should regularly be serviced, including peripheral devices

➢ Switch off the computer in proper order i. e. by shutting down from the start button
then the UPS and finally socket.

➢ Avoid switching off the computer abruptly as this may leading to corrupting of Hiss.
and sometimes crushing of hard disk
➢ Avoid foods or drinks near computer hardware as these may attract flies and dirt
➢ Do not service computers or open system casing when power cables are still
connected as this may lead to electric shock
➢ Servicing should probably be done by technicians to avoid mistakes
➢ Use stabilizers and UPS to protect computers from power surge
➢ Ensuring proper electrical wiring to ensure effects that would be brought about by short circuits
➢ Restricting access and use of computer hardware especially computer use
➢ **Use of Computer covers**: To prevent dust from reaching the hardware components
of the computer system and also to protect the computers from moisture and dust when not in use
➢ Avoid exposure of computers to direct sunlight and heat

29. (a) Describe five conditions that can lead to a computer system re-boot

➢ When the computer slows down
➢ After installing new software programs
➢ After Installing new hardware devices
➢ When a computer freezes (hanged)
➢ In case one wants to recover from errors
➢ The computer had failed to boot fully
➢ After un installing software programs
➢ After uninstalling hardware

Uganda National Examinations Board
Uganda Certificate of Education
840/1 2018
COMPUTER STUDIES
Paper 1
Time Allowed: 2 hours 15 minutes
SECTION A: (20 MARKS)

1. The idea of networking of computers was introduced in the …….. generation of computers.
   A. first.
   B.second.
   C.third.
   D. fourth.

2. Section breaks in Word processing are used to divide the document into ….
   A. subtopics.
   B.columns within a table.
   C.paragraphs.
   D. parts between pages.

3. The purpose of air conditioning in a computer laboratory is…….

A. upgrading computer software.
B.regulating power consumption.
C.regulating temperature.
D. upgrading computer hardware.

4. A web browser is a …….

A. program that enables you to view and explore information on the web.
B.page that appears each time you start your web.
C.collection of programs maintained by the web master.
D. page which has links to other web pages.

5. The following are advantages of a LAN except……..

A. it is relatively inexpensive and easy to install.
B.all computers on the LAN can be connected to the Internet at the same time.
C.each computer can access resources from other computers on the LAN.
D. All computers on the LAN can share peripherals over the Internet.

6. A diagnostic process that a computer runs to determine if the hardware is working properly when a computer is switched on is……..

A. power-on self-test.
B.down loading.
C.debugging.
D. trouble shooting.

7. The computer specification that would determine the quality of a picture in a computer system is the …….

A. screen size.
B.screen resolution.
C.hard disk capacity.
D. RAM capacity.

8. Which of the following is not a unit of data storage?

A. Field.
B.Bit.
C.Byte.
D. Character.

9. One of the functions of a database management software is to…….

A. enhance presentation.
B.download attachments.
C.update records.
D. mail merge.

10.The following are classifications of computers by "purpose".

A. Mainframe and microcomputers.
B.Special and general computers.
C.Digital and analog.
D. Minicomputers and microcomputers.

11.The importance of a master slide in presentation software is to…..

A. insert items that appear on every slide.
B.display multiple slides on a screen.
C.relate data in slides.

D. filter data in slides.

12.The following are types of system software except…….
A. operating systems.
B.expert systems.
C.utility routines.
D. programming languages.

13.An artificial environment that is created with a software and presented to the user is …….
A. interactive mode.
B.virtual Reality.
C.advanced Robotics.
D. real mode.

14.One physical measure of preventing computer systems from computer crime is…..
A. setting passwords.
B.activating firewalls.
C.data encryption.
D. burglar proofing.

15.The format for describing the location of resources over the Internet is…….
A. ISP.
B.DNS.
C.WEB.
D. URL.

16.The HTML tags used in bolding the word “example” are…..
A. <b> example <b>.

B.< / > example .
C. example .
D. example .

17.The part of the Central Processing Unit that performs logic operations and calculations is the ...
A. ALU.
B.Control unit.
C.ROM.
D. Logic unit.

18.The command that displays files and directories on the command line is …..
A. C: \ > cd.
B.C: \ > dir.
C.C: \ > cls.
D. C: \ > md.

19.Which one of the following is an example of a translator in programming?
A. Compressor.
B.Debugger.
C.Defragmenter.
D. Compiler.

20.In spreadsheet software, the file you create and save is called a ……..
A. Document.
B.Worksheet.
C.Workbook.
D. Spreadsheet.

SECTION B: (60 MARKS)
Answer all questions in this section.
All answers must be written in the spaces provided.

21. (a) What is a computer?
(02 marks)

……
……
……
……
……..…

(b) Name the keyboard buttons used to perform the functions shown below (03 marks)

(i) When the key is pressed, it takes the cursor to the next line.

……
……..

(ii) Pressing the key changes the input mode to uppercase

……
……..

(iii) When pressed it deletes a character to the left of the cursor.

……
……..

(c) Write down two contributions of computers in the area of teaching and learning. (02 marks)

(i) ……..

(ii) ……..

(d) Give one task done by each of the following computer professionals (03 marks)

(i) Computer Programmer.

……..

(ii) Computer Technician.

……..

(iii) Database Administrator.

……..

22. (a) (i) Explain the function of an input device. (02 marks)

……

(ii) Give one example of an:

Input device

……. (01 mark)

Output device…… (01 mark)

(b) Define a device driver in a computer (02 marks)

……..

……..

……..

(c) Name any three system requirements considered before installing windows Operating system on a computer (03 marks)

(i) ……..

(ii) ……..

(iii) ……..

(d) Give one reason why a computer may be restarted
(01 mark)

……
……..

……
……..

23. (a) What is a formula in a spreadsheet?
(02 marks)

……
……..

……
……..

……
……..

(b) Describe how names on a list of members can be sorted in ascending order in a spreadsheet.
(02 marks)

……
……..

……
……..

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……..

……
……..

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……..

……
……..

(c) The manager of Muvule supermarket uses a database to store data about groceries they sell as reflected in the part of the database below. Use it to answer questions that follow.
(02 marks)

BARCODE	PRODUCER	GROCERY	NUMBER IN STOCK
0049179000794	Herbot	Frozen carrots	412
0027200190653	Ago Vet	Chicken	725
0010029000016	Uwanga	Margarine	578
0014559021017	Magaga	Garlic powder	306
00104790012133	Muyawo	Baking powder	613

(i) How many records are there in this part of the database?
(01 mark)

……
……

(ii) How many fields are there in this part of the database? (01 mark)

……

(iii) If the records in the database are sorted in descending order of NUMBER IN STOCK, what will be the barcode of the first record in the database after it has been sorted? (02 marks)

……

(iv) Give the name of the field that contains numeric data. (01 mark)

……

(v) Explain why the manager assigned BARCODE as the primary key. (01 mark)

……

……

……

24. (a) Describe the following terms:
(02 marks)
(i) Repeaters.

……..

……..

……..

……..

(ii) Gateway.
(02 marks)

……..

……..

……..

……..

(b) State any two types of data transmission media.
(02 marks)

(i) ……

(ii)……

(c) List any four major design considerations of a website. (04 marks)

(i) ……

……

(ii) ……

……

(iii) ……

……

(iv) ……

……

25. (a) Describe a footnote in a Word processing document.
(02 marks)

……..

……..

……..

……..

……..

……..

(b) Name the two types of page orientation.
(02 marks)

(i)

……

(ii)

……

(c) State what is meant by the action cut and paste while working on the

computer.
(01 mark)

……..

……..

……..

……..

(d) Give any two presentation software.
(02 marks)
(i)

……

(ii)

……

(e) (i) Differentiate between slide transition and slide animation as applied to
presentation software.
(02 marks)

……..

……..

……
……..

(ii) Outline the main purpose of the slide sorter view.
(01 mark)

26. (a) (i) Explain the term Application software.
(02 marks)

……
……
……
……
……..…

(ii) Outline two examples of application software.
(02 marks)

……
……
……..…

(iii) Outline two factors to consider before buying an application software. (02 marks)

- ……
……
……
- ……..……
……..…
……
……

(b) Define the following terms in relation to computer programming.

(i) Source Code.
(02 marks)

……
……
……
……

(ii) Keyword.
(02 marks)

……
……
……
……

SECTION C: (20 MARKS)
Answer only one question from this section.

27.A user wishes to buy a laptop computer. Describe five specifications to consider
when buying the laptop.
(20 marks)

28. Assuming you have secured a contract of networking computers in a computer
laboratory, sketch and explain four possible network layouts you can present to
the contractor for approval.
(20 marks)

29.(a) Explain three reasons why a flowchart would be used instead of a pseudo
code to solve a problem.
(06 marks)

(b) A school uses a simple comupterised system to manage students' results.
The school administers three examinations namely; beginning of term (BOT),
middle of term (MOT) and end of term (EOT). The systems administrator
has set the system to get the total of the three examinations and find the average
which is used to promote the students to the next class. If the average mark is
greater than 60, the student is promoted. If the average mark is from 50 to 60,
the student repeats. If the average is below 50 the student is dismissed. Write
a suitable algorithm that will manage the students' results.
(14 marks)

Uganda National Examinations Board
Uganda Certificate of Education
840/1
COMPUTER STUDIES
Paper 1
2019
Time Allowed: 2 hours 15 minutes
SECTION A: (20 MARKS)

1. Raw facts in computing is a description of
A. information.
B. text.
C. data.
D. numbers.

2. In a spreadsheet software, a cell is

A. a box that stores data.
B. an intersection of a row and a column.
C. another name for spreadsheet windows.
D. a collection of different rows.

3. Which of the following pairs consists of system software only?

A. Operating Systems and Programming languages.
B.Presentations and Spreadsheets.

C. Word Processors and Databases.
D. Operating systems and Presentations.

4. The combination of buttons that can be used to restart the computer is

A. CTRL + ALT + ENTER.
B. CTRL + ALT + DEL.
C. CTRL + SHIFT + DEL.
D. CTRL + SHIFT + ENTER.

5. The error message “No operating system found” during system start-up could be a result of

A. inadequate RAM.
B. a problem with the VGA.
C. a full hard disk.
D. a disconnected hard disk.

6. A computer program that takes one or more object codes and assembles them into a single executable program is

A. a bug.
B. a compiler.
C. a linker.
D. an interpreter.

7. Which of the following is a set of input devices only?

A. Mouse, scanner and printer.
B. Projector, printer and monitor.

C.Speakers, printer and scanner.
D. Keyboard, scanner and joystick.

8. In web publishing, the procedure of developing a website is

(i)Planning.
(ii) Designing.
(iii) Deploying.
(iv) Creating.

A. (i), (iii), (ii) and (iv).
B.(iv), (i), (iii) and (ii).
C.(ii), (iv), (iii) and (i).
D. (i), (ii), (iv) and (iii).

9. Computer X has devices; RAM, Network card and Video cards.
Computer Y has devices; Video card, RAM and hard disk.
Computer Z has devices; Video Card, Hard disk and Network card.
Which computers are more likely to be connected to the Internet?
A. X and Z.
B.Y and Z.
C.X and Y.
D. X only.

10. A command line of C: prompt that will display the directories and files found on the hard disk can be written as

A. C: \> rd.
B.C: \> dir.

C.C: \> rem
D. C: \> rmdir.

11. Which of the following is a feature of a Word Processor Software?
A. Cell.
B. Animation.
C. Drop Cap.
D. Record.

12. The Quarry Criteria that can be used to find the students who are less than or equal to 14 years old is

A. < = 14.
B. > = 14.
C. < or = 14.
D. > or = 14.

13. The option used to view all slides on a screen is

A. notes pages view.
B. outline view.
C. slide show.
D. slide sorter view.

14. Which of the following categories of computers is arranged in order of size from the largest to smallest?

A. Mainframe computers, Super computers, Personal computers, Minicomputers.
B. Super computers, Mainframe computers, Minicomputers, Personal computers.
C. Minicomputers, Mainframe computers, Super computers, Personal computers.
D. Super computers, Personal computers, Minicomputers, Mainframe computers.

15. The device that provides a computer with power temporarily when the main supply is off is?

A. Power Supply Unit.
B. Power Stabilizer.
C. Uninterruptible Power Supply.
D. Power Surge Unit.

16. In HTML, which code will be used to display the heading “Information Communication Technology” on a web page?

A. < h1 > Information Communication Technology < h1 >.
B. < h1 > Information Communication Technology < / h1 >.
C. </ h1 > Information Communication Technology < h1 >.
D. < h1 > Information Communication Technology < h1/ >.

17. The rules governing data exchange on a network are called

A. protocols.

B. settings.
C. standards.
D. transmissions.

18. A professional who is responsible for maintenance, configuration and computer system operations in a computer is a
A. Systems Administrator.
B. System Analyst.
C. Database Administrator.
D. Software Engineer.

19. Which security measure is used to control data access in a computer?
A. Burglar proofing.
B. Antivirus.
C. Password.
D. CCTV camera.

20. The safety precautions observed in a computer laboratory are:
(i)Avoid carrying foods and beverages to the computer laboratory.
(ii)Always follow the correct procedure for starting and shutting down the computers.
(iii)Sit on a stool while using a computer.
(iv) Don't use radiation filters screens on bright monitors.
A. (i) and (iii).
B. (ii) and (iv).
C. (iii) and (iv).
D. (i) and (ii).

SECTION B: (60 MARKS)

Answer all questions in this section.
All answers must be written in the spaces provided.

21. (a) State any two characteristics of the second generation computers. (02 marks)

(i)……
……

(ii)……
……

(b) List any two areas in which computers can be used in business (02 marks)

(i)……
……
……
……

(c) Explain the meaning of the following characteristics of computers:

(i) Diligence (02 marks)

……
……
……

(ii) Automation (02 marks)

……..……
……..
……..……
……..
……..……

(iii) Artificial Intelligence (02 marks)

……..……
……..……
……..……
……..

22. (a) (i) What is an executable file?
(01 mark)

……..……
……..
……..……
……..
……..……
……..
……..……
……..

(ii) Give two examples of file extensions of executable files
(02 marks)

……..……..
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… (iii) A computer system indicates that an executable file of a Particular program has been corrupted. Give two likely causes for the corrupted file. (02 marks)

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(b) A student has access to the tabulated storage media below:

HDD	Flash Disk	DVD-R
4GB	1024 MB	4.7 GB

Choose the most appropriate medium for carrying out the following tasks, if one medium is used for only one task: (03 marks)

(i) To send a 1 GB music file to a friend in a neighbouring school.

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(ii) To transfer a 2048 MB file from one standalone computer to another in a

school laboratory.

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(iii) To store 3072MB video clip.

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23. (a) Explain the following as used in spreadsheets.

(i) Cell range. (02 marks)

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(ii) Absolute cell reference. (02 marks)

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(iii) Relative cell reference. (02 marks)

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(b) Define a field in database. (01 mark)

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(c) Study the database table below and answer questions that follow:

Patient Id	Name	D.o.B	Gender	Phone	Doctor Id	Doctor
134	Jeff	4-Jul-1993	Male	7876453	01	Dr. Hyde
178	David	8-Feb-1987	Male	8635467	02	Dr. Jekyll
198	Lisa	18-Dec-1979	Female	7498735	01	Dr. Hyde
210	Frank	29-Apr-1983	Male	7943521	01	Dr. Hyde
258	Rachel	8-Feb-1987	Female	8367242	02	Dr. Jekyll

(i) How many fields are shown in the table? (01 mark)

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(ii) Identify two fields suitable for a primary key in the table (02 marks)

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2) .....
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24. (a) What is a URL? (02 marks)

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(b) Explain a tag as used in web- designing. (02 marks)

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(c) (i) Define a Search Engine. (02 marks)

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(ii) Give an example of a search engine
(01 mark)

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(d) Outline three advantages of a server based LAN over a peer-to-peer.
(03 marks)

1)……
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2)……
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3)
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25. (a) Give three uses of a Word Processor. (03 marks)

1)……
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2)……
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3)
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(b) Explain the importance of mail merge in a Word Processor.

(02 marks)

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(c) Give two advantages of an electronic presentation over a manual presentation. (02 marks)

1)……
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2)……
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(d) Name the presentation feature that would be applied to: (03 marks)

(i) Objects and texts to determine their movement during a slide show.

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(ii) An object or a word to connect to another slide.

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(iii) Slides to determine the visual movement as one slide changes to another during a slide show.

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26. (a) Identify the software needed for the tasks below: (04 marks)

(i) System booting

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(ii) Removing malware

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(iii) Sending an electronic document

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(iv) Developing a computer software

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(b) Explain the term multitasking as applied to computers (02 marks)

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(c) Give one function for each of the following software development tools:

(i) Debugger (02 marks)

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(ii) Flow chart tool (02 marks)

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SECTION C: (20 MARKS)
Answer only one question from this section.

27. As part of class assessment, your teacher has requested the senior four students to design any practical project. You have decided to design school report cards.

Illustrate the steps you would take to design a computerized program for making these reports. (20 marks)

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28. The following devices; an uninterruptible Power supply, PC blower, a CCTV camera and a modem have been purchased by

the ICT department. As a computer student you have been tasked to;

(a) give reasons for the purchase of each of the devices. (10 marks)

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(b) suggest any five physical measures that may safeguard the purchased devices. (10 marks)

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29. (a) While working in an application, the computer freezes. Explain any five ways in which you would manage the computer freeze. (10 marks)

1)……
2)……
3)……
4)……
5) ……

(b) A friend seeks to make his computer performance faster. Suggest any five ways you would increase the operational

speed. (10 marks)

1)……

2)……

3)……

4)……

5)……

END