DRAFT OF MARKING SCHEME FOR COMPUTER STUDIES 840/1 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 spacing. 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.

(02 marks)

(ii) Changing Case

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.) **Sentence 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,

(02 marks)

(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

(02 marks)

(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.

(02 marks)

(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.

(02 marks)

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.

(Any 02 x 02 marks)

(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).

(01 mark)

(ii) Byte

- **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.

(01 mark)

(c) State **two** categories of computer memory giving an example in each case:

Primary memory
Memory unit that stores the program that is being executed holds date data that the program is using and storage of OS programs that manage the computer.

(01 mark)

Examples;

- RAM - Dynamic RAM, Rambus DRAM, Synchronous DRAM, Static RAM
- Registers
- ROM

(Any 01 x 01=01 mark)

Secondary memory
Relatively long-term and non-volatile storage outside the CPU and primary storage.

(01 mark)

Examples;

- HARD DISC
- Floppy disks
- CD-ROM
- Magnetic tapes
- Digital video disks

- Etc.

(Any 01 x 01=01 mark)

(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

(Any 02 x 01 = 2 marks)

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).

(02 marks)

(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.

(Any 04 x 01 = 4 marks)

(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

(03x 01 = 03 marks)

(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**.

(Any 01x02=02 marks)

(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.

(01 mark)

	Computer	Examples
1	Digital	Digital watch
2	Digital	Digital calculator

(Any 01 x 01 = 01 mark for analog)

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.

(01 mark for analog)

Examples of analog computers;

1	analog	Voltmeter
2	analog	Speedometer

(Any 01 x 01 = 01 mark for analog)

(c) What electronic technology characterized each of the generation of computers?

	Generation	**Technology**
1	First	Vacuum tubes, valves, diodes
2	Second	Transistor
3	Third	Integrated circuits

4	Fourth	Very large integrated circuits

(Any 04 x 1 = 04 marks)

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. **(01 mark)**

Examples of off –the-shelf software:

- MS-Office suite.
- Computer games e.g. chess, cross word puzzle, etc.
- Education software e.g. Encarta,

(Any 01 x 1 = 1mark)

Custom software is tailor-made software, which is developed at a user's request to perform specific functions.

(01 mark)

(iii) Example of Custom software:

- Locally made school management systems(SMS),
- Inventory management systems.
- Payroll management systems
- Library management system

(Any 01 x 1 = 1mark)

(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.

(02 marks)

(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 and 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 specified 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.

(Any 04 x 1 = 04 marks)

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**.

(02 marks)

(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.

(Any 02 x 1 = 2 marks)

(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).

(01 mark)

(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.

(01 mark)

(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

(Any 04 x 1 = 4 marks)

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

ii) Software

iii) Data/information

iv) Procedures

v) User

vi) Communication

Hardware devices are the physical and tangible of a computer.
Hardware comprises the electronic and the electromechanical parts of the computer.

(01 mark)

Examples;

Monitor, keyboard, mouse, system unit. Etc

(Any 01 x 1 = 01 mark)

Hardware – is important because it carries out the

- in putting,
- processing,
- storage,
- out putting
- Communications of the system.

(Any 02 x 1 = 02 marks)

- **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.

(Any 01 x 1 mark)

Examples

System software –

- 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

(Any 01 x 1 = 01 mark)

- These are a series of programs (instructions) that tell the computer what and how to work.
- System software manages the 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)

(Any 02 x 1 = 02 marks)

- **Data** consists of raw facts and figures that are processed into information.
- **Data** consists consist of basic facts and figures that are processed into information.

(Any 01 x 1 = 01 mark)

Data
letters (e.g., a, b, c, ...)
words and symbols
numbers
examination scores
musical notes
Names e.g. Moses

(Any 01 x 1 = 1 mark)

- **Data** is the foundation for information.

(02 marks)

- **Information** is summarized data or otherwise manipulated (processed) data.
- Is manipulated/ processed data.

(01 mark)

Examples

Information
words (e.g., apple, boy, cat)
a report, a letter, an essay
a mathematical formula
comments, grades

a piece of music, a song

(Any 01 x 1 = 1 mark)

Importance

- These are the basis of decision making.
- Planning
- Analysis
- Forecast
- Discovering the past, present and future.

(Any 02 x 1 = 02 marks)

User – the most important component 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:

(Any 01 x 1 = 1 mark)

Examples of users.

- Computer programmer
- System analyst
- System administrator
- Database administrator
- Network administrator.

(Any 01 x 1 = 1 mark)

Importance of users –

- Data entry
- manipulating the computer system

- programming the computer
- administering the network
- analyzing the computer system

(Any 02 x 1 = 02 marks)

- **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.

(Any 01 x 1 = 1 mark)

Examples are:
- Modems
- Cable
- Computer
- fax modems
- routers
- gateways

(Any 01 x 1 = 1 mark)

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

(Any 02 x 1 = 02 marks)

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 rooms.

- Secure online data storage.
- Internet based education 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 directly to another, such as in an online **auction. Business-to-business (B2B)** e-commerce consists of businesses providing goods and services to other businesses.
- Promotion of medicine and health through online medication and health care.
- Promotion of banking and finance through online banking.
- Widened business investment opportunities and job opportunities through; IPS's, internet service kiosks (café), online jobs, etc.
- Etc

(Any 05 x 2 = 10 marks)

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.
- Addiction where people waste a lot of time.
- Loss of man-hours as employees waste company time on unproductive surfing.
- Etc

(Any 05 x 2 = 10 marks)

29. **Ways in which computers can be used in <u>business</u> and <u>industry</u> in Uganda include;**

<u>Computers in Business:</u>

- Document production and processing.
- Data storage.
- Data and information communication amongst departments and outsiders using <u>E-mail</u> and <u>chat rooms</u>.
- 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

<u>Computers use for industry specifically:</u>

- 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. for 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.

(Any 10 x 2 = 20 marks)