**MARKING GUIDE FOR COMPUTER STUDIES PAPER 1 2019**

**SECTION A**

**Attempt** ***all*** questions in this section

1. Which one of the following tools would be the best for cleaning the outer surface of a monitor?
2. Dust blower
3. **Form cleaner**
4. Pliers
5. Screw driver.
6. At what stage of the following stages would flow chats be used in the programming process?
7. Testing stage
8. **Design stage**
9. Program coding stage.
10. Implementation stage.
11. Computer errors reporting to the user is a preserved function of…………………………….
12. Application software platforms
13. **Operating system software**
14. System utilities
15. Network administrator.
16. Which one of the following memory units is usually provided in system peripheral units?
17. **Buffer memory**
18. Cache memory
19. BIOS
20. Virtual memory.
21. Which one of the following roles is the main function of a software interface?
22. Storage of information
23. **Enable the user to interact well with the software**
24. Warning the user in cases of danger
25. Outputting data
26. The computer system maintains it configurations like date and time right even when the system is switched off from the main power source because of its?
27. CMOS
28. RAM
29. Automation
30. **CMOS battery**
31. A single structure representing a set of related data in a database table is referred to as…..
32. Field
33. Report
34. **Record**
35. Query
36. The standard protocol for Internet related electronic mails is…………….
37. TCP/IP
38. OSI
39. **SMTP**
40. NOS
41. Which one of the following data transmission media would offer a user the least data through-put?
42. **Twisted pair**
43. Optical fiber
44. Coaxial
45. Microwave
46. An active cell of a spreadsheet can easily be identified by?
47. **Name box**
48. Formulae bar
49. Worksheet tab
50. Worksheet charts
51. Which one of the following document processors is a word processor engine?
52. Note pad
53. Word wrap
54. **WordPad**
55. Lotus
56. The power-on self-test (***POST***) is run by…
57. **BIOS.**
58. Operating system
59. Log-on
60. Boot strap loader.
61. ……………………is a web page that allows users to make adjustments in the content previously uploaded.
62. Blog
63. **Wiki**
64. Aggregator
65. News group
66. Which one of the following statements is true about data values when they appear in a spreadsheet cell?
67. They are dressed in inverted quotation marks in logical functions
68. They usually left aligned by default
69. They are usually followed by a comma
70. **They are usually right aligned in a cell by default**
71. Which one of the following is not a navigation tool of slides during a presentation
72. Hyperlink
73. Action button
74. Remote sensor
75. **Slide master.**
76. Which one of the following word processor proof reading tools would enable a user to quickly replace some words in a document with other words?
77. Autocorrect
78. Autocomplete
79. Spelling and grammar checker
80. **Thesaurus.**
81. Which one of the following measures would ensure that changes made on the parents table are reflected on the child table?
82. Entity integrity
83. **Referential integrity**
84. Validity integrity
85. Primary key
86. When computers are classified as digital or analog it means that they are being classified basing on…….
87. Physical size
88. Specialty
89. **Process**
90. Processor power
91. In the mechanical era computers used ………………………………….. for their internal operations.
92. Integrated circuits
93. Diodes
94. **Vacuum tubes**
95. Gears
96. Which one of the following utilities would one use to prepare a storage media for data storage?
97. **Formatting**
98. Debugging
99. Anti-virus
100. Backup

**SECTION B**

Attempt ***all*** questions in this section

**21. (a) (i) state *one* difference between a micro-computer and a mini-computer.**

* Micro-computers offer limited processor power than mini-computers
* Micro-computers like hand held computers are more portable than mini-computers
* Micro-computers are generally cheaper than mini-computers

**(Any 1x2 = 2 Marks)**

**(ii) List two characteristics of personal computers.**

* Generally offer the computing functions by themselves
* They are generally the cheapest
* Offer limited processor power
* They are more portable than any other category of computers

**(Any 2x1 = 2 Marks)**

**(b) Give two examples of Hybrid Computers**

* Hycomp 250
* HYDAC 2400
* VLSI hybrid computer

Can also give;

* Computing devices used in petrol pump
* Hybrid computing machines used in scientific applications and control of industrial processes.
* Hybrid computers used in hospitals to measure the heartbeat of the patient.

**(Any 2x1 = 2 Marks)**

**(c) State four challenges facing computer related jobs in Uganda**

* Limited computer technical skills
* High costs of computer tools
* Limited market for computers and their services
* High levels of ignorance and illiteracy
* Lack of adequate computer laws
* High levels of informal sectors
* Expensive energy sources.
* High costs internet services
* Limited market for computer professionals

**(Any 4x1 = 4 Marks)**

1. **(a) State three classifications of computer hardware**

* Input hardware
* Processing hardware
* Storage hardware
* Output hardware

**(Any 3x1 = 3 Marks)**

**(b) Give one difference between solid state and optical storage media**

* Optical storage media usually spins or rotates during the data reading and writing process while solid state media doesnt
* Optical storage media uses laser light technology for data reading and writing while solid state is optical-magneto. **(Any 1x2 = 2 Marks)**

**(c) State *two* circumstances that can lead to re-installation of the operating system.**

* When the hard disk has been formatted
* When the operating system blows
* When the current O.S is no longer effective in coordinating system activities. For instance when some basic components are no longer detected or system takes too long to respond to O.S based instructions
* After some thorough virus scan  **(Any 2x1 = 2 Marks)**

**(d) Give three situations that can necessitate one to warm boot a computer**

* When the operating system has frozen or hanged
* When an application program hangs or refuses to run
* When changing from one operating system (like windows 7) to another (like Linux), in cases of computers with double or multiple O.Ss.
* When the operating system fails to detect or interact with some peripheral devices like keyboard, mouse, or modem.
* After installation of some software or programs.
* After installation of some device or peripheral drivers.
* When cleaning a malware (like a virus, Worm or Trojan)
* After configuring or setting up a network
* Terminating a suspected data tap or hack **(Any 3x1 = 3 Marks)**

1. **(a) Name *two* situations where electronic spreadsheet application software can be used in a shop.**

* They can be used to automate sales or product lists by the trader.
* Can be used in the preparation of payrolls for shop attendants.
* Can also be used in the preparation of budget report by a trader.
* Used in compilation and analysis of sales and purchases data over time.
* Used to record sales, produce invoices and compile statements.

**(Any 2x1 = 2 Marks)**

**(b) Give two situations that can necessitate one to use equal signs in an electronic spreadsheet cell.**

* When initiating a formula or calculation
* When initiating a function **(2x1 = 2 Marks)**

**(c) Give *two* tools used for ensuring data integrity in electronic databases applications.**

* Data types
* Field properties like Caption, validation rule, input mask and field size.
* Primary keys

**(Any 2x1 = 2 Marks)**

**(d) Explain the following electronic database concepts.**

**(i) Field properties**

* Characteristics or features that define a single item of data within a [database](https://www.computerhope.com/jargon/d/database.htm) like size, format, etc.
* They are properties that describe field contents and how the data in it should be displayed**. (2 Marks)**

(ii) Data types

**It is a feature that determines major field qualities, like;**

* Which formats can be used with the field.
* The maximum size of a field value.
* How the field can be used in expressions.
* Whether the field can be indexed. **(2 Marks)**

**24. (a) With the help of an example briefly explain the concept of noise in electronic data transmission.**

**Explanation**

Any unwanted form of energy that tries to interfere with proper reproduction and reception of wanted signals.

**OR**

Random undesirable electrical energy that enters into a communication system and interferes with the transmitted message. **(1 Mark)**

**Example:**

* Atmospheric noise or static caused by lightning discharges in thunderstorms
* Short noise
* Transit time noise
* Partition noise that occurs where current is to be divided between two or more paths.  **(Any 1x1 = 1 Mark)**

**(b) Briefly describe the meaning of the following terms as used in electronic data communication**

**(i) Wi-Fi**

* Refers to any network environment that allows devices to exchange and share data and other resources wirelessly conforming to the standards of the Institute of Electrical and Electronics Engineers (IEEE) —802.11. (2 Marks)

**(ii) Bluetooth technology**

* It is a technology that allows *short-range* radio waves transmission of data between *paired Bluetooth devices*. Device pairing establishes a relationship for the devices to communicate.

**(2 Marks)**

**(c ) State two features of an electronic web page**

* Hyperlinks
* Navigation buttons
* Banner **(Any 2x1 = 2 Marks)**

**(d ) Explain the following tags as used in web designing.**

**(i ) The <title> tag**

* It is used in all HTML documents to define the title of the document. **(1 Mark)**

**( ii ) The <body> tag**

* It is an element that contains the entire contents of a webpage. **(1 Mark)**

**25 (a) (ii) Briefly describe the concept of document referencing as applied in electronic word processors.**

* They are tools used to navigate the various sections of a document like foot notes, end notes, tables of contents, citations, bibliography, table of figures, etc.  **(2 Marks)**

**(ii) Give two examples of document referencing features found in electronic word processors.**

* Foot notes
* End notes
* Tables of contents
* Citations
* Bibliography
* **Table of figures, etc.** **(Any 2x1 = 2 Marks)**

**(b) Name two electronic presentation features used to navigate slides during a presentation**

* Hyperlinks
* Action buttons (2 **Marks)**

**(c) Give *two* publications that can be created using DTP software**

* Webpage
* Labels‎
* Resume‎
* Invitations‎
* Calendars‎
* Brochure, through templates ‎ (Any 2x1 = 2 Marks)

**(d) State two end product documents of a mail merge.**

* Main document or primary file
* Mailing list or secondary file or data source
* Merged document (Any 2x1 = 2 **Marks)**

**26. (a) With the help of an *example* *define* a computer utility software. *(02 marks)***

These are system programs used to maintain or services other programs and devices

(b) **State *two* characteristics of computer software.**

* They are electronic instructions
* It is artificial intelligence
* It determines what a computer can be used for
* Different softwares perform different functions
* All software has cost or consideration whether direct or indirect **(Any 2x1 = 02 marks)**

1. **State two categories of programming language translators**

* Interpreters
* Compilers
* Assemblers (Any 2x1 = 02 marks)

1. **Re-arrange the following programming stages in their ascending order.**

**Coding & code review/documentation/Planning/analysis and design.**

* Planning
* Analysis and design
* Coding & code review
* Documentation *(02 marks for only correct order)*

1. **Write a pseudocode for a program that would be used to solve equation: E = MC2.**  **(02 marks)**

START

Enter values from M to C

E = M \* C \* C

Display E

STOP

**SECTION C**

**(**Attempt ***only one*** Question from this section)

**27**. (a) Assuming that you have been provided with the following tools; anti-virus utility tools kit, five CCTv cameras, cable seals, Alarm alert devices, device engraving tool, burglar proof set, ten automatic security lights, G7 model Firewalls kit, and a security guard.

**Demonstrate how you would use the above mentioned tools to enhance computer systems security.**

* **Anti-virus utility tools kit:**

Used to search, detect, prevent and remove system malwares like viruses, worms and Trojans.

* **Five CCTv cameras:**

Used to take video proceedings of surroundings for security purposes

* **Cable seals:**

Used to attach data and electrical cables together to avoid unnecessary removal and movements.

* **Alarm alert devices:**

Used to make alarm notifications or alerts once activated for security purposes

* **Device engraving tool:**

Used to make special marks of identity characters onto hardware devices for attachment or belonging.

* **Burglar proof set:**

Used to keeping door-ways, vents and windows re-enforced with metallic or wooden barriers to inconvenience burglars.

* **Ten automatic security lights:**

Used to put off wrong doers by keeping places of computer installations lit in case they attack.

* **G7 model Firewalls kit:**

A combination of hardware and software used to filter information coming through a network. It can be for digital content, devices or moral protection of system users.

* **Security guard:**

This can be in form of live objects used to keep security or scare off would be burglars and thieves. Can be humans or specialized dogs

**(Any 9x1 = 09 marks)**

**(b) State *five* challenges facing computer software in your school.**

* Piracy
* Uninstallation by users
* Virus attacks
* Interference with source code
* Cracking
* Loss of product keys
* Theft of software product CDs (Any 5x1 = 05 marks)

**(c) Using examples, describe any *six* advanced technologies which show the growth of information technology in your country. *(06 marks)***

* Wireless connectivity
* Virtual reality in games
* Simulated learning experiments
* Use of CCTV for security with night vision facilities
* Computerized parking of cars
* Use of GPS in locating places
* Robots in factories to managing processes and maintaining quality
* Robot in homes
* Test tube babies
* Video conferencing

**Etc Any 6X01 = 06 marks**

1. **(a) Define a flow chart as used in programming. *(02 marks)***

A **Flowchart** is a diagrammatic or pictorial representation of a program’s algorithm. It is a chart that demonstrates the logical sequence of events that must be performed to solve a problem.

**(b) Explain the types of flow charts. *(04 marks)***

**System flowchart.**

A *System flowchart* is a graphical model that illustrates each basic step of a data processing system.

It illustrates (in summary) the sequence of events in a system, showing the department or function responsible for each event.

**Program flowchart**.

This is a diagram that describes, in sequence, all the operations required to process data in a computer program.

A *program flowchart* graphically represents the types of instructions contained in a computer program as well as their sequence & logic.

(c)In an Olympics track event, medals are awarded only to the first three athletes as follows:

* *Position 1: Gold medal*
* *Position 2: Silver medal*
* *Position 3: Bronze medal*

Write pseudocode, flowchart and using C or VB language write a Code for the above program. ***(14 marks)***

**Pseudocode**

**Start**

**Enter** Position

**IF** Position = 1 **THEN**

Medal = ‚Gold‛

**ELSE**

**IF** Position = 2 **THEN**

Medal = ‚Silver‛

**ELSE**

**IF** Position = 3 **THEN**

Medal = ‚Bronze‛

**ELSE**

Medal = ‚Nil‛

ENDIF

ENDIF

ENDIF

**End**

**VB Code**

**Private** Sub CommandButton1\_Click()

Dim Position As Integer

Position = Val(InputBox("Enter Position"))

If Position = 1 Then

MsgBox("Gold")

Else

If Position = 2 Then

MsgBox("Silver")

Else

If Position = 3 Then

MsgBox("Bronze")

Else

MsgBox("Nil")

End If

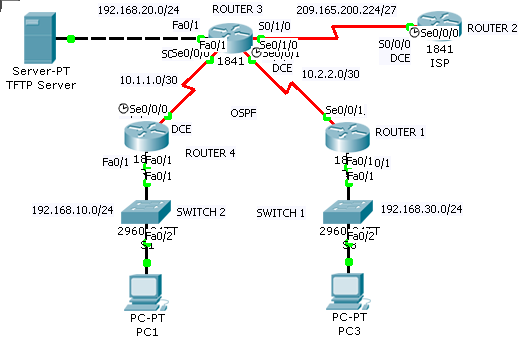
End If

End If

End Sub

End Class

1. (a) An organization needs to open businesses such that **ROUTER 1** is located at Mbale town, **ROUTER 2** at Jinja Town, **ROUTER 3** at Kampala City and ROUTER 4 at Mbarara town for easy manageability. Study the network topology in Figure 1 and answer the following questions:



1. State the number(s) of Wide Area Network in this topology. ***(01 mark)***

***1(One) WAN (Connecting all the devices in the topology)***

1. How many Local Area Network(s) is/are presented in the topology? ***(01 mark)***

***3(Three) LANS (Including the Server - Router 3 LAN)***

1. How many network devices are in this topology? ***(01 mark)***

***6(Six) Network devices (excluding the PCs)***

1. How many end users devices are in this network? ***(01 mark)***

***3(Three) End users (including the server user)***

1. What type of physical topology is exhibited in this network? ***(01 mark)***

***Tree, Extended Star Topology or hierarchy toplogy.***

(b) You are given a task of assembling a computer system. Use the following procedure to arrange your **five** steps chronologically. ***(05 marks)***

* Connect the external cables to the ports on the back of the computer.
* Connect all internal cables to the appropriate computer components.
* Attach the power supply to the case.
* Install the RAM, CPU, Thermal compound and Heat sink on the motherboard and screw the motherboard on the system case.
* Connect the adapter cards, internal drives such as HDD, CR-RW/DVD and FDD drives in external bays.

The five steps chronologically

i. Connect the external cables to the ports on the back of the computer.

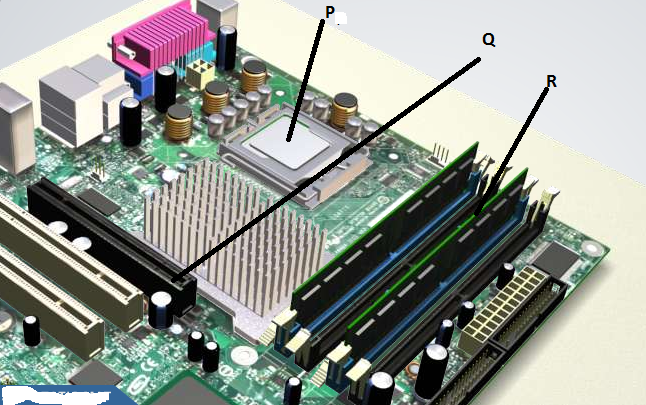
ii. Connect all internal cables to the appropriate computer components.

iii. Attach the power supply to the case.

iv. Install the RAM, CPU, Thermal compound and Heat sink on the motherboard and screw the motherboard on the system case.

v. Connect the adapter cards, internal drives such as HDD, CR-RW/DVD and FDD drives in external bays.

(b) Study the following diagram of components in a computer system unit and answer the questions that follow:



1. Give the ICT name for the parts labeled, P, Q and R. ***(03 marks)***

**P Central Processing Unit (CPU**)

**Q Expansion Slot** (PCI, AGP, PCIe)

**R Random Access Memory**

1. Study and state the main function of parts labeled, P and R. ***(02 marks)***

**P**. ***Is responsible in processing, manipulating of data to information.*** .

**R**. ***Is to enhance the capabilities and functionalities of a computer system***

1. A **USB port** can connect up to 127 different peripherals together with a single connector. State where USB port type B are used. ***(03 marks)***

* ***On printer interface,***
* ***Scanner,***
* ***Digital camera,***
* ***Photocopying machines.***

***End***