THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

MAY – AUGUST 2021

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER AND INFORMATION SCIENCE

REGULAR PROGRAMME

DIT 010: INTRODUCTION TO HARDWARE MAINTENANCE

Date: AUGUST 2021	Duration: 2 Hours
INSTRUCTIONS: 1. SECTION A [Answer 1- Compulsory]	
2. SECTION B [Answer 2 Questions]	

SECTION A

Question 1 [30 Marks]

(a) Define the following terms.

(i)	Hardware	**(1 Mark)**
(ii)	Software	**(1 Mark)**
(iii)	Computer	**(1 Mark)**
(iv)	Operating system	**(1 Mark)**
(v)	Application software	**(1 Mark)**
		[5 Marks]

(b) Differentiate between the following terms.
   (i) Batch operating system and Time sharing system (2 Marks)
   (ii) Network operating system and Distributed operating system (2 Marks)

[4 Marks]

(c) Write down a number of the item in Column B which best matches each of the descriptions in Column A.

Column A	Column B

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(i)	Access area on disk reserved for printer files	1. Bootstrap loader
(ii)	Additional storage area in the CPU where data and instructions are saved temporarily	2. Buffer 3. Control panel 4. NOVELL
(iii)	Crystal quartz oscillator which controls the rate at which data is transferred from the disk to the central processing unit of the computer	5. Data clock 6. Database 7. Spreadsheet 8. Multiprocessing
(iv)	Option to change the screensaver in Windows 95	9. WINZIP 10. Register
(v)	Part of a disk drive	11. Spooler 12. Track
(vi)	Software that loads the operating system into memory	13. Windows Explorer
(vii)	Running more than one process at a time	
(viii)	Software used to compress the files on two disks so that they will fit onto one disk	
(ix)	Structured collection of data which may be manipulated to select and sort desired items of	
(x)	Temporary storage in primary memory used for input and output data	

[10 marks]

(d) You have been called upon to advice your local Cyber Café' on "preventive maintenance". Identify five (5) tasks that you would encourage them to perform while conducting preventive maintenance.

[5 Marks]

(e) Account for the importance of conduction regular preventive maintenance on both hardware and software of your computer systems.

[6 Marks]

SECTION B

Question 2   [20 Marks]

(a) Mutemi, the University Senior Technician has requested for the purchase of numerous hardware components to be installed in machines in the university computer labs. Explain three (3) probable reasons for installing new hardware components in existing machines.

[6 Marks]

(b) Upon the university re-opening after a long closure due to government guidelines on containment of Covid-19, the technician recommended upgrading of computers in the labs. Explain five (5) reasons why an upgrade may be needed.

[**10 Marks**]

(c) Preventive maintenance and troubleshooting go hand in hand though they are different. Differentiate the two concepts.

[4 Marks]

Question 3   [20 Marks]

(a) By use a block diagram, describe the functional components of a computer system.

[5 Marks]

(b) Computer memory is one of the main targets when doing system upgrade. Account for the reasons this is the case.

[5 Marks]

(c) An advert in a local daily had the following information as specifications of a certain machine.
   − Intel Pentium CPU 4.0 GHz
   − 2 GB RAM
   − 320 GB Hard Disk Drive
   − 52x DVD drive
   − Ergonomically designed optical mouse
   − 104 Soft key Palm QWERTY Keyboard
   − PS/2, USB, Parallel & Serial Ports
   − 56 K Fax/modem

   From the above information identify:-
   (i)   The speed of the PC
   (ii)   Memory Capacity
   (iii)   Disk Capacity
   (iv)   Processor type

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(v)   Two input devices

[5 Marks]

(d) Mrs. Oloo wants to know if QWERTY is a well-known brand / manufacturer of keyboards. Explain the significance of the term QWERTY in this regard.

[5 Marks]

Question 4   [20 Marks]

(a) When system, user, or software errors occur on a computer, ***Event Viewer*** is updated with information about the errors. As a technician, describe the important information you can gather from the "Event Viewer" utility of a computer.

[12 Marks]

(b) While gathering information from a computer user about the problems he/she is experiencing while using a computer, you may use both "Open Ended" and "Closed Ended" questions.

    (i) Differentiate between open ended and closed ended questions.

[4 Mark]

    (ii) Give two (2) examples of each type of question that you may ask your client.

[4 Marks]

Question 5   [20 Marks]

(a) Explain the following functions of the operating system.

    (i)   Memory Management (2 Marks)
    (ii)   Processor Management (2 Marks)
    (iii)   Device Management (2 Marks)
    (iv)   File Management (2 Marks)
    (v)   Security (2 Marks)

[10 Marks]

(b) If the customer does not have a current backup and you are not able to create one, you should ask the customer to sign a liability release form. Describe the information that the liability release agreement should contain.

[6 Marks]

(c) Explain four (4) possible implications of installing hardware components.

[4 Marks]

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