THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

JANUARY-APRIL 2025

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER AND INFORMATION SCIENCE

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

CMT 101: HARDWARE AND SOFTWARE MAINTENANCE

DATE: APRIL 2025	**Duration: 2 Hours**
INSTRUCTIONS: Answer Question ONE and any other TWO Questions	

Q1.

a) Outline any two roles of the processor. **(2 Marks)**

b) Distinguish between hot boot and cold boot actions in a computer laboratory.

(2 Marks)

c) Describe how a mouse works. **(3 Marks)**

d) Identify SIX components that are normally mounted on the motherboard apart from Q1. (a) above. **(3 Marks)**

e) Describe the different sections on the workstation keyboard. **(3 Marks)**

f) Describe any three ports available on the system unit. **(3 Marks)**

g) Show how you would keep computers safe from viruses. **(3 Marks)**

h) Explain how you would troubleshoot a computer that is not connecting to the internet. **(3 Marks)**

i) Describe any FOUR tools that you can use to work in a computer hardware laboratory. **(4 Marks)**

j) Explain any FOUR tasks that are commonly done by hardware and software maintenance employees. **(4 Marks)**

Q2.

a) Explain the process of installing an operating system in a computer. **(8 Marks)**

b) Describe any FOUR tasks that you can accomplish using the control panel of a computer. **(8 Marks)**

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c) Explain what causes heating in a computer and how the computer is designed to handle heating. **(4 Marks)**

Q3.

a) Explain the process of upgrading a computer's random access memory.

(5 Marks)

b) i. Describe a computer bus **(3 Marks)**

   ii. List any two types of computer bus. **(2 Marks)**

c) Describe any FIVE design factors that distinguish one computer from another.

(10 Marks)

Q4.

a) Explain THREE key issues of concern in the server room of an organization and how they can be addressed. **(6 Marks)**

b) Outline SIX guidelines to adhere to while working in a computer hardware and maintenance laboratory. **(6 Marks)**

c) Describe how the following devices operate

   i.   Keyboard **(3 Marks)**

   ii. Scanner **(3 Marks)**

d) Identity the categories of motherboards. **(2 Marks)**

Q5.

a) Explain FIVE hardware and software maintenance tasks that you are expected to carry out while operating on printers. **(5 Marks)**

b) Describe the two types of computer hard drives. **(4 Marks)**

c) Outline FOUR disadvantages of overclocking a computer. **(4 Marks)**

d) Explain the factors that distinguish the types of computers monitor technologies.

(4 Marks)

e) Distinguish between the functions of the north and south bridges. **(3 Marks)**

END