(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

(MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2022/2023 ACADEMIC YEAR

FIRST SEMESTER EXAMINATIONS

FOR THE DEGREE

IN

COMPUTER SCIENCE

COURSE CODE: BCS 110

COURSE TITLE: FUNDAMENTALS OF COMPUTING

DATE: 22/12/2022   **TIME: 8:00-10:00 PM**

INSTRUCTIONS TO CANDIDATES

Answer **Question ONE (1)** and any other **TWO**

TIME: 2 Hours

This Paper Consists of 2 Printed Pages. Please Turn Over.

SECTION A: COMPULSORY QUESTION   {30 MARKS}

QUESTION 1

a) Explain why a basic mathematical calculator is **not** a computer.   (2 Marks)

b) Computers have primary storage and secondary storage. Explain the meaning of these using a suitable example in each case.   (4 Marks)

c) Give one similarity and one difference between RAM and ROM.   (4 Marks)

d) Computer systems may be classifieds based on different perspectives.

    i.   Outline any **two** such perspectives.   (2 Marks)

    ii.   Discuss any **three** types of computer systems.   (6 Marks)

e) Explain any three known characteristics of a computer system.   (6 Marks)

f) Explain the relationship, if any, between the computer hardware, system software and application software, provide an example in each case.   (6 Marks)

SECTION B: **_ANSWER ANY TWO QUESTIONS_**   **_{20 MARKS EACH}._**

QUESTION 2

a) When you are creating your CV or working on some other documents, on your personal computer.

     i.   Where is your work stored, before you finally save it?   **(1 Mark)**

     ii.   The storage unit (as in question above) holds or does three important things. Outline the

        three.   **(3 Marks)**

b) Discuss **four** different applications of computers in a learning institution.   **(8 Marks)**

c) In your institution of learning, students use the computers at the labs and their own laptops. Based

   on your knowledge on history of computers.

     i.   Which generation do the laptops and desktops represent?   **(2 Marks)**

     ii.   Argue your answer in question above, (use three reasons).   **(6 Marks)**

QUESTION 3

a) Draw a block diagram of basic components of a computer system. Explain each component in

   detail.   **(10 Marks)**

b) You have been selected in a committee to advise the government on how they can benefit from the

   use of computers. Discuss **three** different applications of computers, you will recommend.

                (6 Marks)

c) Computers have primary storage and secondary storage. Explain the meaning of these using a

   suitable example in each case.   **(4 Marks)**

QUESTION 4

a) Discuss three types of memory, citing one advantage in each case. (9 Marks)

b) Define a communication network, and hence discuss the importance of networking, use any three reasons. (7 Marks)

c) Monitors and printers are known output devices; -

    i.   Describe the two main types of Printers. (2 Marks)

    ii.   Give two example in question above. (2 Marks)

QUESTION 5

a) The CPU is the brain of the computer,

    i.   Justify this statement (2 Marks)

    ii.   Use a block diagram to explain the CPU. (4 Marks)

b) Monitors are known output devices, describe the two main types of monitors. (2 Marks)

c) Show how you can express ~~this binary~~ these numbers to the decimal equivalent.

    i. 10101_2 (3 Marks)

    ii. 12570_8 (3 Marks)

d) Show how you can express ~~this decimal~~ these numbers to the binary equivalent.

    i. 39_{10} (3 Marks)

    ii. 26_8 (3 Marks)