



# **MAASAI MARA UNIVERSITY**

## **REGULAR UNIVERSITY EXAMINATIONS 2019/2020 ACADEMIC YEAR FIRST YEAR FIRST SEMESTER**

### **SCHOOL OF SCIENCE BACHELOR OF COMMERCE**

**COURSE CODE: BCM 1105**

**COURSE TITLE: INTRODUCTION  
TO COMPUTER SCIENCE**

**DATE: 13-12-19**

**TIME: 1100-1300 HRS**

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#### **INSTRUCTIONS TO CANDIDATES**

Answer Question **ONE** and any other **TWO** questions

*This paper consists of 3 printed pages. Please turn over.*

**SECTION A (30Marks): Answer all questions from this section**

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**QUESTION 1**

- (a) Distinguish between **(4 Marks)**  
(i) Defacto standards and Dejure standards  
(ii) Northbridge and Southbridge on the motherboard
- (b) Give four devices that can be connected to a motherboard **(4 marks)**
- (c) Computer ports are interfaces between peripheral devices and the computer. Name five ports that can be found at the rear of the computer. **(5 Marks)**
- (d) Give three different ways in which computers can be categorized. **(3 Marks)**
- (e) Give five characteristics of mainframe computers **(5 Marks)**
- (f) Give four types of output devices **(4 Marks)**
- (g) List three functions of the control unit **(3 Marks)**
- (h) Convert the following octal numbers to decimal **(2 Marks)**  
(i)  $4276_8$   
(ii)  $213_8$

**SECTION B (40Marks): Answer TWO questions from this section**

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**QUESTION 2**

- (a) Solve for x in the following equation. **(6 Marks)**  
(i)  $x+8 \equiv 3 \pmod{13}$   
(ii)  $9x \equiv 5 \pmod{12}$   
(iii)  $X^2 \equiv 4 \pmod{12}$
- (b) What are the four basic operations that a computer can perform **(4 Marks)**
- (c) Describe the two common designs of desktop computers **(2 Marks)**
- (d) Discuss four network topologies **(8 Marks)**

### QUESTION 3

- (a) Start with the seed  $X_0 = 19$  and generate 10 pseudo-random numbers using the formula  $X_n = 19 X_{n-1} \pmod{100}$  **(5 Marks)**
- (b) Give two difference between an IDE hard disc and a SATA hard disc **(4 Marks)**
- (c) Briefly explain the key issues you will consider when designing a computer network for an organisation. **(6 marks)**
- (d) State and explain five types of memory **(5 Marks)**

### QUESTION 4

- (a) Perform the following Hexadecimal additions **(6 Marks)**
- (i)  $2C + 3A$
  - (ii)  $4B + AA$
  - (iii)  $72 + 28$
- (b) Give four examples of methods used to secure a computer **(4 Marks)**
- (c) List four types of computers that are designed for use by organizations, and are commonly used by multiple people at the same time. **(4 Marks)**
- (d) State six advantages of using a word processor **(6 Marks)**

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