MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
FIRST YEAR FIRST SEMESTER

SCHOOL OF SCIENCE AND INFORMATION SCIENCES
BACHELOR OF SCIENCE (INFORMATION SCIENCES)

COURSE CODE: **INS 1103**
COURSE TITLE: **INTRODUCTION TO INFORMATION TECHNOLOGY**

DATE: 11TH DECEMBER, 2018 **TIME: 1100 - 1300 HRS**

INSTRUCTIONS TO CANDIDATES

(i) 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) RAM and ROM

(b) Outline the difference between special-purpose computers and general purpose computers **(2 marks)**

(c) Briefly explain the four categories of computer hardware. **(4 Marks)**

(d) Give the different ways in which computers can be categorized. **(3 Marks)**

(d) Give five characteristics of mainframe computers **(5 Marks)**

(e) Give five types of input devices **(5 Marks)**

(f) List three functions of the control unit **(3 Marks)**

(g) Describe the information processing steps **(4 Marks)**

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

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QUESTION 2

(a) Solve for x in the following equation. **(8 Marks)**

(i) $x+8 \equiv 3 \pmod{13}$

(ii) $9x \equiv 5 \pmod{12}$

(iii) $X^2 \equiv 5 \pmod{8}$

(iv) $X^2 \equiv 4 \pmod{12}$

(b) Describe the two common designs of desktop computers **(2 Marks)**

(c) Discuss six types of threat that could affect a computer system, and for each, describe the possible outcomes for an organization. **(6 Marks)**

(d) Computers can perform four basic operation, name them **(4 Marks)**

QUESTION 3

(a) Start with the seed $X_0 = 19$ and generate 10 pseudo-random numbers using the formula $X_n=19\ X_{n-1} \pmod{100}$ **(3 Marks)**

(b) Explain how the following devices work indicating whether they are used input or output **(4 Marks)**

(i) Speech devices

(ii) Touch screen
(iii) Touch pad
(iv) Light pen

(c) Briefly explain the key issues you will consider when designing a computer network for a school. **(3 marks)**

(d) State and explain four types of memory **(4 Marks)**

(e) Explain three network topologies **(6 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) Give and explain four types of optical storage **(4 Marks)**

(e) Give four disadvantage of a computer network **(2 Marks)**

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