MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
THIRD YEAR SECOND SEMESTER

SCHOOL OF SCIENCE AND INFORMATION SCIENCES
UNIVERSITY EXAMINATIONS FOR THE
DEGREE OF BACHELOR OF SCIENCE
(COMPUTER SCIENCE)

COURSE CODE: COM 3205
COURSE TITLE: SYSTEMS SECURITY

DATE: 18TH APRIL, 2019   **TIME: 1100 – 1300HRS**

INSTRUCTIONS

1. Answer Question ONE and any other TWO Questions From Section II
2. Question 1 is compulsory.
3. Time 2HRS.
4. *Mobile phone are not allowed in exam room*.

Section I, Compulsory

(a) Achieving the desired level of security is a multi-layered system. Briefly discuss each of the following system security layers.   **[10 marks]**

    (i) Physical security.

    (ii)Application Security.

    (iii) Data Security.

    (iv) Telecommunications and Network security.

    (v) Operations security.

(b) Define access control and explain its four basic tasks.   **[5 marks]**

(c) Explain the difference between Symmetric Key   **[3 marks]**

(d) Given that a b c d e f g h i j k l m n o p q r s t u v w x y z translates to D E F G H I J K L M N O P Q R S T U V W X Y Z A B C under Caesar cipher. Break the following encrypted statement. PHHW PH DIWHU WKH WRJD SDUWB. Explain your answer.   **[4 marks]**

(e)Explain the difference between network security and internet security.

    [4 marks]

(f) What do you understand by "man in the middle attack?"   **[2 marks]**

(g) Discuss accountability as a systems security issue.   **[2 marks]**

Section II, Answer any two Questions

Question 2

(a)   Identify and discuss the two main software testing techniques.
                                                              [10 marks]

(b)   Explain any five secure coding activities as recommended by SAFE Code.
                                                              [10 marks]

Question 3

(a)   What do you understand by information systems security policy?
                                                              [3 marks].

(b)   Give a general description of enterprise information security policy and outline its elements.   **[10 marks]**

(c)   How does the security policy described in b above differ from issue specific security policy?   **[7 marks].**

Question 4, optional

(a)   Given that the algorithm for transforming the alphabet (abcdefghijklmnopqrstuvwxyz) is DKVQFIBJWPESCXHTMYAUOLRGZN, give the cipher texts for the following statements.

       i. I am a cryptography expert.   **(5 marks)**

      ii.   This course is easy.   **(2 marks)**

(b)   You have stumbled upon the following playfair cipher, use it to answer the following questions.   **(5 marks)**

R	P	M	L	
S	A	X	I/J	
H	K	Q	U	
E	W	O	Z	
B	F	T	V	

(i)   Encode and send the message "I can see you there."   **(4 marks)**

(ii)   Decode the message BQZRXSQWTWVSGSVXLUNQ.   **(4 marks)**

//END