



# **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: 18<sup>TH</sup> APRIL, 2019  
1300HRS**

**TIME: 1100 -**

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**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	D
S	A	X	I/J	C
H	K	Q	U	Y
E	W	O	Z	G
B	F	T	V	N

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

**(4 marks)**

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

**//END**