CONFIDENTIAL

Infrastructure University Kuala Lumpur

FINAL EXAMINATION
SEPTEMBER/OCTOBER SEMESTER 2016

BACHELOR OF INFORMATION TECHNOLOGY (HONS) IN NETWORK TECHNOLOGY
BACHELOR OF INFORMATION TECHNOLOGY (HONS) IN SOFTWARE ENGINEERING

NETWORK AND DATA SECURITY
(BTN 303)

(TIME : 3 HOURS)

MATRIC NO. : | | | | | | | | | |

IC. / PASSPORT NO. : | | | | | | | | | | | | | | |

LECTURER : VALERIANO A. DASALLA JR.

GENERAL INSTRUCTIONS

1. This question booklet consists of 4 printed pages including this page.
2. Answer **ALL questions** in **SECTION A** in the **ANSWER BOOKLET**
3. Answer **ANY FOUR (4) questions** in **SECTION B** in the **ANSWER BOOKLET**
4. Answer **ANY TWO (2) questions** in **SECTION C** in the **ANSWER BOOKLET**

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INSTRUCTIONS: **TIME:** ***3 HOURS***

SECTION A **(30 MARKS)**

There are SIX (6) questions in this section. Answer ALL Questions in the Answer Booklet.

1. Briefly discuss the following terms:

   a) Eavesdropping.

   (1 mark)

   b) Message Integrity.

   (1 mark)

   c) Internet Fraud.

   (1 mark)

   d) Denial-of-service attack.

   (1 mark)

2. Explain what is meant by a social engineering attack on a password.

   (5 marks)

3. Interpret the activities of ethical hacker.

   (5 marks)

4. Differentiate between passive and active security attacks.

   (5 marks)

5. Explain briefly the following concepts:

   a) One-way function.

   (2 marks)

   b) One-way hash function is similar.

   (2 marks)

   c) Trapdoor one-way.

   (2 marks)

6. Evaluate the misconceptions concerning public-key encryption.

   (5 marks)

SECTION B **(40 MARKS)**

There are FIVE (5) questions in this section. Answer ANY (4) Questions in the Answer Booklet.

1. Assess the goals an ideal password authentication scheme should achieve.

(10 marks)

2. Discuss briefly at least **TWO (2)** Intrusion Detection System Concepts.

(10 marks)

3. Outline how attacks on passwords are broadly classified.

(10 marks)

4. Distinguish between white hat hacker and black hat hacker.

(10 marks)

5. Discuss **TWO (2)** approaches to message authentication.

(10 marks)

SECTION C **(30 MARKS)**

There are THREE (3) questions in this section. Answer ANY (2) Questions in the Answer Booklet.

1. Consider yourself as a system administrator of a company. You are asked to develop a security policy of your company based on the following situations: New employees, Leaving employees, and Change requests. Define policies of at least **FIVE (5)** areas that need to be considered in each situations.

(15 marks)

2. With regards to network and data security, implementing password is an ideal solution for user authentication and to protect the data. Justify **THREE (3)** main concerns with the use of passwords for authentication.

(15 marks)

3. Perform the calculation for RSA algorithm for the following: Show your complete solution in getting the value of n, e, d, and ϕ (n).

a) p = 7; q = 17

(3 marks)

b) p = 11; q = 13

(3 marks)

c) p = 19; q = 23

(3 marks)

d) p=13; q=17

(3 marks)

e) p=11; q=17

(3 marks)

***** END OF QUESTIONS *****