Infrastructure University Kuala Lumpur

FINAL EXAMINATION
JUNE 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 5 printed pages including this page.
2. Answer **ALL questions** in **SECTION A** in the **ANSWER BOOKLET**
3. Answer **ANY FIVE (5) questions** in **SECTION B** in the **ANSWER BOOKLET**

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

SECTION A **(40 MARKS)**

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

1. Discuss why PGP (Pretty Good Privacy) is popular and give at least **THREE (3)** reasons. (5 marks)

2. Briefly discuss the following terms:

   a) Eavesdropping (2 marks)

   b) IP security (2 marks)

   c) *Message integrity* (2 marks)

   d) Internet fraud (2 marks)

   e) Authentication (2 marks)

3. Interpret the activities of ethical hacker. (5 marks)

4. Differentiate between passive and active security attacks. (5 marks)

5. Consider an automated teller machine (ATM) in which users provide a personal identification number (PIN) and a card for account access.

   a) Give an example of confidentiality, integrity, and availability requirements associated with the system.

   (6 marks)

   b) In each case, indicate the degree of importance of the requirement.

   (4 marks)

6. Evaluate the misconceptions concerning public-key encryption.

   (5 marks)

SECTION B **(60 MARKS)**

There are FIVE (5) questions in this section. Answer ANY (4) 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, Security breaches. Define policies of at least **FIVE (5)** areas that need to be considered in each situations.

(15 marks)

2. Discuss briefly the following Intrusion detection system concepts:

   a) Preemptive blocking

(5 marks)

   b) Infiltration

(5 marks)

   c) *Intrusion Deflection*

(5 marks)

3. Distinguish between white hat hacker, black hat hacker, and gray hat hacker.

(15 marks)

4. 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 = 29; q = 59

(3 marks)

   b) p = 17; q = 31

(3 marks)

   c) p = 31; q = 37

(3 marks)

   d) p=19; q=41

(3 marks)

   e) p=29; q=41

(3 marks)

5. Discuss at least **THREE (3)** approaches to message authentication.

(15 marks)

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