



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER I  
SESSION 2019/2020**

COURSE NAME : INFORMATION SECURITY  
MANAGEMENT

COURSE CODE : BIS 30503

PROGRAMME CODE : BIS

EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020

DURATION : 3 HOURS

INSTRUCTION : ANSWER ALL QUESTIONS

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THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

- Q1** (a) Discuss how digital signature and digital certificate are used to manage the integrity and authenticity of confidential data between two organizations. (10 marks)
- (b) Discuss **THREE (3)** management issues with Digital Certificate. Justify your answer. (10 marks)
- Q2** (a) Describe **FIVE (5)** steps to make an organization electronic mail system secure. (10 marks)
- (b) Prepare a Bring Your Own Devices (BYOD) general policy for maintaining the confidentiality and integrity of an organization. (10 marks)

**Q3** On 28 January 2019, the Singapore Ministry of Health (MoH) was alerted by the Singapore Police that confidential information regarding 14,200 individuals diagnosed with HIV had been leaked online. The data included names, identification numbers, contact details, and critically, the HIV positive status of these individuals and their related medical information. The medical records belonged to 5,400 Singaporeans diagnosed with HIV since 1985 up to January 2013, as well as 8,800 foreigners diagnosed with HIV up to December 2011.

Based on the above scenario:

- (a) Discuss **THREE (3)** lessons can be learned from this incident. (10 marks)
- (b) Discuss and justify **THREE (3)** information security techniques for avoiding this type of incident for confidential health records. (10 marks)
- Q4** (a) Describe **TWO (2)** benefits of using Internet Protocol Version 6 (IPv6) instead of Internet Protocol Version 4 (IPv4). (4 marks)
- (b) Discuss **THREE (3)** significances of IPv6 for the Internet of Things (IoT). (12 marks)

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- Q5** (a) Write an appropriate command for a router for the question below.
- (i) Write an IPv4 Access Control List (ACL) Internetwork Operating System (IOS) Command for creating a Standard Name ACL called UTHM. (2 marks)
  - (ii) Adds a user-friendly comment about an access list entry when the other unauthorized user try to access the network. "Access to this network are limited to UTHM Students Only.". (2 marks)
  - (iii) Deny all hosts from network 172.16.0.0 from passing the access list. Any packets from that source are logged when they are denied. This is a way to be notified that someone on a network or host is trying to gain access. (2 marks)
  - (iv) Allowed host from network 172.18.5.22 to pass the access list. (2 marks)
  - (v) Apply UTHM Access Control List to Interface GigabitEthernet0/1. (2 marks)
  - (vi) Write an IPv6 Access Control List (ACL) IOS Command for creating a Standard Name ACL called CISCO. (2 marks)
  - (vii) Allow host from 2001:DB8:0:4::32 to access the network. (2 marks)
  - (viii) Apply access control list called CISCO to the Interface GigabitEthernet0/0. (2 marks)
- (b) Describe **TWO (2)** advantages of using ACL for protecting our computer network. (4 marks)

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- END OF QUESTION -