



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
(ONLINE)
SEMESTER I
SESSION 2020/2021**

COURSE NAME : SOFTWARE SECURITY
COURSE CODE : BIS 20503
PROGRAMME CODE : BIS
EXAMINATION DATE : JANUARY / FEBRUARY 2021
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : 1. ANSWER ALL QUESTIONS
2. PLEASE MAKE SURE TO
CLICK "SAVE ANSWER"
BUTTON FOR SUBJECTIVE
QUESTIONS. OBJECTIVE
QUESTIONS ARE SAVED
AUTOMATICALLY

TERBUKA

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

- Q1** Compare between the Author of Universiti Tun Hussein Onn Malaysia (UTHM) and Google Classroom in the context of Predictable Execution and Trustworthiness properties. (10 marks)

- Q2** Based on Figure Q2, answer the following questions.

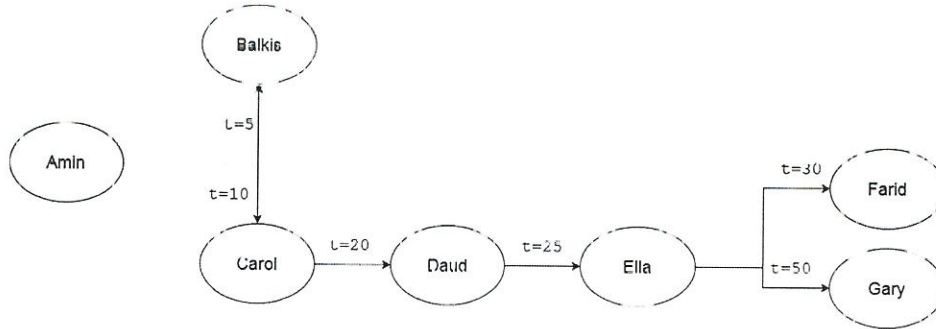


FIGURE Q2

- (a) Describe the cascading authorizations in Figure Q2 if Daud revokes the access right to Ella. (3 marks)
- (b) Draw a new cascading authorization diagram if Balkis grants the access right to Ella at $t=40$. (2 marks)
- (c) Discuss the access right to Farid and Gary if Daud revokes the access right to Ella based on your answer in Q2(b). (5 marks)
- Q3** You have been selected as a Head of Secure Software consultant for a mobile health application (m-Health app) development project for the Hospital Sultanah Nora Ismail (HSNI). The app's modules involve Patient Record, Patient Medical History, Appointment, and Bill Payment.
- (a) Discuss **TWO (2)** potential security risks for each of the element in the *STRIDE* model in the context of HSNI m-Health app. (12 marks)

- (b) Discuss **FOUR (4)** potential software design flaws that could lead to HSNI app's data at-rest breach and provide **ONE (1)** scenario example for each of the flaw.

(10 marks)

- (c) Due to the Covid 19 pandemic, HSNI decides to add a module of Remote Covid Patient Monitoring. Propose **FIVE (5)** secure coding approaches based on the Software Engineering Institute Centre of Emergency Response Team (SEI (CERT)) guideline to minimize patients' data privacy attacks.

(10 marks)

Q4

Dr. Jamilah created a QuestionBank.txt file and stored in a Ubuntu file server. As the owner, Dr. Jamilah has a full access to the file while all faculty's lecturers in the ISLecturer group has permission of read and write operations. None permission is granted to others than the owner and ISLecturer group.

- (a) Write a command to configure the QuestionBank.txt permission.

(1 mark)

- (b) Justify if Dr Deepa, a faculty lecturer, could delete QuestionBank.txt from the directory.

(2 marks)

- (c) Write a command to change the file permission using the octal format to allow other staff of faculty to view the contents of the file.

(2 marks)

Q5

Mr Jamil, a black hat hacker, has been arrested and charged with phishing and data breach crimes. An investigation on Mr Jamil's laptop (operated using Windows 10) revealed that he used the war-driving technique to various network connections in intercepting victims' communication. Other important clues showed that Mr Jamil used Internet Explorer browser and stored information using a few of USB drives.

- (a) Identify **TWO (2)** HKEY_LOCAL_MACHINE that contains of network information.

(5 marks)

- (b) Identify the `HKEY_LOCAL_MACHINE` that contains of Universal Serial Bus (USB) drives information. (4 marks)
- (c) Discuss the importance of the `RunMRU` key to facilitate the case investigation. (4 marks)

- END OF QUESTIONS -