UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2021/2022

COURSE NAME	:	MULTIMEDIA SECURITY TECHNOLOGY
COURSE CODE	:	BIM 33403
PROGRAMME CODE	:	BIM
EXAMINATION DATE	:	JULY 2022
DURATION	:	3 HOURS
INSTRUCTION	:	1. ANSWER **ALL** QUESTIONS.
		2. THIS FINAL EXAMINATION IS AN **ONLINE** ASSESSMENT AND CONDUCTED VIA **OPEN BOOK**.

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

Q1   Given the following scenario:

Farruq Berhad plans to develop a new e-market place called FarMall. FarMall will enable users to sell and buy products. Sellers advertise and sell their products and will be paid after each transaction completion. Buyers will be provided with services such as view account; update account details; buy or cancel products; monitor the delivery status; make payment thru third party gateway or the in-house e-wallet; and release the payment once the product is received, or request for refund. The authentication and authorization strategies for enabling these functionalities for the platform must be balanced between usability and security. FarMall should support access from multiple devices such as smart phones, tablets and desktop. A user can have multiple accounts.

(a)   Discuss FarMall security requirements and concerns in term of information security principles and potential threats/attacks.

(10 marks)

(b)   Discuss the multi-factors authentication (MFA) and authorization for different services that should be applied.

(10 marks)

(c)   Based on the answer in **Q1(b)**, propose suitable guideline to defeat potential Brute Force attacks.

(10 marks)

Q2   Given the following scenario:

With the rapid growth of smart phones technologies and network bandwidth coverage, mobile content streaming, as well as content protection for audio and video have become increasingly important. In the light of this digital progression, FarFlix Network is currently developing a mobile video-on-demand (VoD) platform that enable customers to either stream the video real-time or download it to a mobile device and watch it later within a given time period. The platform must support both during-delivery and post-delivery protection of the video from unauthorized access. Also, the platform has been designed to support lightweight streaming as the client might be using mobile data with minimum speed of 3Mbps. Each paid customer's account permits 3 concurrent streaming.

(a)   Illustrate and discuss the related Digital Right Management (DRM) activities and suitable recovery plan to suit the mobile-VoD platform.

(12 marks)

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(b)   Discuss relevant strategies that FarFlix Network should apply for end-to-end content delivery protection, including redistribution.

(8 marks)

Q3   Given the text message below:

`I choose to be honest during exam`

(a)   Discuss how the message can be hidden inside an image.

(5 marks)

(b)   Discuss how the message can be sent through text messaging group so that only the sender and the receiver will understand the message.

(5 marks)

(c)   Based on the answer in **Q4(b)**, illustrate it using **ONE (1)** related solution. Use your own four letters as the keyword when necessary.

(5 marks)

(d)   Based on the answer in **Q4(c)**, discuss possible ways to break it.

(5 marks)

Q4   Given the following scenario:

`Deepfake technology utilizes artificial intelligent to make fake video. For example, one can create videos of people that never happened/exist. It can be created using available photos/videos including the one being uploaded/shared on the social network platforms. Currently, this technology is being used for entertainment, however can be a medium for sabotage as well.`

(a)   Discuss relevant strategies to secure or protect your photos/videos from being a victim of deepfake videos.

(6 marks)

(b)   Discuss issues of deepfake videos in relation to intellectual property (IP).

(4 marks)

- END OF QUESTIONS –

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