



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
(ONLINE)
SEMESTER II
SESSION 2019/2020**

COURSE NAME : PRINCIPLES OF SOFTWARE ENGINEERING
COURSE CODE : BIE 10103
PROGRAMME CODE : BIP
EXAMINATION DATE : JULY 2020
DURATION : 3 HOURS
INSTRUCTION : 1. ANSWER ALL QUESTIONS.
2. PLEASE MAKE SURE TO CLICK "SAVE ANSWER" BUTTON FOR SUBJECTIVE QUESTIONS. OBJECTIVE QUESTIONS ARE SAVED AUTOMATICALLY.

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

Q1 Answer **Q1(a)** to **Q1(d)** based on the case study provided in **Figure Q1**.

Online Grocery System (OGS), A small chain of grocery stores is building a Website to allow customers to place orders for groceries and other items they sell. Once the customer places a Web order, an order record is created. The order prints at a local store, and the goods are picked from the shelves by the store employees. Customers are sent an email notification that their order is ready.

Figure Q1

- (a) Propose **TWO (4)** related stakeholders for the case study in **Figure Q1**.
(4 marks)
- (b) Propose **TWO (2)** related functional requirements for the case study in **Figure Q1**.
(4 marks)
- (c) Propose **TWO (2)** related non-functional requirements for the case study in **Figure Q1**.
(4 marks)
- (d) Determine whether each of the following statement is a functional or non-functional requirement for the case study in **Figure Q1**.
- (i) The software shall add descriptions to products so that users can later view these descriptions and compare the products.
(? marks)
 - (ii) The software testing should eliminate all bugs that may influence the code safety and issues with system components.
(2 marks)
 - (iii) Response time for short queries must be less than 3 sec.
(2 marks)
 - (iv) In defining customers record, the system user must be able to enter customers' name and be prompted for all the remaining customers' attributes that are needed for the customers' record.
(2 marks)

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Q2 Answer **Q2(a)** to **Q2(e)** based on the case study provided in **Figure Q2** and your knowledge of how the ATM system is used.

An Automated Teller Machine (ATM) system allows users to perform financial transactions, such as cash deposits, withdrawals, funds transfers, or account information inquiries, at any time and without the need for direct interaction with some bank staffs.

Figure Q2

- (a) Propose **TWO (2)** requirements to develop the ATM software. Propose **THREE (3)** supporting specification for these requirements. (5 marks)
- (b) Select a suitable architectural design pattern or model to be used on developing this ATM system. Explain how you are going to apply the chosen architectural design on the development of the ATM system. (5 marks)
- (c) State **TWO (2)** differences between Safety and Security requirements. Give **ONE (1)** example for each of them. (5 marks)
- (d) Specify **FIVE (5)** suitable test conditions required for user login with a six-digit PIN to the ATM system using boundary analysis technique. (5 marks)
- (e) In this case study, performance and security may pose themselves as conflicting non-functional requirements when architecting the ATM software system. Make an argument in supporting this statement and provide examples. (5 marks)

Q3 Write an essay based on the case study provided in **Figure Q3**. The essay should provide an answer to the questions **Q3(a)** to **Q3(e)**.

Your software development company have been given the opportunity to work on an Android apps project. The project is about the development of Password Manager apps that lets a user save login credentials in a safe and secure way. It can also help the user to generate new passwords to use them on different accounts. All the saved user's passwords are protected by a master password.

Figure Q3

- (a) Describe universal project management activities to be used in this project? (5 marks)

- (b) Describe **TWO (2)** main project scheduling activities and associated problems that might affect the project development progress?
(5 marks)
- (c) Your employer asked you to prepare a pricing form to this software project. Describe the needed pricing strategies and argue about which pricing strategy would you prefer to use for this project?
(5 marks)
- (d) Describe **FIVE (5)** types of risks facing the project management? Provide an example for each risk type.
(5 marks)
- (e) Discuss the case of encountering a delay risk in the project. Provide solutions to mitigate this risk based on a contingency plan?
(5 marks)

- END OF QUESTIONS -

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