



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER I  
SESSION 2021/2022**

COURSE NAME : MOBILE APPLICATION  
DEVELOPMENT

COURSE CODE : BIM 30603

PROGRAMME CODE : BIM / BIW

EXAMINATION DATE : JANUARY/ FEBRUARY 2022

DURATION : 3 HOURS

INSTRUCTION : 1. ANSWER ALL QUESTIONS

2. THIS FINAL EXAMINATION IS  
CONDUCTED ONLINE AND OPEN  
BOOK

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

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**TERBUKA**

**Q1** Question Q1 (a) to Q1 (e) are based on the following scenario.

Due to its scale and importance, agriculture is one of the first industries to embrace digital transformation and move to a new technical approach to cultivating and cattle breeding. SAVA Technology Sdn. Bhd. has been appointed by a well-known agriculture company to develop an agriculture mobile application. The mobile application should help agriculture specialists to improve their work. It aims to optimize their work, achieve better planning and yield prediction to increase production capabilities and automate business processes. The mobile application will help agriculture specialists and farmers on farming decisions by making field data accessible and easy to collect. Real-time data are collected from soil, field activity, machinery, and equipment. Users can scout crops for pest pressures and easily record and collect observation photos from the field. Users are also able to monitor and track their plant needs from everywhere. The mobile application should be able to run on multiple platforms.

- (a) Suggest the best mobile application development framework with appropriate justification if you are given only two months to complete the development of the required application.  
(4 marks)
- (b) Design the dashboard/main page for the mobile application based on appropriate design guidelines.  
(8 marks)
- (c) Discuss major opportunities of including wearables platform for the mobile application.  
(8 marks)
- (d) Suggest the external services that is suitable for enhancing the mobile application.  
(10 marks)
- (e) Elaborate most suitable monetization strategies for the mobile application.  
(10 marks)



**Q2** Question Q2 (a) to Q2 (d) are based on the following scenario.

Due to global Covid-19 pandemic, education are one of the most affected areas. Most of educational institution rely heavily on online learning platform. UTHM uses its own developed online learning platform named Academic Online Resources (AUTHOR). The main objective of AUTHOR is to support teaching and learning process. AUTHOR is targeted to be fully used in full online courses and blended learning in all UTHM courses. To be fully accessible anytime, anywhere and any way, UTHM plan to develop mobile based application for AUTHOR. The mobile application should have all the modules in AUTHOR. Also, the mobile application should able to track the progress of each student. The progress can be viewed by parents, lecturers and academic advisors.

- (a) Explain approaches that developers can apply to make the developed application more accessible to people with visual or hearing impaired.  
(8 marks)
  
- (b) Discuss functional and non-functional requirements to be considered for the mobile application.  
(8 marks)
  
- (c) Design student's progress tracking interface using Flutter. Submit your Dart code and screenshot of your windows containing Dart code and the generated interface result.  
(14 marks)
  
- (d) Suggest new and emergent technologies that may be integrated in the mobile application to further enhance the teaching and learning process. Justify your answer.  
(10 marks)

- END OF QUESTIONS -

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