



## UNIVERSITY EXAMINATIONS

### EXAMINATION FOR SEPTEMBER/DECEMBER 2024/2025 DIPLOMA IN COMPUTER SCIENCE/DIPLOMA IN INFORMATION TECHNOLOGY/DIPLOMA IN BUSINESS INFORMATION TECHNOLOGY/DIPLOMA IN CYBER SECURITY

#### RCS 034: MOBILE APPLICATIONS DEVELOPMENT

DATE: 19<sup>TH</sup> APRIL 2024

TIME: 2 HOURS

#### GENERAL INSTRUCTIONS:

Students are NOT permitted to write on the examination question paper during exam time.  
This is a closed book examination. Text book/Reference books/notes are not permitted.

#### SPECIAL INSTRUCTIONS:

This examination paper consists Questions in Section A followed by section B.

Answer Question 1 and any Other Two questions.

QUESTIONS in ALL Sections should be answered in answer booklet(s).

1. PLEASE start the answer to EACH question on a NEW PAGE.
2. Keep your phone(s) switched off at the front of the examination room.
3. Keep ALL bags and caps at the front of the examination room and DO NOT refer to ANY unauthorized material during the course of the examination.
4. ALWAYS show your working.
5. Marks indicated in parenthesis i.e. ( ) will be awarded for clear and logical answers.
6. Write your REGISTRATION No. clearly on the answer booklet(s).
7. For the Questions, write the number of the question on the answer booklet cover page in the order you answered them.
8. DO NOT use your PHONE as a CALCULATOR.
9. YOU are ONLY ALLOWED to leave the exam room 1hour to the end of the Exam.
10. DO NOT write on the QUESTION PAPER. Use the back of your BOOKLET for any calculations or rough work.

### QUESTION ONE (30Marks)

- a) Describe the evolution of mobile devices from early handheld devices to modern smartphones. **(6 Marks)**
- b) A social networking platform intends to launch a mobile app to connect users with similar interests and hobbies. Discuss five strategies the platform can use to encourage user engagement, promote user-generated content, and ensure a positive community experience. **(10 Marks)**
- c) Discuss the importance of battery life and energy efficiency in mobile computing devices.
- d) Discuss the security concerns associated with mobile computing, and how can they be addressed in web Applications **(6 Marks)**
- e) Describe how developers can use snippet code to test and validate functionalities within an emulator environment. **(8 Marks)**
- f) A fitness company plans to create a mobile app to provide users with personalized workout plans, nutrition tracking, and progress monitoring. Discuss Four the strategies the company can use to engage users and promote long-term usage of the app. **(8 Marks)**

### QUESTION TWO

- a) Discuss three importance of battery life and energy efficiency in mobile computing devices. **(6 Marks)**
- b) Describe the security concerns associated with mobile computing, and how can they be addressed **(4 Marks)**
- c) Mobile phone software development environment poses unique challenges as opposed to Computer software development environment, explain any **THREE** of the challenges **(7 Marks)**
- d) State any **THREE** types of notification in android development. **(3 Marks)**

### QUESTION THREE (20Marks)

- a) Describe **THREE** things we can do as developers to make our apps more accessible to people who cannot use a mobile device the standard way. **(6 Marks)**
- b) Discuss **FOUR** core components of an Android app and how they are put together to create a full-featured app. **(4 Marks)**
- c) Describe what it means for an app to run 'in a sandbox' and how that affects how that app runs on the device. **(4 Marks)**
- d) Discuss any **THREE** disadvantages of using threads in App development **(6 Marks)**

#### QUESTION FOUR (20Marks)

- a) Compare and contrast native mobile app design versus standard desktop app design. **(3 Marks)**
- b) Assuming you have asked to do an interface for the following scenarios: Design an interface for users to browse products, search for items, make purchases, manage orders, and track shipments. What kind of the layout would be appropriate? Give a reason for your answer **(4 Marks)**
- c) A travel agency plans to develop a mobile app to provide users with travel itinerary planning, booking, and trip management features. Discuss how the app can leverage location-based services and real-time updates to enhance the travel experience for users **(8Marks)**
- g) Briefly explain any **five** factors or consideration before developing an application. **(5 Marks)**

#### QUESTION FIVE (20Marks)

- a) Differentiate between:
- i) Option menus from context menus. **(3Marks)**
  - ii) Wrap content and match parent **(2Marks)**
- b) Differentiate a *content provider* from a *broadcast receiver*. Describe a scenario where you would use each **(6 Marks)**
- c) Explain how an activity that is destroyed differs from one that is stopped **(3 Marks)**
- d) A healthcare organization wants to develop a mobile app to help patients track their medical appointments, medications, and health records. Discuss how can the app incorporate data security measures to protect sensitive patient information? **(6 Marks)**