



MURANG'A UNIVERSITY OF TECHNOLOGY
SCHOOL OF COMPUTING, INFORMATION AND
TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

UNIVERSITY ORDINARY EXAMINATION

2024/2025 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR
OF SCIENCE IN INFORMATION TECHNOLOGY
SIT 302 - MOBILE APPLICATION DEVELOPMENT

DURATION: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer question ONE and any other two questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

SECTION A – ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION ONE (30 MARKS)

- a) Explain the functions of the manifest.xml file in android. (2 marks)
- b) Describe three importance of user interaction and hardware consideration in mobile apps development. (3 marks)
- c) With aid of labelled illustrative diagram, describe an android activity life cycle showing the logical flow of an activity. (5 marks)
- d) Explain the function of the following component as used within an android apps development environment: (6 marks)
 - i. Activity
 - ii. Broadcast providers
 - iii. Content providers
- e) Elaborate a situation under which each of the three basic types of mobile application software may be suitable over other types. (6 marks)
- f) Maziwa bora milk dealers limited have contracted you to develop an android app that calculates the volume of milk in a horizontally laid cylindrical tank and the price of that milk based on user inputs as per the user interface shown in figure 1 (attached). Upon clicking the “calculate” button, the application should display the volume of the milk and its total worth accordingly. Write the activity xml code that you would use to implement the application interface. (8 marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

- a) Android OS is a software suite of component that work together to provide a platform of layered environment for mobile apps to execute. With aid of labelled diagram. Describe how the software component are logically grouped and interrelated in functionality. (6 marks)
- b) Explain the purpose of three dialog boxes supported by android and provide illustrative diagrams to show how they differ from each other. (6 marks)
- c) Wanguku egg dealer ltd have contracted you to develop an android app that calculates the total cost of chicken feed and total cost of eggs laid per month and the profit generated in a particular month from the sale of those eggs. The user should provide the required input as

shown in figure 2 (attached) and on clicking the calculate button, the application should display the total feed cost, total price of eggs and the profit thereof. Write the activity xml code you would use to implement the interface. (8 marks)

QUESTION THREE (20 MARKS)

- a) You have been performing your mobile apps tests on an android in built simulator. Explain three reasons why it would be really important to perform the tests before publishing the apps into Google play. (6 marks)
- b) Describe three types of tests you may have to perform on the apps stating the relevance of each type of test. (6 marks)
- c) You are required to develop a mobile app that allow students to enrol for two out of three professional courses offered by Maarifa University of Technology. On enrolment the student should specify one of the two possible fees payment modes. Write the activity xml code to implement the interface exactly as relayed in figure 3 (attached). (8 marks)

QUESTION FOUR (20 MARKS)

- a) *“In android, both notifications and toast are used to provide feedback to users of the apps, but they serve different purposes and have distinct characteristics.”* Justify the truth of this statement by completing the table below appropriately.

	Notification	Toast
i. Purpose		
ii. Visibility		
iii. Customization		

- (b) From mobile apps development perspective distinguish between the text-view and edit text user interface widgets on the basis of their functionality and attributes. (6 marks)
- (c) Study the android apps code snippets provided in figure 4 (attached) and answer the questions that follow: (8 marks)