

University of Ruhuna - Faculty of Technology
Bachelor of Information and Communication Technology Honours Degree
Level 3 (Semester II) Examination, October/November 2022
Academic year 2020/2021

Course Unit: ICT3233 Mobile Application Development (Written)

Duration: 2 hours

-
- Answer all **Four (04)** questions.

1)

- a) "Before investing in a mobile application, a company must choose the approach they will follow to develop the particular application"
 - i) State the **three (03)** common approaches of mobile application development.
 - ii) Briefly explain **two (02)** approaches given in part a) i).
- b) State **five (05)** frameworks that can be used to develop mobile applications.
- c)
 - i) Write the **six (06)** major components of the Android platform architecture.
 - ii) Among all the components given in part c) i), what component is considered as the heart of Android platform architecture?
 - iii) Provide **three (03)** reasons for considering it as the heart of the Android platform architecture.
- d) Many different Android Operating System versions are available and functioning in the current market. Discover an issue that can be occurred due to the availability of different OS versions in the market by providing reasons.

2)

- a) "App components are the crucial building blocks of an Android application. Each component can be an entry point for a system or a user to interact with the app."
 - i) State the **four (04)** types of app components used in an Android application.
 - ii) Briefly describe **two (02)** components given in part a) i).
- b) Before launching an app component, the Android system must read the manifest file (AndroidManifest.xml) to ensure that the component exists. The app must declare all its components in this file, and it must be located at the root of the app's project directory. Mention **four (04)** duties manifest file performs except declaring app components.
- c)
 - i) List **three (03)** advantages that can be gained by externalizing the app resources in an Android application.

- ii) State **four (04)** build settings that are configured using the module-level build.gradle file in an Android application.
- d) i) Explain the lifecycle of an **Activity** using the core set of callbacks.
- ii) Determine the series of callback methods called during each of the following scenarios.
 - a. When you press the back button and exit the app.
 - b. When you press the home Button.
 - c. After pressing the home button, again when you open the app from a recent task list.

3)

- a) “Intents are used as messaging objects which request different actions from app components in an Android application”.
 - i) Write **three (03)** fundamental use cases of intents.
 - ii) Suppose that there are two activities named **FirstActivity** and **SecondActivity** in an Android application. Write a code to send the following data from FirstActivity to SecondActivity.

Table 1: Student details

Name	Gayani
City	Galle
Department	ICT

- b) Compare and contrast implicit intents and explicit intents.
- c) “The fate of a fragment is tightly bound to that of the component to which it belongs.” Do you agree with the statement? Justify your answer.
- d) i) Explain the difference between a **View** and a **ViewGroup** in Android.
- ii) Write the XML code to display the output shown in Figure 1 using a Linear layout in Android.

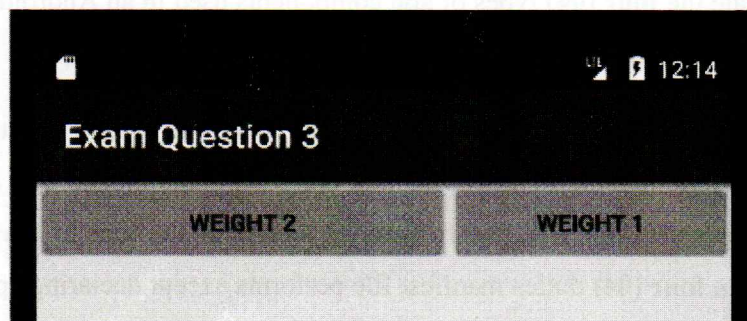


Figure 1: Desired output in the Android application

4)

- a) i) Determine the main difference between an **Adapter** and an **AdapterView** in Android.
ii) Write **five (05)** types of Adapters used in Android.
- b) “Most developers prefer to use JSON over XML for data exchange and storage.” Provide **five (05)** reasons to prove the above statement.
- c) i) Write **five (05)** distinct features of SQLite.
ii) Explain **three (03)** features given in part c) i).
- d) i) What is the inbuilt method provided by the **SQLiteDatabase** class to insert data into a database?
ii) Describe the parameters used in the method stated in part d) i).
iii) Cursors contain the result set of a query made against a database in Android. Determine the methods used by the Cursor class to manipulate its internal position in each of the following situations.
 - a. Move the cursor by a relative amount, forward or backward, from the current position.
 - b. Move the cursor to the next row relative to the current position.
 - c. Move the cursor to a specified position.

.....**End of the paper**.....