



**The Co-operative University of Kenya**

**END OF SEMESTER EXAMINATIONS JANUARY 2022**

**EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN STATISTICS AND  
INFORMATION TECHNOLOGY, BACHELOR OF SCIENCE COMPUTER SCIENCE/  
BACHELOR OF SCIENCE IN IT**

**COURSE CODE: BCSC 3158**

**UNIT TITLE: MOBILE APPLICATION DEVELOPMENT**

**DATE: JANUARY 2022**

**TIME: 2 Hours**

**INSTRUCTIONS**

**Answer question ONE (compulsory) and any other TWO questions**

**QUESTION ONE**

- a) Outline two benefits of using flutter framework in mobile application development. **(2 marks)**
- b) State three application execution permissions defined within Windows mobile devices. **(3 marks)**
- c) Outline the three concepts related to Android Event Management. **(3 marks)**
- d) Android is a powerful mobile operating system that supports many features, outline two of the features. **(2 marks)**
- e) Distinguish between <application> and <activity> tags as used in android manifest. **(2 marks)**
- f) The code below is meant to display the value of a button text property on a textView when the user clicks on the button, the id of the textView is tv1. Write the missing statements. **(2 marks)**

```

public class MainActivity extends Activity{
protected void onCreate(Bundle savedInstanceState){
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
Button fButton=(Button) findViewById(R.id.button1)
final String bv1=fButton.getText().toString();
    fButton.setOnClickListener(

);
} }

```

- g) Android Activity Life Cycle is best illustrated using callback activities. Explain two of the activities. **(4 marks)**
- h) Explain the two statements below found in android manifest file. **(4 marks)**
- ```

<action android:name="android.intent.action.MAIN" />
<category android:name="android.intent.category.LAUNCHER"/>

```
- i) Discuss two basic design consideration for designing an efficient mobile web application. **(2 marks)**
- j) Juliana wanted to develop an android application that was user friendly she realized that the use of menus would come in handy. Explain three types she could use. **(6 marks)**

## QUESTION TWO

- a) State the purpose of the following folders used in android application development:
- gen;
  - res/values; **(4 marks)**
- b) Explain the purpose of BTS in GSM network. **(2 marks)**
- c) John came across *Kotlin and RenderScripts* while studying mobile frameworks. Distinguish between the two frameworks. **(6 marks)**
- d) Explain the purpose of androidManifest.xml file as used in android applications. **(2 marks)**
- e) Explain the three concepts related to Android Event Management. **(6 marks)**

## QUESTION THREE

- a) State two components of the application framework found in android framework. **(2 marks)**
- b) Outline two software requirements you will need to set up an android programming environment. **(2 marks)**

- c) Explain two types of layouts that can be used to develop an android application. **(4 marks)**
- d) Distributed Database Security is integral to the design and function of a distributed database. State two important pieces to Distributed database security. **(2 marks)**
- e) Explain how Chip-Secured Data Access (C-SDA) can be used to achieve data confidentiality on mobile devices. **(4 marks)**
- f) The following code snippet was extracted from a string.xml file
 

```

        <string name="add_activity">Add Students</string>
        <string name="delete_activity">Delete Student</string>
      
```

Write a code for a layout that will display four buttons using the four values in the string.xml snippet shown above. **(6 marks)**

**QUESTION FOUR**

- a) Explain two functions of *AppBar* as used in android development. **(4 marks)**
- b) Explain two types of intents used in android programming **(4 marks)**
- c) Discuss two callback methods you are familiar with as used in event management. **(6 marks)**
- d) Using an appropriate layout write the XML code for activity\_main.xml file that will display a textView with text WELCOME TO CuK and a button with caption PROCEED. The id of the button should be btn1. **(6 marks)**

**QUESTION FIVE**

- a) Outline three key functions of the app bar in android applications. **(3 marks)**
- b) Explain three methods you would expect to find in a DatabaseHelper class. **(6 marks)**
- c) John an I.T student was given an assignment by his lecturer to develop a mobile application that can calculate the area of a rectangle when a user enters length and width in EditText fields and outputs the area of the rectangle through a TextView positioned below the submit button as shown in the figure below. Write the code for the activity\_main.xml file that will output the view in the figure below. **(11 marks)**

