



# THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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**MAIN EXAMINATION**

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**SEPTEMBER –DECEMBER 2021**

**FACULTY OF SCIENCE**

**DEPARTMENT OF COMPUTER SCIENCE**

**REGULAR PROGRAMME**

**CMT 314: MOBILE APPLICATION DEVELOPMENT**

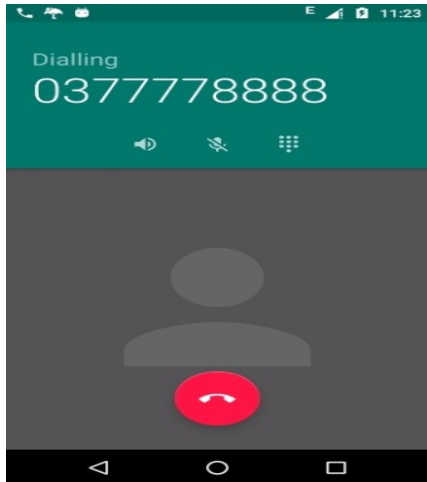
**Date: DECEMBER 2021**

**Duration: 2 Hours**

**INSTRUCTIONS: Answer Question ONE and any TWO Questions**

Q1.

- a) Write a snippet code for an application that adds a draggable thumb, a user can touch the thumb and drag left or right to set the value for current progress. **[6 Marks]**
- b) Using appropriate attributes, write a snippet code that would display the following toast message " *covid-19 is real, keep social distance*". **[3 Marks]**
- c) With the help of a diagram, describe the activity life cycle of an Android application **[5 Marks]**
- d) With suitable examples in an application, explain **TWO** types of intent **[4 Marks]**
- e) Write an android snippet code that would display the following output in an emulator. **[9 Marks]**



- f) State any **THREE** types of notification in android development. **[3 Marks]**

Q2.

- a) James is developing an application; he opts to use a webserver for data storage. Highlight **THREE** factors that may have informed his choice for data storage.

**[3 Marks]**

- b) Explain any **TWO** key roles of the Android manifest file **[4 Marks]**

- c) Mobile phone software development environment poses unique challenges as opposed to Computer software development environment, explain any **THREE** of the challenges mobile software developers. **[6 Marks]**

- g) Write an android application that would convert the following URL  
 “<https://elearning.cuea.edu/>” to an application

**[7 Marks]**

Q3.

- 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. **[8 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]**

Q4. a) Compare and contrast native mobile app design versus standard desktop app design. **[8 Marks]**

b) Assuming you have asked to do an interface for the following scenarios. What kind of the layout would be appropriate? Give a reason for your answer **[6 Marks]**

i) Tracking application

ii) Food order application

c) Highlight **FOUR** major concerns you have when developing for mobile phones as opposed to when developing for computers. **[4 Marks]**

d) Briefly explain any **TWO** types of layouts **[2 Marks]**

Q5.

a) Differentiate option menus from context menus. **[4 Marks]**

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 **[4 Marks]**

d) Discuss **FOUR** core components of an Android architecture and how they are put together to create a full-featured app. **[4 Marks]**

e) Highlight any **TWO** roles of firebase in application. **[2 Marks]**

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