

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

**THIRD YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE (COMPUTER SCIENCE)**

COMP 314: MOBILE APPLICATION PROGRAMMING

STREAM: R

TIME: 2 HRS

DAY: MONDAY [11.30AM – 13.30] DATE: 19/12/2022

THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

- (a) Briefly explain the following android application components (4 marks)
- (i) BroadcastReceiver
 - (ii) ContentProvider
 - (iii) Activity
 - (iv) Service.
- (b) Define an activity in android application development and give an example. (3 marks)
- (c) Enumerate the four android application components. (2 marks).
- (d) What are broadcast receivers in android development and give two examples of the same (3 marks)
- (e) Intent are messages used for activating components, briefly explain what is an intent object and further explain two types of intents. (5 marks)
- (f) Briefly explain the following android methods. (8 marks)
- (i) startService()
 - (ii) stopSelf()
 - (iii) START_NOT_STICKY
 - (iv) onBind()
 - (v) bindService()
 - (vi) stopService()
 - (vii) onDestroy()
 - (viii) onStartCommand()
- (g) Write android code to register a service in the android manifest file. (5 marks)

QUESTION TWO

- (a) Briefly explain the different states of an activity. (4 marks)
- (b) Briefly explain the commands needed to create APK in android. (4 marks)
- (c) Write a java program that shows three activities that are being managed in android. (12 marks)

QUESTION THREE

(a) A school has following rules for grading system:

- (i) Below 25 - F
- (ii) 25 to 45 - E
- (iii) 45 to 50 - D
- (iv) 50 to 60 - C
- (v) 60 to 80 - B
- (vi) Above 80 - A

Ask user to enter marks and print the corresponding grade, write android code to handle this task. (4 marks)

(b) Provide a well labelled diagram of a service lifecycle. (6 marks)

(c) write a java program that accepts user input from the keyboard and does the following operations sum, difference, division and product (4 marks)

(d) What do you understand by the following terms?

- (i) Layouts (2 marks)
- (ii) Fragment (2 marks)
- (iii) Views (2 marks)

QUESTION FOUR

(a) Provide a brief description of the resource types of the following directories

- (i) res/ (2 marks)
- (ii) Drawable/ (2 marks)
- (iii) Layout/ (2 marks)
- (iv) Anim/ (2 marks)

(b) Eliminate the errors in the following xml code (2 marks)

```
<?xml version="1.0" encoding="utf-8"?>
<resources
<color name="opaque_red">#f00
<string name="hello">Hello!</string>
</>
```

(c) Define a content URI? Write the correct format of a content URI. (2 mark)

(d) Write android code for the manifest file and activity file to produce the below output. (8 marks)



QUESTION FIVE

- (a) Write the xml code to produce a login page with the follow elements. (10 marks)
- textfield-name
 - textfield-password
 - submit button
 - cancel button.
- (b) Write java codes to show how the following classes are inherited from their main class in android programming: -
- (i) services (2 marks)
 - (ii) activity (2 marks)
 - (iii) broadcast receiver (2 marks)
 - (iv) content providers (2 marks)
 - (v) fragments