NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Faculty of Computing and Informatics

Department of Computer Science

QUALIFICATION: Bachelor of Computer Science Honours: Software Development	
QUALIFICATION CODE: 08BCSH	LEVEL: 8
COURSE: Mobile Application Development	COURSE CODE: MAD811S
DATE: July 2019	SESSION: 2
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY / SUPPLEMENTARY EXAMINATION QUESTION PAPER	
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INSTRUCTIONS

1. This is a closed book examination with three sections; A, B, and C.
2. Answer ALL questions in a separate writing booklet provided to you.
3. Total marks/scores per section are indicated in [], and () per question.
4. For Section C, answer each new question on a new page.
5. Use of any electronic devices is strictly prohibited.
6. NUST's examination rules and regulations apply.

SECTION A: [10 marks]

Select one correct option from each of the following:

1. APK stands for:
   A. Application Programming Kit
   B. Android Package
   C. Android Application Package
   D. Application Processing Kit

2. The following SDK package is mandatory before compiling an Android application:
   A. Intel or ARM system images
   B. SDK platform
   C. Support Repository
   D. SDK tools

3. Below is the correct order of activity lifecycle callback methods:
   A. onCreate() => onStart() => onStop() => onDestroy()
   B. onStart() => onResume() => onStop() => onDestroy()
   C. onStop() => onRestart() => onStart() => onResume()
   D. onResume() => onPause() => onStop() => onResume()

4. Sharing data across packages in Android is mostly done using the following object:
   A. Context
   B. Content Provider
   C. Shared Preferences
   D. Preferences

5. Which tool is used for debugging in Android studio?
   A. Logcat pane
   B. DumpChk
   C. Simulate Background Fetch
   D. Debug Navigator

6. When developing an app, which activity lifecycle callback method is ideal for configuring some user interface?
   A. onResume()
   B. onStart()
   C. onCreate()
   D. onStop()

7. The following dimension is recommended for text size:
   A. dp
   B. sp
   C. px
   D. in
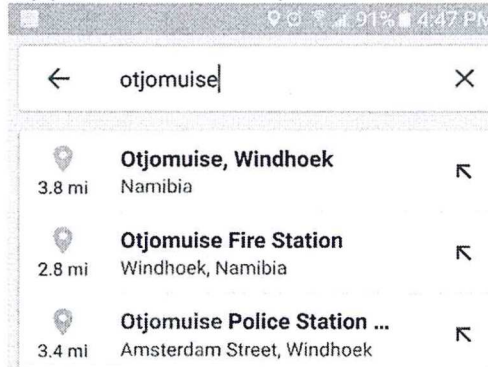
8. The following is NOT a code name for any version:
   A. Candy
   B. Donut
   C. Gingerbread
   D. Lollipop

9. Which of the following is NOT a type of intent?
   A. custom
   B. external
   C. explicit
   D. system

10. Which service specifically provides the example shown below?

   A. Place API
   B. Open Street Map
   C. Google Maps
   D. All of them

SECTION B: TRUE/FALSE   [10 marks]

State whether each of the following statements are True or False:

1. It is good practice to embed Google API keys directly in code.   [True/False]
2. Location API is synonymous to Places API.   [True/False]
3. Native apps are programmed in JavaScript and CSS.   [True/False]
4. The Android Virtual Device Manager helps set up a virtual device that will enable you to see all physical device states when an application is running.   [True/False]
5. Test frameworks such as JUnit and Espresso can be used in debugging.   [True / False]
6. A flat layout improves performance compared to a nested one.   [True/False]
7. *getExternalFilesDir()* caused saved app files to be removed at uninstallation .[True/False]
8. An intent is used to pass data between one activity to another.   [True/False]
9. ScrowView uses more memory compared to RecyclerView.   [True/False]
10. The Geocoder requires no backend services as everything it needs is part of the Android Framework.   [True/False]

SECTION C: [80 marks]

Answer all questions giving as much detail as possible.

Question C1
a) What are the causes of software bugs? (4 marks)
b) In detail explain how Android Studio may help you identify and fix those bugs. (6 marks)

Question C2 Explain the use of the following Android resources folders:
a) drawable (2 marks)
b) layout (2 marks)
c) mipmap (2 marks)
d) values (4 marks)

Question C3 What is the difference between the following methods:
a) startActivity() and startActivityForResult() (5 marks)
b) onStart() and onResume() (5 marks)

Question C4 Consider the following line of code:

mResultTextView = findViewById(R.id.*operation_result*);

Give a contextual meaning of what the following represents:
i. **mResultTextView** (2 marks)
ii. findViewById() (2 marks)
iii. R (2 marks)
iv. id (2 marks)
v. *operation_result* (2 marks)

Question C5
In what instances do you make use of a **locationRequest** object? In your explanation make reference to methods *setInterval()*, *setFastestInterval()*, and *setPriority()*. (10 marks)

Question C6 Compare and contrast native, web, and hybrid apps. (10 marks)

Question C7
i. With examples, explain what is meant by 'dangerous' permissions. (5 marks)
ii. Give an account of how an app can access 'dangerous' permissions (5 marks)

Question C8
i. How do you make use of Android string resources? (4 marks)
ii. With examples where necessary, what are the benefits of using string resources as opposed to hardcoding? (6 marks)

[END]