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MAIN EXAMINATION

AUGUST – DECEMBER 2018 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER AND LIBRARY SCIENCE

REGULAR PROGRAMME

CMT 314: MOBILE APPLICATIONS DEVELOPMENT

Date: DECEMBER 2018	**Duration: 2 Hours**
INSTRUCTIONS: Answer Question ONE and any other TWO Questions	

Q1. a)   Define the following
   i)   Mobile application   **(1mark)**
   ii) Mobile application development.   **(1mark)**

b)   What is an APK in Android programming? Outline the procedure used in creating an APK in Android studio   **(3marks)**

c)   Discuss 4 major advantages of Mobile applications from the business perspective   **(4marks)**

d)   Write a simple Java program to find if a number is a prime number or not
                                                               (4marks)

e)   Discuss the difference between a machine language, an assembly language and a high-level language   **(3marks)**

f)   Define an Operating system and List some popular operating systems in mobile devices. Explain the major responsibilities of an OS   **(3marks)**

g)   Android programming requires proficiency in Java. Explain the difference between a compiled language and an interpreted language giving examples. Clearly distinguish between a procedural language and an object-oriented language   **(3marks)**

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h) Define a WIMP interface. Explain the characteristics of a Graphical User Interface **(2marks)**

i) Explain the difference between the following sets of code in terms of functionality on an Android development environment **(6marks)**

SET 1:

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    this.webView = (WebView) findViewById(R.id.webview);

    WebSettings webSettings = webView.getSettings();
    webSettings.setJavaScriptEnabled(true);

    MyAppWebViewClient webViewClient = new MyAppWebViewClient(this);
    webView.setWebViewClient(webViewClient);

    webView.loadUrl("http://156.0.232.201/wildwatch/index.html");
}
```

SET 2:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent" android:paddingLeft="1dp"
    android:paddingRight="1dp"
    android:paddingBottom="1dp"
    tools:context=".MainActivity">
```

Q2. a) Compare and contrast the operational advantages of Android and any other renown operating system in the market today **(5marks)**

b) Explain three types of mobile applications and enumerate the advantages of the native applications known in the market today **(5marks)**

c) What are the fundamental differences between a featured phone and a smart phone **(3marks)**

d) Most companies have embraced the idea of BYOD (Bring Your Own Device). You are the Chief Systems Information Officer of one of these firms. You are asked to advise the board of directors on the advantages and disadvantages of this trend and vet between IOS and Android Platform-Discuss basing your answer on the advantages and disadvantages of each platform and their security design vulnerabilities. **(7marks)**

Q3. a) The WAP became a famous solution to most of the problems encountered in the evolution history of mobile applications. What was however the major notable shortcomings of the WAP in this regard and what solution was later developed? **(5marks)**

b) Explain the 5 major stages of evolution of the mobile applications with regard to their OS **(5marks)**

c) Explain 3 three types of mobile applications based on stature **(3marks)**

d) Based on their operation, mobile devices have undergone a major revolution. Since inception and with examples discus the major evolutionary changes that have happened over a time **(7marks)**

Q4. a) Explain the significance of the AndroidManifest.xml file in the Android Studio development environment **(3marks)**

b) Explain the procedure of setting the minimum and target APIs in Android Studio **(4marks)**

c) Explain the major differences between an open source and a proprietary operating system giving examples. Explain the difference between a source code and a bytecode **(3marks)**

d) From the following sets, select the list that contains only Java programming language keywords.

    A. class, if, void, long, int, continue
    B. goto, instanceof, native, finally, default, throws
    C. try, virtual, throw, final, volatile, transient
    D. strictpf, constant, super, implements, do
    E. byte, break, assert, switch, include **(4marks)**

e) What are the operational differences between IOS and Android systems **(6marks)**

Q5. a) What is Android Manifest File? Implement a code snippet with 2 permissions in the manifest file **(7marks)**

b) Write an Android code to implement a login application (both Java and XML files are required) **(10marks)**

c) Explain the significance of r.java in Android **(3marks)**

END

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