

University of Kelaniya – Sri Lanka
Centre for Distance & Continuing Education
Bachelor of Science (General) External
Third year second semester Examination - 2019
2025 March
Faculty of Science
COSC 37652 - Mobile Application Development

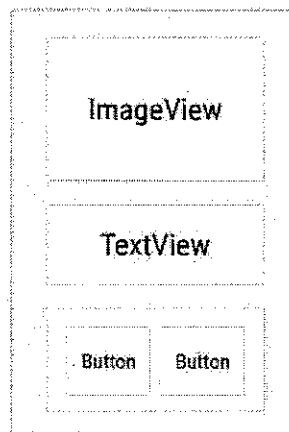
No. of Questions: **Four (04)**

No. of Pages: **Three (03)**

Time: **Two (02) hrs.**

Answer **ALL** questions.

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01. a) What is Mobile Computing? (10 Marks)
b) Name four mobile operating systems. (16 Marks)
c) Briefly explain two types of mobile application development. (10 Marks)
d) Why has Android become one of the most popular mobile development operating systems in the world? (10 Marks)
e) What is the role of the Android Manifest file in an Android application? (12 Marks)
f) Briefly explain the Android application build process. (12 Marks)
g) What is the Google Android SDK? List four (04) facilities included in Android SDK. (20 Marks)
h) State five widgets that can be used in Android development. (10 Marks)
02. a) List four (04) design decisions to be addressed when implementing an Android application (16 Marks)
b) What is the purpose of using Android intents? (10 Marks)
c) Briefly explain the two (02) types of intents using appropriate examples. (10 Marks)
d) Write down the structure of XML code for the below interface using the Linear layout. (20 Marks)



- e) Briefly explain the two (02) types of storage location in Android. (10 Marks)
 - f) Which location is most suitable for storing the private data of a mobile application? Justify your answer. (14 Marks)
 - g) What is the difference between VAR and VAL keywords in Kotlin language? (10 Marks)
 - h) What are the types of services in Android? (10 Marks)
- 03.
- a) What is dialog in Android? (10 Marks)
 - b) List down three (03) different types of dialog in Android Studio. (15 Marks)
 - c) Briefly explain the main components of dialog boxes in Android studio using an appropriate diagram. (20 Marks)
 - d) What is the activity life cycle in Android? Briefly explain the stages of the activity life cycle. (15 Marks)
 - e) Where can you use a layout-inflater? Explain with a scenario. (10 Marks)
 - f) The following code snippet represents a sample code of the Android Manifest file. Answer the questions (ii) and (iii) considering the content of the Android Manifest file.

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.navigation"
    android:versionCode="1"
    android:versionName="1.0">

    <uses-sdk
        android:minSdkVersion="8"
        android:targetSdkVersion="18" />

    <application
        android:allowBackup="true"
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme">
        <activity
            android:name="com.example.navigation.MainActivity"
            android:label="@string/app_name">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity android:name="com.example.navigation.SecondScreen">
        </activity>
    </application>

</manifest>
```

- i. What is API Level in Android? (10 Marks)
- ii. What is the minimum API level that the Android application supports? (10 Marks)
- iii. What are the two (02) activities in this Android application? (10 Marks)

4. a) Why fragments are important in mobile application development. (10 Marks)
b) What is a location-based service? (10 Marks)
c) List down three technologies that facilitate mobile location-based services. (15 Marks)
d) Briefly explain the following infrastructure elements of a location-based service. (25 Marks)
 i. Mobile device
 ii. Communication network
 iii. Positioning components
 iv. Service and application provider
 v. Data and Content provider
e) How do mobile devices identify GPS signals? (10 Marks)
f) What is a web service in Android development? (10 Marks)
g) What are user permissions? (10 Marks)
h) What are the permissions do you need to include to access Location-based Services? (10 Marks)

//***** End of the Question Paper ***** //

