(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

FOR THE DIPLOMA

IN

INFORMATION TECHNOLOGY

SPECIAL/SUPLEMENTARY EXAM

COURSE CODE: DIT 093

COURSE TITLE: MOBILE APPLICATION DEVELOPMENT

DATE: 02/08/2022 **TIME:** 11AM -1PM

INSTRUCTIONS TO CANDIDATES

- Answer **Questions ONE** and **ANY OTHER TWO**.

TIME: 2 Hours

Question One (24 Marks):

a) What do you understand by the term JDK? (2 marks)
b) Discuss the android operating system architecture (8 marks)
c) Why should we use mobile application technology? (4 marks)
d) Discus the function of the following files in an android application (8 marks)
  i. Main activity file
  ii. Manifest file
  iii. Strings file
  iv. Layout file

Question Two (18 Marks)

a) What is a fragment? (2 marks)
b) How is Grid layout different from Constraint layout manager? (2 marks)
c) What is an Activity? (2 marks)
d) Why would I (potentially) choose an Android phone over an iPhone? (6 marks)
e) Explain THREE (3) features of an android application (6 marks)

Question Three (18 Marks)

a) Carefully examine the MXL codes below and answer the following Questions.

```
Code Segment I
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/
android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="horizontal" >
</LinearLayout>

Code Segment II
<EditText android:id="@+id/edit_message"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:hint="@string/edit_message" />
```

  i. In which android folder do we find this file this file? (2 marks)
  ii. What do the code segments below help us achieve in code segment I? (3 marks)

```
android:layout_width="match_parent"
android:layout_height="match_parent"
```

  iii. What does the attribute "**wrap_ontent**" in the code segment below facilitate? (2 marks)

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
```

  iv. Explain the significance of the "**android:hint**" attribute. (2 marks)

b) Study the code segment below and use it to answer the question that follows:

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
<string name="app_name">My First App</string>
<string name="edit_message">Enter a message</string>
<string name="button_send">Send</string>
<string name="action_settings">Settings</string>
<string name="title_activity_main">MainActivity</string>
</resources>
```

      i.   Which file are we editing above?   (2 marks)

      ii.   Briefly explain what this code segment does for the App   (2 marks)

      iii.   What is the benefit exploited in (ii) above?   (2 marks)

c) Clearly sketch a Sample Output of the code snippet below: (3 marks)

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    tools:context=".MainActivity">

    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Message" />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send"/>

</LinearLayout>
```

Question Four (18 Marks):

a) Study the Java code below implemented to build a hotel reservation App and answer the question that follow:

```java
public void checkVacancy(View view){
        if (room.numGuests == 0){
                label.setText("Available");
        }else{
                label.setText("Taken");
        }
}
```

Explain what the code segment does.   (3 marks)

b) What is Delvic Virtual Machine?   (2 marks)

c) Briefly explain any four Exceptions supported in Android.   (8 marks)

d) With clear explanations, describe the following terms as used in Android Application Programming

      i.   .apk extension   (2 marks)

    ii.   APK format   (1 marks)

    iii.   .dex extension   (2 marks)

Question Five (18 Marks):

a) Android applications are widely used in a vast of areas. State and briefly explain FOUR areas where android applications are used. (8 marks)

b) Briefly discuss the android application life cycle (10 marks)