(K*nowledge for Development)*

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MASINDE MULIRO UNIVERSITY OF

SCIENCE AND TECHNOLOGY

UNIVERSITY EXAMINATIONS

2014/2015 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER

MAIN EXAMINATION

FOR THE DEGREE OF

BACHELOR OF SCIENCE COMPUTER SCIENCE

COURSE CODE: **CSC 465 E**

COURSE TITLE: **MOBILE APPLICATION PROGRAMMING**

DATE: **29th APRIL, 2015** **TIME:** **8.00AM-10.00AM**

INSTRUCTIONS TO CANDIDATES

Answer Question One in Section A and Any other TWO (2) Questions in Section B

TIME: 2 Hours

QUESTION ONE (30 Mks)

You have been hired by ABC INC, a mobile web development company providing solutions to its customers globally. You have been commissioned for an online Store website development project with near perfect mobile compatibilities.

Citing the likely challenges **explain:**

a. Why a desktop web programmer would have less design issues to worry about than a mobile web designer. (3 Mk)
b. Why it would be difficult to use the feature rich tabbed navigation and instead use the ordered list for linking to mobile web pages (3 Mk)
c. Why mobile web and desktop web programmers have different pages layout considerations. (4 Mk)
d. The structural and functional advantages presented by OMA's WAP 2.0 (4 Mk)
e. Why as a professional mobile web architect you would consider creating a backup mobile web copy in WML, and the design handicap of WML. (4 Mk)
f. What the XHTML tag below does. (2 Mk)

```
<?xml version="1.0" encoding="UTF-8" ?>
```

g. Any 5 XHTML rules that distinguish it from HTML (10 Mk)

QUESTION TWO (20 Mk)

i. 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" />
```

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

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

c. What does the attribute "**Wrap Content**" in the code segment below facilitate? (2 Mk)

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

d. Explain the significance of the "**android:hint**" attribute. (2 Mk)

e. Study the code segment below and use it to answer the question that follows:

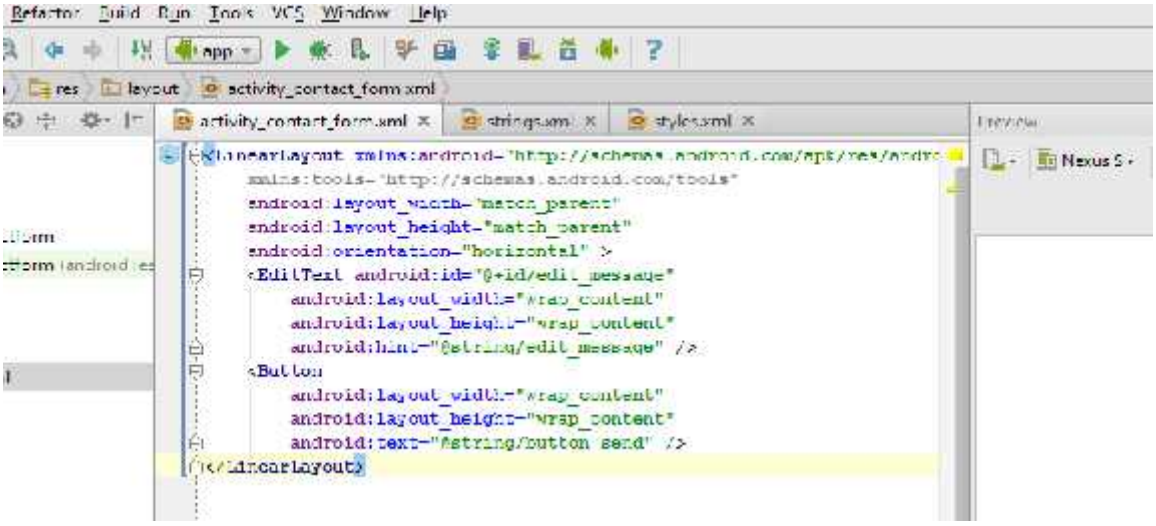
```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <string name="app_name">My First App</string>
    <string name="edit_message">Enter a message</string>
    <string name="button_send">Send</string>
    <string name="action_settings">Settings</string>
    <string name="title_activity_main">MainActivity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

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

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

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

iv. Clearly sketch a Sample Output of the code snippet below: (3 Mk)



f. Explain how you would run the app from the command line. (2 Mk)

QUESTION THREE (20 Mk)

i. Study the Java code below implemented to build a hotel reservation App and answer the questions that follow:

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

ii. Explain what the code segment does. (3 Mk)
iii. What is Delvic Virtual Machine? (2 Mk)
iv. Briefly explain any four Exceptions supported in Android. (8 Mk)
v. With clear explanations, describe the following terms as used in Android Application Programming

a. .apk extension (2 Mk)
b. APK format (1 Mk)
c. .dex extension (2 Mk)

QUESTION FOUR: (20 Mk)

i) What is an **Activity**? (2 Mk)
ii) Why would I (potentially) choose an Android phone over an iPhone? (6 Mk)
iii) Citing relevant examples, describe the Architectural components of an Android operating system. (10 Mk)
iv) Differentiate between Candy and clam shell mobile phone design. (2 Mk)

QUESTION FIVE (20 Mk)

i) Sketch the block output of the XHTML code below. (8 Mk)

```
<!-- Header placeholder -->
</div>
<div id="content">
<ol>
<li><a href="news.html">News</a><li>
<li><a href="products.html">Our Products</a></li>
<li><a href="customers.html">Our Customers</a></li>
<li><a href="about.html">About Us</a></li>
<li><a href="contact.html">Contact Us</a></li>
</ol>
</div><div id="footer">
<!-- Footer placeholder -->
</div>
</body>
```

ii) What modification to News would you make to assign the list item access key 3? (2 Mk)
iii) As good mobile web designers, we will need to provide description to our links on the home page to provide our readers with details of navigation. What modification can we make to this list item to provide description for our readers? (3 Mk)
Our Products
(Hint use span tag. Provide the following description: "Browse our product descriptions")

iv) What is the primary benefit provided by Caching a mobile web page? (2 Mk)
v) Explain with description what is meant by Server Side Adaptation (2 Mk)
vi) Briefly explain the 3 core techniques on which Responsive design is implemented (3 Mk)