Daffodil International University

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Final term Examination, Fall 2020 @ DIU Blended Learning Center

Course Code: CSE334 (Day), Course Title: Wireless Programming

Level: 3 Term: 3 Section: O-1, O-2, O-3, O-4, O-14

Instructor: MRN Modality: Open Book Exam

Date: Friday (11 December 2020) Time: 03:00 PM - 07:00 PM

Four hours (4:00) to support online open/case study based assessment Marks: 40

Directions:

- **Students need to go through the CASE STUDY shown in this exam paper.**
- **Analyze and answer specific sections based on your own thinking and work.**
- **Do not share as this will be treated as plagiarism by Blended Learning Center.**

Answer all the questions. Figures on the right-hand side indicate full marks.

Suppose, you have been asked to design an android application that will contain two activities named **LogInActivity** and **NextActivity**. In the **LogInActivity**, you will have two EditText components and one button. The First EditText component will suggest entering your name, and the second one will suggest entering your password. The button will be named the "**Login**" button. If you press the **Login** button, you will be moved to the **NextActivity** if the 3rd character of the password is 'w'. If the condition is not satisfied, a toast message will be generated as "**Login failed! Enter your password again!**"

The **NextActivity** will contain a listview of three buttons named the **"Calculate BMI", "Fahrenheit to Celsius",** and **"Celsius to Fahrenheit"** buttons which will be supported by corresponding fragments.

The **"Calculate BMI"** fragment will contain one TextView, two EditText, and a button as components. The TextView will show your student id. Out of the two EditText components, the first one will suggest entering your weight in kilograms, and the second one will suggest entering your height in inches. The button named "**Calculate**" will calculate the BMI as per the received inputs. The formula of BMI to be used is,

BMI = (weight in kg) / (height in meters) ^ 2

[Please Turn Over]

After clicking the "**Calculate**" button, the calculated result will be displayed in the toast message according to certain conditions. If the calculated value is greater than 25, it will show the "**Overweight**" message along with the score. Anything under 25 will show the "**Not Overweight**" message along with the score.

The **"Fahrenheit to Celsius"** fragment will contain one EditText, one button, and two TextViews as components. The EditText will suggest entering the temperature in Fahrenheit. The button named "**Calculate**" will calculate the celsius of the EditText value and will set the calculated result to the first TextView after the button click. The other TextView will show your student id. For Fahrenheit to Celsius Conversion, you will use the following formula:

$$C/5 = (F-32)/9$$

The **"Celsius to Fahrenheit"** fragment will contain one EditText, one button, and two TextViews as components. The EditText will suggest entering the temperature in celsius. The button named "**Calculate**" will calculate the Fahrenheit of the EditText value and will set the calculated result to the first TextView after the button click. The other TextView will show your student id.

1. Differentiate between view and viewgroup. Briefly describe the states of the activity life-cycle which you encounter during the abnormal interaction of the LogInActivity. **[6]**
2. Write down the XML code of all the activities & fragments separately. **[12]**
3. Write down the Java code of all the activities & fragments separately. **[12]**
4. How would you make this application better and more user friendly with necessary adjustments? Justify with the necessary coding demonstration. **[10]**

[Good Luck]