



SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

Higher National Diploma in Information Technology

Second Year, Second Semester Examination – 2016

HNDIT2417- Mobile Application Development

Instructions

Answer **five** questions only

All questions carry equal marks.

No. of questions : 6

No. of pages : 6

Time : **Three** hours

Question 01

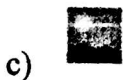
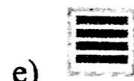
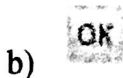
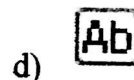
[Total 20 Marks]

- (i) Mention the code name of the latest Android version (02 Marks)
- (ii) List the main components in Android architecture (05 Marks)
- (iii) Draw a diagram to illustrate the source code compilation process of Dalvik Virtual Machine (05 Marks)
- (iv) Describe the four types of app components (08 Marks)

Question 02

[Total 20 Marks]

- (i) Name the following Android UI widgets (05Marks)

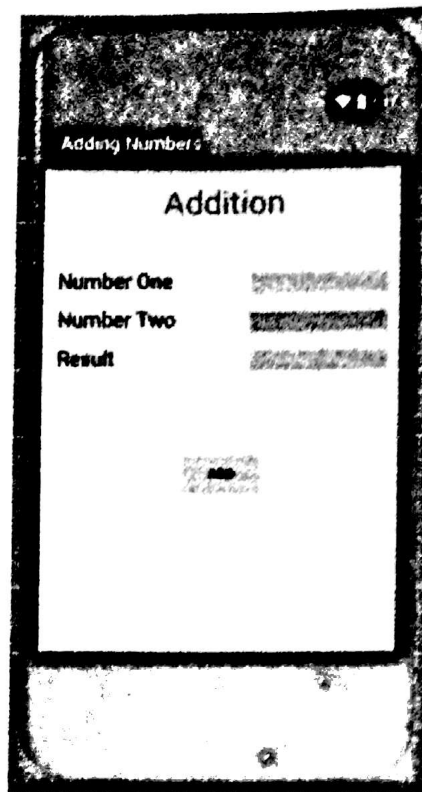


- (ii) What is the purpose of following properties of a Button widget? (05 Marks)

- a) id
- b) text
- c) background
- d) layout:gravity
- e) textColor

- (iii) The following interface has been created with Android studio. When the user enters two numbers and click the "ADD" button, total will be displayed on the textView.

Noted



MainActivity.java file is given below. Fill in the blanks of this code.

(10 Marks)

```

public class MainActivity extends AppCompatActivity {
    private EditText      firstNumber;
    private EditText      secondNumber;
    private TextView      addResult;
    private Button        btnAdd;

    double num1,num2,sum;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(.....(a).....activity_main);

        firstNumber= .....(b).....(R.id.txtNumber1);
        secondNumber= .....(c)..... (R.id.txtNumber2);
        addResult= .....(d)..... (R.id.txtResult);
        btnAdd= .....(e)..... (R.id.btnAdd);

        btnAdd.....(f).....(new View.OnClickListener() {

            public void onClick(View v) {
                num1 = Double.parseDouble(firstNumber.....(g).....toString());
                num2 = .....(h).....
                sum = .....(i).....
                addResult.setText(Double.toString(.....(j).....));
            }
        });
    }
}

```

Question 03**[Total 20 Marks]**

- ✓ (i) List three layout types available in Android Studio (03 Marks)
- (ii) Sketch the output of the following code (06 Marks)

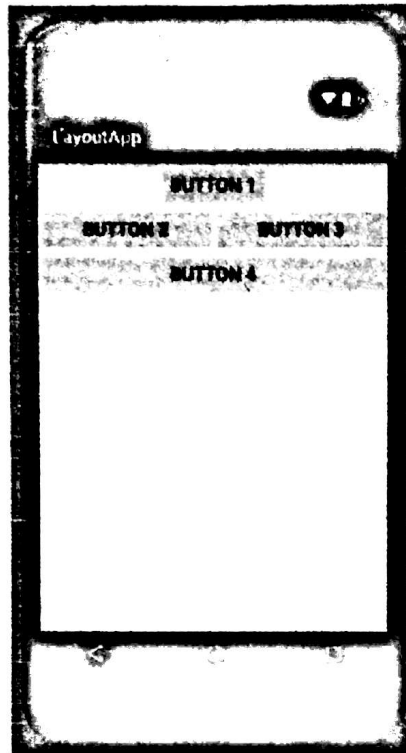
```
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical">

<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textAppearance="?android:attr/textAppearanceLarge"
android:text="User Login"
android:id="@+id/UserLogin"
android:layout_gravity="center" />

<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="horizontal">
<TextViewandroid:text="User Name"
android:layout_width="wrap_content"
android:layout_height="wrap_content" />
<EditText
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/username"
android:width="100dp" />
</LinearLayout>
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="horizontal">
<TextViewandroid:text="Pass word"
android:layout_width="wrap_content"
android:layout_height="wrap_content" />
<EditText
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/password"
android:inputType="textPassword"
android:width="100dp" />
</LinearLayout>
<Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/logging"
android:text="login"
android:layout_gravity="center" />
</LinearLayout>
```

(iii) Using the LinearLayout write the XML code to generate the layout shown below.

(11 Marks)



Question 04

[Total 20 Marks]

(i)

- a) What is an Android Adapter? (03 Marks)
- b) List three types of adapters available in Android (03 Marks)
- c) Write the code to create an ArrayAdapter that maps the data in a String array called fruitsArray into a list view called myList (04 Marks)

(ii)

- a) What is a Fragment? (02 Marks)
- b) Mention the two ways to add a Fragment to an Activity (02 Marks)
- c) The method Fragment.onCreateView() is used to assign a layout to a Fragment

@Override

```
public View onCreateView(LayoutInflater inflater, ViewGroup container,
    Bundle savedInstanceState) {
    return super.onCreateView(inflater, container, savedInstanceState);
}
```

Explain the three parameters inflater, container, savedInstanceState in onCreateView in the method

(06 Marks)

Question 05**[Total 20 Marks]**

- (i) List three data storage options available in Android (03 Marks)
- (ii) Mention four data types available in SQLite (04 Marks)
- (iii) Complete the following statement to create an SQLite database called 'InventoryDB'. (02 Marks)

db =(..... , Context.MODE_PRIVATE, null);

- (iv) Write the code to create the following Product table in SQLite (05 Marks)

Product_ID	Name	Price
P001	CD	25
P002	DVD	35
P003	8GB Flash Drive	1000

- (v) Write the code to insert data to the above product table through the interface given below (06 Marks)

Product Details

Product ID ← Edittext_ID
Name ← Edittext_Name
Price ← Edittext_Price
← Button_Add



Question 06

[Total 20 Marks]

(i)

- a) What is a Shared Preference in Android? (02 Marks)
- b) List two methods which can be used to create a new Shared Preference (03 Marks)
- c) What is the API used in Android to send SMS? (02 Marks)
- d) Write the statement to set permission in Android manifest file to send SMS (03 Marks)

(ii)

- a) What does JSON stands for? (02 Marks)
- b) Why JSON is used in Android? (03 Marks)

(iii)

- a) What is the package format used by Android operating system for distribution and installation of mobile apps? (02 Marks)
- b) List the three main steps for publishing an app in Google play store (03 Marks)