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 – 2017

HNDIT2417 Mobile Application Development

Instructions for Candidate:

Answer only **05 Questions**

No. of Questions: 06

No. of Pages : 06

Time: Three (03) hours

Q1

i. What is android? (03 Marks)

ii. Application is one component in android architecture. Name any other two components with examples. (03 Marks)

iii What is the purpose of Dalvik Virtual Machine? (04 Marks)

iv The Android framework includes four key services. Name them. (04 Marks)

v Briefly explain the followings: (06 Marks)

a) Android Activities

b) Android Intents

Q2

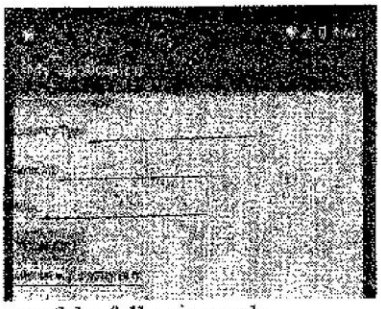
i. Name two types of Gravity in Android (02 Marks)

ii Fill the blank using suitable layout type for following statements (04 Marks)

...(a)... is a view group that creates list of scrollable item.

....(b)... is a view group that displays items in a two-dimensional, scrollable grid.

iii Write XML code to generate the following interface by using linear layout (06 Marks)



iv Sketch the output of the following code (08 Marks)

```
<RelativeLayout
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  >
  <TextView
            android:id="@+id/lblComments"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Comments"
            android:layout_alignParentTop="true"
            android:layout_alignParentLeft="true"
            />
      <EditText
            android:id="@+id/txtComments"
            android:layout_width="match_parent"
            android:layout_height="170dp"
            android:layout_alignLeft="@+id/lblComments"
            android:layout_below="@+id/lblComments"
            />
```

```
<Button
        android:id="@+id/btnSave"
        android:layout_width="125dp"
        android:layout_height="wrap_content"
        android:text="Save"
        android:layout_below="@+id/txtComments"
        android:layout_alignRight="@+id/txtComments"
        />
    <Button
    android:id="@+id/btnDelete"
    android:layout_width="125dp"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/btnSave"
    android:layout_alignBottom="@+id/btnSave"
    android:layout_alignParentLeft="true"
    android:text="Delete"
    />
</RelativeLayout>
```

Q3

i. Give two methods in the Android Activity Lifecycle. (02 Marks)

ii Following statements are related to activity states. Fill the blanks by using correct word. (02 Marks)

a) ……, the activity is at the top of the Activity Stack.

b) ……., the activity is visible to the user, but does not currently have focus (typically this activity is partially obscured by the current activity).

iii. The following program has been created to find the area of a Triangle. When a user enters height and length, and clicks "Cal Area" button, then answer will be displayed on text view. When a user clicks on "Help" button, program will be redirected to help page which is another activity called "Help". Fill the blanks in the following java code indicated by (a) to (h). (16 Marks)

```
public class Triangle extends AppCompatActivity {
  Button btnCalAreaT;
  EditText txtHeight;
  EditText txtLength;
  TextView txtvAns;
  Button btnHelp;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_triangle);

    btnCalAreaT= (....(a).....) findViewById(R.id.btnCal);
    txtHeight= .....(b).....(R.id.txtH);
    txtLength= (EditText) findViewById(R.id.txtL);
    txtvAns= (TextView) findViewById(R.id.txtvAns);
    btnHelp= (Button) findViewById(R.id.btnHelp)

    btnCalAreaT. ... (c).....(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
      double h= Double.parseDouble(txtHeight.getText().toString());
      double l=Double.parseDouble( ....(d).....getText().toString());
      double a= ..... (e).....;
      txtvAns. .....(f).....); } });
  btnHelp.setOnClickListener(new View.OnClickListener() {
```

```
@Override
 public void onClick(View v) {
Intent intent = new ...(g).....;
..... (h).....;
                } } ); } }
```

Q4

i. ArrayAdapter is one of Adapter type which is available in Android. When do you use ArrayAdapter? (04 Marks)

ii. Following code segment is used in construction of an Array Adapter. (06 Marks)

```
ArrayAdapter adapter =
new ArrayAdapter<String>(this, R.layout.ListView, StringArray);
```

Briefly explain three arguments in this constructor.

iii There are 2 ways to add a Fragment to an Activity. They are Layout File and Fragment Transaction. Briefly explain each. (05 Marks)

iv Following code segment is used to add a Fragment to an Activity at runtime. Fill the blanks. (5 Marks)

```
.....(a)... fm = .... (b).....
.....(c)..... ft = ...(d).... .beginTransaction();
  ft.replace(R.id.fragmentDisplay, frg);
   ft. ..... (d)....;
```

Q5

i. Give the name of the API useing for sending SMS? (01 Marks)

ii. Name the parameters with data types in "**public final void sendTextMessage ()**" method which is used in sending SMS. (03 marks)

iii Briefly explain Android **apk** file. (02 Marks)

iii What is JSON? (02 Marks)

iv In shared preference two methods are used to save data and view data using value-key pair. Name them separately. (04 Marks)

v. The following code segment is used to view two string type data values which are saved in shared preference. Fill the blanks (08 Marks)

```
... (a) ... sp = ... (b) .... ("mydata" ,Context.MODE_PRIVATE );
String get_sp_un = .. (c) ..... ("myUname", DEFAULT);
String get_sp_pw = ....(d) ... ("myPw",DEFAULT);
```

Q6

i Give two classes which provides all the functionality required for performing Data Manipulation Language (DML) and query operations on a SQLite database table. (04 Marks)

ii The following code shows how to create a SQLite database. (05 Marks)

```
db=openOrCreateDatabase("Shop", Context.MODE_PRIVATE, null);
```

Briefly explain the behavior of "**openOrCreateDatabase**".

iii Write code segment to DELETE the Item with the Itemno 5 from the Item table. (05 Marks)

iv Write code segment to view ItemName and ItemPrice of all records in Item table. (06 Marks)