SYCS (IV) / Android Devt

(2 ½ Hours) [Total Marks: 75]

N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

Q. 1   Attempt All (Each of 5Marks) (15M)
(a)   **Multiple Choice Questions**

1) The DalvikVM core libraries are a subset of which of the following?
   a. Java ME
   b. Java SE
   c. Java EE
   d. JAX-WS

2) Which of the following AsyncTask methods is NOT executed on the UI thread?
   a. onPreExecute()
   b. onPostExecute()
   c. publishProgress()
   d. onProgressUpdate()

3) What Activity method you use to retrieve a reference to an Android view by using the id attribute of a resource XML?
   a. findViewByReference(int id);
   b. findViewById(int id)
   c. retrieveResourceById(int id)
   d. findViewById(String id)

4) Which configuration file holds the permission to use the internet?
   a. Layout file
   b. Property file
   c. Java source file
   d. Manifest file

5) What does the following line of code achieve?
   Intent intent= new Intent(this, Success.class);
   a. Creates a hidden Intent
   b. Creates an implicit Intent
   c. Create an explicit Intent
   d. Starts an activity

(b)   **Fill in the blanks. Use following pool to answer questions. [apk, ListView, NotificationManager, Adapter, Cursor]**

1) _____ is a view group that displays a list of scrollable items.
2) _____ connects data to RecyclerView.
3) Queries always returns _____ object.
4) _____ is a zip file containing everything that the application needs to run on user's device.
5) _____ is the type of service provided by android that shows messages and alerts to user.

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(c) **Answer in 1 – 2 sentences**
1) State the purpose of radio button in android.
2) What do you mean by drawables?
3) How to store data using shared preferences?
4) Explain what you understand by the term transaction with respect to Database.
5) Define the term security with respect to android.

Q. 2   Attempt the following (Any THREE)   **(15M)**

(a) Develop an android application to help a Telephone company to compute bill using the following data:
   - Accept number of calls made by the user.
   - Accept number of SMS sent by the user.

[Assume per call rate is 0.5 and SMS rate is Rs. 1. The final bill should take care of 18%GST.] (Write only Java code).

(b) Define android and discuss the advantages of android.

(c) What is the purpose of TextView? Explain the following attributes of TextView control:
   - id
   - textColor
   - text
   - textStyle

(d) Write a note on the following controls. Give suitable example.
   - CheckBox
   - ToggleButton

(e) Discuss following callback methods with respect to activity:
   - onCreate()
   - onStart()
   - onResume()
   - onStop()
   - onDestroy()

(f) Develop an android application to print Toast message like in the example using DatePicker and TimePicker. Example: "Hi! Your cab booking is done as per your request 3 June 2018 at 9AM". (Write only Java code).

Q. 3   Attempt the following (Any THREE)   **(15M)**

(a) Consider you have a menu consisting of items red, green, blue. Write a method or provide a menu item click listener to change the background color respectively. [Write XML code for menu and the appropriate methods in Java.]

(b) Write a note on notification with respect to the following:
   - Definition
   - To create a notification builder
   - To set properties like content text, icon, title
   - Attaching actions
   - Issuing a notification.

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(c) Explain life cycle of service in android.

(d) Write a note on Alarm Manager along with example.

(e) In order to implement two factor authentication, an organization needs to develop an android application which will accept mobile number from user. On click of submit button display a message with the help of Snackbar that "OTP is sent on your number". [Write only JAVA code].
Also state the difference between Toast and Snackbar.

(f) What do you mean by material design in android? Explain the concept in detail.

Q. 4   Attempt the following (Any THREE)   (15)

(a) Write a short note on Shared Preferences.

(b) Discuss the Google provided   tools for advertisers the AdMob with respect to following points:
Concept, features and implementation.

(c) Explain following with respect to database along with suitable example:
- Insert
- Select
- Update
- Delete
- Cursor

(d) Discuss ACID properties of transaction.

(e) What is a content provider? How does it work?

(f) State the concept of performance. Discuss Memory monitor, CPU monitor, GPU monitor and Network monitor with respect to performance.

Q. 5   Attempt the following (Any THREE)   (15)

(a) Write XML code for the following GUI.
Name : [EditText]   (Use textview for Name)
Password : [EditText] (Use textview for Password)
Buttons : Submit and Cancel.

Use Relative Layout with proper attributes.

(b) How to perform back navigation in android? Provide one example.

(c) Develop an application to play a music file. Provide necessary steps for the same. [Write only Java code.]

(d) Explain following terms in 2-3 lines.

1) gradle
2) layout
3) Floating Action Button
4) ANR
5) manifest file

(e) Firebase, a set of tools for mobile and web app developers. Justify the statement and list some features of Firebase.