Q.P. Code: 36247

(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 5 Marks)** **(15M)**

(a) **Multiple Choice Questions**

1) During an Activity life-cycle, what is the first callback method invoked by the system?
   a. onStop()
   b. onStart()
   c. onCreate()
   d. onRestore()

2) Which of the following tools dumps system log messages including stack traces when the device or emulator throws an error?
   a. DDMS
   b. Logcat
   c. Console
   d. ADB

3) Which manifest file permission you should add to allow your application to read the device's address book?
   a. READ_ADDRESS_DATA
   b. READ_PHONE_STATE
   c. READ_PHONE_CONTACTS
   d. READ_CONTACTS

4) Android component that manages appearance and format on screen is called.
   a. fragment
   b. intent
   c. view
   d. layout

5) A type of service provided by android that shows messages and alerts to user is
   a. Content Providers
   b. View System
   c. Notification Manager
   d. Activity Manager

(b) **Fill in the blanks. Use the following pool to answer questions. [publishing, transaction, layout, anim, notification]**

1) _____ is a message which can be displayed to user outside the application's User Interface.

2) _____ is the resource folder which contains XML files and defines animations.

3) _____ defines the structure for a user interface in your app.

4) _____ is nothing but a sequence of operations performed as a single logical unit of work.

5) _____ is the general process making your application available to users.

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(c) **Answer in 1 – 2 sentences**
1) State the need of progress bar in android application.
2) What do you mean by style in android views?
3) What is focusable and clickable with respect to EditText?
4) Explain RecyclerView with respect to android.
5) Define the term loader with respect to loading data in android.

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

(a) Develop an android application to accept a username as "sys" and password as "admin" in suitable control and if it is valid then display a message "Welcome!" else display a message "Invalid Login!". (Write only Java code).

(b) Explain Architecture of android with a neat diagram.

(c) Discuss steps to make an application that prints "hello world" on an android device. State the purpose of Main Activity file and XML file.

(d) Explain the use of following controls in two three lines.
- AutoCompleteTextView
- Spinner

(e) List and explain various components of Android.

(f) Develop an android application to print Toast message like in the example using DatePicker and TimePicker. Example: "Hi! Your appointment is fixed on 3 June 2018 at 9AM" (Write only Java code).

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

(a) What do you mean by menu? How do you create the same? Provide one small XML example.

(b) List and discuss methods you need to implement in an AsyncTask class.

(c) Explain life cycle of service in android.

(d) Write a note on NotificationManager class along with example.

(e) Define the term Snackbar in android. Provide one example.

(f) Explain the concept of alarm manager with respect to the following points: Definition, characteristics, RTC and ERT.

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

(a) List and explain various ways to store data in android in 2-3 lines.

(b) Discuss AdMob in android application development with respect to following points: Concept, features and implementation.

(c) State and explain various features of SQLite database.

(d) Explain ACID properties of transaction.

(e) List and explain various methods of ContentProvider.

(f) As security is important for android devices, what are the best practices to implement security in an android app?

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

(a) Explain the purpose of following directories in android.

color/ , drawable/ , layout/ , raw/ , menu/

(b) Develop an android application to accept marks of 3 subjects. Maximum marks are to be considered as 100. Find the percentage and display the grade in TextView. [Write only JAVA code.]

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

(d) Define or explain following with respect to android in 2-3 lines.
1) gradle
2) layout
3) FloatingActionButton
4) ANR
5) manifest file

(e) What is Firebase? List various features of the same.

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