

- 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.

**TURN OVER**

(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?

**TURN OVER**

**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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