

(2 ½ Hours)

[Total Marks:75]

Please check whether you have got the right question paper.

- 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.

Q1. Attempt the following (any THREE): (15)

- (A) Write a short note on the 3G & 4G cellular technologies.
- (B) Explain the Android application components.
- (C) Diagrammatically explain the Architecture of Android Operating System.
- (D) What is Fragments and how we can create Fragment in an Android Application?
- (E) Describe the role of Intent in Android programming with an example.
- (F) Write a note on any one “Shopping App” popular in the Android App - Google Play Store.

Q2. Attempt the following (any THREE): (15)

- (A) What are Views and ViewGroups in Android? Define wrap_content and match_parent with respect to ViewGroups.
- (B) Write the XML code to add the following components in a Layout:
 - i. CheckBox View
 - ii. ImageButton View
 - iii. ImageView
 - iv. RadioButton View
 - v. Rating Bar
- (C) How to Embed a Web Browser in an Activity using WebView in an Android App?
- (D) Explain the button click event listener and callback method with an example.
- (E) What is SQLite database? How to provide the database connection using SQLite database in an Android application?
- (F) Create an android application add two numbers. Take input from EditText and display the answer using Toast on Button click. **(Write Java code only)**

Q3. Attempt the following (any THREE): (15)

- (A) Discuss on how to invoke the built-in Email application to send an email using intent to specific recipients.
- (B) Write a note on consuming web services using HTTP GET method.
- (C) Explain the working of Geocoding and Reverse Geocoding in an android application.
- (D) Demonstrate how to play an audio file using the MediaPlayer class?
- (E) Write a program to record video in an android application. **(Write Java code only)**

- (F) Write a Java code to send an SMS in an application using Intent.

Q4. Attempt the following (any THREE): (15)

- (A) Using the BluetoothAdapter class explain the working of Bluetooth in Android.
- (B) Discuss the use of AsyncTask<> class used with background threads.
- (C) Brief the Concept of Hardware Acceleration.
- (D) How does the Wi-Fi technology work in Android explain using WifiManager?
- (E) Discuss the Best Practices for Performance in an Android application.
- (F) Write a note on Cloud to Device Messaging using Google Firebase Cloud Messaging.

Q5. Attempt the following (any THREE): (15)

- (A) Discuss the following mobile platforms in one or two lines:
 - i. J2ME
 - ii. BlackBerry (BB)
 - iii. Android
 - iv. Windows Mobile
 - v. Windows Phone
- (B) Create an application that will pass username from one activity to the next activity, and on the next activity display a message on a TextView greeting the user a Welcome message.
(Write only Java code for both activities)
- (C) How to use Google Maps API to implement location based services in an application?
- (D) Write a note on the ShapeDrawable Object to dynamically draw a 2-D graphics.
- (E) Draw an explain the Android Activity life cycle model.
- (F) Explain the TelephonyManager class for managing the telephony services on the mobile devices.
