

(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.
