Graphic Era

End Term (Odd) Semester Examination December 2024

Roll no............................

Name of the Course and semester: MCA 3rd Sem
Name of the Paper: Mobile Application Development
Paper Code: TMC-302
Time: 3-hour

Maximum Marks: 100

Note:
(i) All the questions are compulsory.
(ii) Answer any two sub questions from a, b and c in each main question.
(iii) Total marks for each question is 20 (twenty).
(iv) Each sub-question carries 10 marks.

Q1.   (2X10=20 Marks)
a. Explain the key features of Android and describe its architecture with a diagram. (CO1)
b. Discuss the importance of the AndroidManifest.xml file. Explain how it contributes to application configuration with examples. (CO1)
c. Create a basic Android application that displays a "Welcome" message using a TextView. Explain the directory structure involved. (CO1)

Q2.   (2X10=20 Marks)
a. Describe the activity lifecycle in Android with a diagram and explain the role of each state. (CO2)
b. Define the role of an Intent in Android development. (CO3)
c. Develop a layout in Android Studio using a Linear Layout with an EditText, a Button, and a TextView. Write code to display the text entered in the EditText when the Button is clicked. (CO2)

Q3.   (2X10=20 Marks)
a. Explain the purpose of Event Listeners in Android? Provide examples of three commonly used listeners. (CO3)
b. Explain adapter and adapter views. (CO2)
c. Explain the purpose of AsyncTask in Android applications. Discuss its lifecycle methods (onPreExecute, doInBackground, onProgressUpdate, and onPostExecute) in detail. (CO4)

Q4.   (2X10=20 Marks)
a. Define the storage options available in Android. Explain how Shared Preferences are used with an example. (CO4)
b. Explain the architecture of SQLiteOpenHelper in Android. Discuss its advantages and how it simplifies database management. (CO4)
c. Develop an Android application that saves user details (name, age, and email) in an SQLite database and retrieves it using a RecyclerView. Provide key code snippets and explain your approach. (CO4)

Q5.   (2X10=20 Marks)
a. Why is testing important in Android application development? Explain the types of testing frameworks available with examples. (CO5)
b. Outline the step-by-step process of preparing and publishing an Android application to the Google Play Store. Discuss key challenges during the publishing phase. (CO5)
c. Explain the steps required to integrate Google Maps into an Android application. Discuss how to obtain and configure an API key for Google Maps. Write a program to display the current user location on a Google Map and add a marker at a specific latitude and longitude. (CO4)