	Parul University **Faculty of Engineering and Technology** **Parul Institute of Engineering and Technology** **CSE Department**

Subject Name	**Mobile App Development**	**A.Y**	**2025-2026**
Subject Code	**303105379**	**Semester**	**6th**

QUESTION BANK

Unit 1 – Android Operating System & Development Environment

1. What is Android?
2. Define Open Handset Alliance (OHA).
3. List any four features of the Android operating system.
4. What is an Android Application Package (APK)?
5. What is the purpose of Dalvik Virtual Machine (DVM)?
6. What is ART (Android Runtime)?
7. Name any three Android versions with code names.
8. What is an Android SDK?
9. What is the use of an AVD (Android Virtual Device)?
10. What is Gradle in Android development?
11. Explain the architecture of the Android operating system.
12. Compare Dalvik VM and ART.
13. What is the role of the Application Framework layer in Android?
14. Explain the importance of the Linux Kernel in Android.
15. Describe the Android development environment setup steps.
16. Explain the term “Android Emulator.”
17. What are Android Development Tools (ADT)?
18. Explain the directory structure of an Android project.
19. What is the use of the AndroidManifest.xml file?
20. Why is Android open source? Explain.
21. Create a sample structure of AndroidManifest.xml with minimum required components.
22. Write steps to create a new Android project in Android Studio.
23. Demonstrate how to configure an AVD for testing an app.
24. Write the directory structure of a basic Android app and describe any five directories.
25. Write a short note on "build.gradle" (module-level) with structure.

26. Describe how to use Logcat to debug an Android application.
27. Explain how to add permissions in AndroidManifest.xml with an example.
28. Show the steps to connect a real Android device for debugging.
29. Create a table comparing different Android versions and their key features.
30. Explain how app compilation works in Android using Gradle.
31. Analyze the advantages and challenges of using Android as an open-source mobile OS.
32. Compare the overall performance of Android when using Dalvik vs ART with examples.
33. How does Android ensure application sandboxing and security?
34. Evaluate the importance of each layer in Android architecture with an example.
35. Explain the life cycle of an Android project build process (Compile → Dex → APK → Install).
36. Analyze the role of the Manifest file in app permissions and security.
37. Discuss how Android manages memory and processes using LMK (Low Memory Killer).
38. Evaluate the impact of ART adoption in Android 5.0+ on performance and battery life.
39. How does Android Studio integrate Gradle for dependency management?
40. Explain how Google Play Store verifies and publishes an APK (Signing → Bundle → Deployment).

Unit 2 – Android Components & Resource Handling

1. What is an Activity in Android?
2. Define Context in Android.
3. What is an Intent?
4. What is an implicit intent?
5. What is a Service in Android?
6. Define Broadcast Receiver.
7. What are Android resources?
8. What is a String resource file?
9. What is a Drawable resource?
10. Define Styles in Android.
11. Explain the types of Intents with examples.
12. Describe the Activity lifecycle with a neat diagram.
13. What is the difference between Activity and Service?
14. Explain the purpose of a Broadcast Receiver with an example.
15. How does Android manage resources using the R.java file?
16. Explain the role of the colors.xml file.
17. What is a Theme? How is it applied to an Activity?
18. Explain the use of drawable selectors in Android.
19. What is Localization in Android?

20. Describe the steps to provide multiple language support.
21. Write a code snippet to create and start an explicit intent.
22. Write a code example of an implicit intent to open the dialer.
23. Create a simple Broadcast Receiver that listens for battery low events.
24. Design a layout that uses string resources instead of hard-coded text.
25. Write XML code for defining app colors in colors.xml.
26. Demonstrate how to apply a custom theme to a single Activity.
27. Write code to start a background Service.
28. Create and apply a custom style using styles.xml.
29. Write steps to create and register a Broadcast Receiver in Manifest.
30. Write a code snippet for passing data between Activities using Intent.
31. Compare Activity, Service, and Broadcast Receiver with real-life examples.
32. Analyze the importance of Context in memory management and component loading.
33. Differentiate between startService() and bindService() with use cases.
34. Evaluate the role of Intent Filters in controlling app behavior.
35. Discuss resource management in Android and its importance in reducing APK size.
36. Explain theme inheritance in Android with an example.
37. Compare various Drawable types (Shape, Bitmap, Layer, State List).
38. Analyze how Localization enhances user experience in global applications.
39. Discuss how resources are selected based on device configuration (dpi, locale, orientation).
40. Evaluate the interaction between components when launching an Activity through a Broadcast Receiver.

UNIT 3 – Android User Interface Elements & Layouts

1. What is UI in Android?
2. Define UX in Android application design.
3. What is a Layout in Android?
4. What is LinearLayout?
5. Define RelativeLayout.
6. What is ConstraintLayout?
7. What is a TextView widget?
8. What is the purpose of a Button widget?
9. Define Dialog Box.
10. What is a Menu in Android?
11. Explain Material Design principles.
12. Explain the difference between UI and UX with examples.

13. How does LinearLayout manage components?
14. Explain the working of RelativeLayout with an example.
15. What is the difference between FrameLayout and AbsoluteLayout?
16. What is a Constraint in ConstraintLayout?
17. Explain the purpose of RecyclerView in Android UI.
18. Describe different types of Android Dialogs.
19. Explain Option Menu and Context Menu with examples.
20. What are View Properties (padding, margin, gravity)?
21. Write XML code to create a LinearLayout with two Buttons.
22. Create a layout using RelativeLayout with TextView below Button.
23. Write XML code for a login form using ConstraintLayout.
24. Create an AlertDialog with positive and negative buttons.
25. Write code to dynamically add a TextView to a layout in Java/Kotlin.
26. Write XML code for a CardView with an image and title text.
27. Write code to create an Options Menu in an Activity.
28. Implement a Context Menu on a ListView.
29. Write code to use Material Button in a layout.
30. Write XML snippet for ScrollView containing multiple TextViews.
31. Compare LinearLayout, RelativeLayout, and ConstraintLayout in detail.
32. Analyze how ConstraintLayout improves performance in complex designs.
33. Discuss the importance of UI/UX for mobile app success.
34. Evaluate the role of Material Design in modern Android applications.
35. Compare different types of Dialogs with real-life examples.
36. Examine differences between ListView and RecyclerView.
37. Discuss the importance of Dynamic Layout creation in Android apps.
38. Analyze the importance of using proper UI widgets for accessibility.
39. Evaluate how menus (options & context) improve navigation experience.
40. Explain the overall UI rendering process in Android with flow.

UNIT 4 – Working With Views & Fragments

1. What is a View in Android?
2. What is a ListView?
3. Define RecyclerView.
4. What is a GridView?
5. What is a WebView in Android?
6. Define ScrollView.

7. What is a Fragment?
8. What is FragmentManager?
9. Define FragmentTransaction.
10. What is an Adapter in Android?
11. Explain the difference between ListView and RecyclerView.
12. Describe the purpose of ViewHolder in RecyclerView.
13. Explain the lifecycle methods of a Fragment.
14. What is CardView? Explain its purpose.
15. Explain how WebView loads external webpages.
16. Explain how ScrollView works and when it should be used.
17. Describe how Adapter connects data with UI components.
18. Explain the role of LayoutManager in RecyclerView.
19. Explain Fragment backstack with an example.
20. Explain the use of FragmentContainerView.
21. Write code to display a webpage using WebView.
22. Create a RecyclerView with a custom Adapter and ViewHolder.
23. Write XML code to create a GridView with 3 columns.
24. Implement a ScrollView layout with multiple TextViews.
25. Create a CardView displaying an image and a title.
26. Write code to switch between two fragments using FragmentManager.
27. Implement ListView with an ArrayAdapter.
28. Write code to load local HTML in WebView.
29. Create a Fragment class with onCreateView() method.
30. Implement a RecyclerView with LinearLayoutManager and custom layout.
31. Compare ListView, GridView, and RecyclerView in detail.
32. Analyze why RecyclerView is faster and more efficient than ListView.
33. Discuss the advantages of using Fragments over Activities.
34. Evaluate the importance of using CardView in modern UIs.
35. Compare Fragment lifecycle with Activity lifecycle.
36. Analyze FragmentManager vs FragmentTransaction roles.
37. Evaluate when to use WebView and when not to use it in app development.
38. Discuss common challenges while using RecyclerView and how to fix them.
39. Explain how adapters help in reusability and flexibility of UI components.
40. Analyze the role of Fragments in responsive tablet/mobile UI design.