

**MSc Sem.-2 Examination****410****Computer Science****Time : 2-30 Hours]****May-2025****[Max. Marks : 70**

Q:1 (A) Explain the process of creating your first Android app. Discuss the roles of Java, Android Studio, and the project layout in Android Studio. (7)

Q:1 (B) Discuss the Android activity lifecycle and its callback methods. How do these lifecycle methods help in managing the state of an app? (7)

OR

Q:1 (A) What are the different user input controls in Android? Explain how to implement buttons, spinners, and checkboxes in an app. (7)

Q:1 (B) What are background tasks in Android? Explain the difference between synchronous and asynchronous tasks. (7)

Q:2 (A) What are the differences between ScrollView, ListView, and RecyclerView in Android? How do you implement and manage performance for each? (7)

Q:2 (B) Describe the different types of menus in Android. How do you implement and handle menu item clicks? (7)

OR

Q:2 (A) What are the accessibility considerations in Android development? How do you ensure that your app is accessible to users with disabilities? (7)

Q:2 (B) How do you connect your Android app to the internet? Discuss the use of permissions, building URIs, and parsing JSON in Android. (7)

Q:3 (A) Explain the role of AsyncTask in handling background tasks in Android. What are its limitations and how do you work around them? (7)

Q:3 (B) What are Broadcast Receivers in Android? Explain their role, lifecycle, and security considerations. (7)

OR

Q:3 (A) Describe the concept of services in Android. What is the difference between an activity and a service, and when would you use each? (7)

Q:3 (B) Explain how AlarmManager can be used for triggering and scheduling tasks in the background. What optimizations can be made to enhance battery (7)

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efficiency?

- Q:4 (A) Compare internal and external storage in Android. Discuss privacy, security, and encryption considerations when storing data. (7)
- Q:4 (B) What are libraries in Android development? How do you use them to extend the functionality of your app? (7)

OR

- Q:4 (A) Discuss the role of widgets in Android. When should you use them, and how can you implement them? (7)
- Q:4 (B) Describe the process of publishing an Android app. Discuss the steps involved in making and signing the APK and the guidelines for publishing to Google Play. (7)

Q:5 True/False Attempt any seven out of Twelve (Each carries 2 Marks) (14)

- 1 Android development requires knowledge of only Java programming.
- 2 In Android development, the Android Virtual Device (AVD) is used to simulate different Android devices for testing purposes.
- 3 The Android manifest file is not necessary when creating an Android app.
- 4 Android provides only one type of menu, the options menu, for handling user actions.
- 5 Material Design focuses on providing visual aesthetics and a consistent user experience across Android devices.
- 6 Screen readers are used to assist users with visual impairments by reading out text and providing audio feedback.
- 7 Synchronous tasks in Android are executed on the UI thread, which may cause the app to become unresponsive.
- 8 The AsyncTask class is useful for performing tasks in the background without blocking the UI thread.
- 9 A notification in Android is used to alert users about an event that is outside the app's main interface.
- 10 AlarmManager is the preferred tool for scheduling background tasks that require exact timing.
- 11 Internal storage in Android refers to storing data in files that are accessible only to your app.
- 12 In Android, the permissions model allows apps to request only those permissions that are essential for their functionality.