

B.Sc Sem.-6 (Rep) Examination
CC 309

Computer Science
September-2024

Time : 2-30 Hours]

[Max. Marks : 70]

Q1(A) Describe the Android Activity lifecycle, explaining what happens in each state and how the lifecycle affects the behavior of an app. (7)

Q1(B) What are the differences between explicit and implicit intents? Provide examples of when you would use each and explain how data is passed between activities using intents. (7)

OR

Q1(A) Explain the role of the AndroidManifest.xml file in an Android application. Discuss at least three key components or declarations that must be included in this file. (7)

Q1(B) Compare and contrast RecyclerView and ListView. What are the advantages of using RecyclerView, and in what scenarios might ListView still be useful? (7)

Q2(A) What is a ViewModel in Android, and how does it help in managing UI-related data? Discuss its role in the context of the MVVM (Model-View-ViewModel) architecture. (7)

Q2(B) Explain the concept of Broadcast Receivers in Android. How can they be used to listen for system-wide broadcast announcements, and what are the potential security concerns? (7)

OR

Q2(A) Describe the difference between a started service and a bound service in Android. Provide an example use case for each type. (7)

Q2(B) How do you create and interact with an SQLite database in Android? Write a sample code snippet to demonstrate how to insert, update, and delete records. (7)

Q3(A) What are Content Providers in Android, and why are they important? Provide an example of how a Content Provider can be used to share data between applications. (7)

Q3(B) Compare and contrast different Android layout types (e.g., LinearLayout, RelativeLayout, ConstraintLayout). Discuss the benefits and drawbacks of each with examples. (7)

OR

Q3(A) Explain the use of AsyncTask in Android for background processing. What are its limitations, and why might it be better to use alternatives like Kotlin Coroutines or WorkManager? (7)

Q3(B) What are SharedPreferences in Android, and how are they used to store user preferences? Write a code snippet to demonstrate saving and retrieving data from SharedPreferences. (7)

Q4(A) How does Android handle app permissions? Discuss the changes introduced with Android 6.0 (Marshmallow) and how they affect the way permissions are requested and managed. (7)

Q4(B) Describe how to create and manage notifications in Android. Provide an example of how to create a notification with a custom layout and actions. (7)

Q4(A) What is Gradle in the context of Android development? Discuss its role in the build process, and explain how to manage dependencies and create build variants. (7)

Q4(B) Explain how multithreading works in Android. Discuss the challenges of updating the UI from a background thread and how to overcome these challenges. (7)

Q5 MCQ Attempt any seven out of twelve.(2 Marks each) (14)

- 1) Which of the following is not a component of the Android architecture?
A) Linux Kernel B) Libraries C) Android Runtime D) Windows Manager
- 2) What is the AndroidManifest.xml file used for?
A) Defining the UI B) Declaring the app's components C) Storing data locally
D) Managing app resources
- 3) Which method is called when an activity first starts?
A) onStart() B) onCreate() C) onResume() D) onPause()
- 4) What is an Intent in Android?
A) A background process
B) A message-passing mechanism
C) A database query
D) An activity lifecycle method
- 5) What is the primary purpose of a Content Provider in Android?
A) Displaying user interfaces
B) Managing UI interactions
C) Managing access to structured data
D) Handling network operations
- 6) Which class is used to create a new thread in Android?
A) Activity B) AsyncTask C) Thread D) Handler
- 7) Which of the following is not a valid Android component?
A) Activity
B) Service
C) Fragment
D) BroadcastReceiver
- 8) What is the role of Dalvik in Android?
A) It's the hardware layer
B) It's a virtual machine
C) It handles graphics processing
D) It's a database engine
- 9) Which Android component is responsible for receiving and handling system-wide broadcast announcements?
A) Activity
B) Service
C) BroadcastReceiver
D) ContentProvider
- 10) Which method is used to start an activity for which you would like a result when it finishes?
A) startActivityForResult()
B) startActivityForResult()
C) onActivityResult()
D) finishActivity()
- 11) What is the purpose of a ViewGroup in Android?
A) Managing application lifecycle
B) Holding other UI components
C) Interacting with the filesystem
D) Handling background processes
- 12) Which of the following is used to handle navigation in Android?
A) LayoutInflator
B) NavigationController
C) ActivityManager
D) ViewPager