

B.Sc Semester-6 Examination**CC 309****Computer Science****April-2024****Time : 2-30 Hours]****[Max. Marks : 70**

Q1(A) Describe the architecture of the Android operating system, highlighting its key components and their functionalities. How do these components interact to provide a seamless user experience? (7)

Q1(B) Explain the significance of the Android Software Development Kit (SDK) in the context of Android application development. Discuss its major components and how developers utilize them in the creation of Android apps. (7)

OR

Q1(A) Compare and contrast the Android development environment with other mobile platforms such as iOS and Windows Mobile. Highlight the key differences in terms of programming languages, development tools, and app distribution mechanisms. (7)

Q1(B) Discuss the role of the Android Virtual Device (AVD) in the development and testing of Android applications. How does it simulate various Android devices, and what are the benefits of using AVDs during the development lifecycle? (7)

Q2(A) Explain the concept of Activities and Intents in Android application development. Provide examples to illustrate how Activities manage user interface components and how Intents facilitate communication between different components of an Android app. (7)

Q2(B) Describe the Android application lifecycle, including the various states an application can be in and the transitions between these states. How does understanding the application lifecycle help developers in designing robust and responsive Android applications? (7)

OR

Q2(A) Discuss the importance of layouts and views in Android user interface design. Explain the role of XML-based layout files and how developers can use them to create visually appealing and responsive user interfaces for their Android applications. (7)

Q2(B) Describe the Android manifest file and its significance in Android application development. What information does the manifest file contain, and how does it influence the behaviour of an Android application? (7)

Q3(A) Describe the fundamental components of an Android user interface and explain their roles in creating a cohesive user experience. (7)

Q3(B) Discuss the significance of layout managers in Android UI development. Provide examples of commonly used layout managers and explain when each is best suited for different UI designs. (7)

OR

Q3(A) Explain the concept of views in Android UI development. Discuss at least three types of views and their respective purposes in creating interactive user interfaces. (7)

Q3(B) Compare and contrast the RelativeLayout and LinearLayout layout managers in Android. Discuss the advantages and disadvantages of each, providing scenarios where one might be preferred over the other. (7)

Q4(A) Explain the concept of resource qualifiers in Android development and how they are used to customize UI elements for different device configurations. Provide examples of resource qualifiers and describe their impact on UI design. (7)

Q4(B) Describe the purpose and functionality of the Android Support Library in UI development. Discuss why it is essential for developers and provide examples of common features or components provided by the Support Library. (7)

OR

Q4(A) Explain the role of Android APIs in the development of Android applications. Provide examples of commonly used APIs and describe their functionalities. (7)

Q4(B) Discuss the significance of the Android SDK (Software Development Kit) in utilizing Android APIs. Explain the components of the SDK and their roles in the development process. (7)

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

- 1) What is Android?
 - A) A type of mobile device
 - B) An operating system
 - C) A programming language
 - D) A hardware manufacturer
- 2) Who developed the Android operating system?
 - A) Apple Inc.
 - B) Google Inc.
 - C) Microsoft Corporation
 - D) Samsung Electronics Co., Ltd.
- 3) Which of the following is NOT a characteristic of Android?
 - A) Open-source
 - B) Closed ecosystem
 - C) Customizable
 - D) Multi-tasking
- 4) What is the main software development kit (SDK) used for Android development?
 - A) iOS SDK
 - B) Android Studio
 - C) Visual Studio
 - D) Eclipse
- 5) Which file extension is used for Android application packages?
 - A) .apk
 - B) .exe
 - C) .ipa
 - D) .dmg
- 6) What is the name of the virtual device used for testing Android apps on a computer?
 - A) AVD (Android Virtual Device)
 - B) VDI (Virtual Device Interface)
 - C) AVM (Android Virtual Machine)
 - D) VMD (Virtual Mobile Device)
- 7) Which component of Android handles the user interface?
 - A) Activity
 - B) Service
 - C) BroadcastReceiver
 - D) ContentProvider
- 8) What is the purpose of Intents in Android?
 - A) To perform background tasks
 - B) To store persistent data
 - C) To represent an operation to be performed
 - D) To manage the application lifecycle
- 9) Which permission is required to access the internet in an Android app?
 - A) INTERNET
 - B) ACCESS_NETWORK_STATE
 - C) ACCESS_WIFI_STATE
 - D) ACCESS_FINE_LOCATION
- 10) Which component is used for performing long-running operations in the background?
 - A) Activity
 - B) Service
 - C) BroadcastReceiver
 - D) ContentProvider

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- 11) Which database management system is commonly used in Android applications?
A) MySQL B) SQLite C) MongoDB D) PostgreSQL
- 12) What is the AndroidManifest.xml file used for?
A) Storing user data
B) Defining the application's user interface
C) Declaring the application's components and their permissions
D) Handling runtime errors

BEST OF LUCK

