Unit-1: Concepts of Mobile Computing

1.1 Fundamentals of Mobile Computing:

Short Questions:

1. What is the difference between fixed and wireless networks?
2. Explain the concept of multiplexing in mobile computing.
3. What is modulation, and how does it relate to wireless communication?
4. Define spectrum in the context of mobile communication.
5. Briefly explain Bluetooth technology.
6. What is Wireless Application Protocol (WAP), and what are its key components?
7. What are Mobile Agents in mobile computing, and how do they work?

Long Questions:

1. Compare and contrast fixed and wireless networks in terms of their advantages and disadvantages.
2. Describe the principles of multiplexing and provide examples of its use in mobile communication.
3. Explain how modulation techniques are used to transmit data wirelessly.
4. Discuss the significance of the radio spectrum and its allocation in wireless communication.
5. Provide an overview of Bluetooth technology, its applications, and its key features.
6. Describe the architecture and working of Wireless Application Protocol (WAP).
7. Explain the concept of Mobile Agents and their role in mobile computing.

1.2 Introduction to Android:

Short Questions:

1. What is the history of the Android operating system?

2. Define Android and its key features.

3. What is an API framework in the context of Android?

4. How does Android support app development through its API framework?

Long Questions:

1. Trace the historical development of the Android operating system and its major milestones.

2. Explain the fundamental concepts and features of the Android operating system.

3. Describe the role and significance of the API framework in Android app development.

****Unit-2: Setting up Android Environment****

2.1 Android Emulator:

Short Questions:

1. What is the purpose of setting up JDK and Android Studio for Android development?
2. Explain the role of the Android SDK manager.

Long Questions:

1. Describe the steps to set up JDK and Android Studio for Android development.
2. Explain the functionality of the Android SDK manager in the Android development environment.

2.2 Creating Android Virtual Device (AVD):

Short Questions:

1. What is an Android Virtual Device (AVD), and why is it used in Android development?

Long Questions:

1. Explain the concept of Android Virtual Device (AVD) and its importance in Android app testing and development.

2.3 Creating First App:

Short Questions:

1. What are the main components of an Android app?
2. Define an Activity in Android app development.
3. What is a Layout in the context of Android app design?

Long Questions:

1. Describe the key components of an Android app and their roles.
2. Explain the concept of an Activity and its significance in Android app development.
3. Discuss the role of Layout in designing the user interface of an Android app.

**Unit-3: XML (Extensible Markup Language) **

3.1 Characteristics and Use of XML:

Short Questions:

1. What are the characteristics of XML?
2. Explain the primary use of XML in mobile computing.

Long Questions:

1. Discuss the characteristics of XML and its significance in data representation.
2. Describe the various applications and use cases of XML in mobile computing.

3.2 XML Syntax (Declaration, Tags, Elements):

Short Questions:

1. What is an XML tag?
2. Define XML elements.

Long Questions:

1. Explain the syntax of XML, including the concepts of tags and elements.
2. Provide examples of XML tags and elements used in mobile computing.

3.3 Root Element, Case Sensitivity:

Short Questions:

1. What is the root element in an XML document?
2. Why is case sensitivity important in XML?

Long Questions:

1. Describe the role of the root element in an XML document structure.

2. Explain the significance of case sensitivity in XML and its implications for parsing and processing XML documents.

3.4 XML Document:

Short Questions:

1. What are the main sections of an XML document?

2. Define the Document Prolog Section in XML.

Long Questions:

1. Discuss the structure of an XML document, including its main sections.

2. Explain the purpose and components of the Document Prolog Section in XML.

3.5 XML Declaration and Rules of Declaration:

Short Questions:

1. What is an XML declaration?

2. Are there any rules that govern XML declarations?

Long Questions:

1. Explain the concept of an XML declaration and its role in an XML document.

2. Describe the rules and guidelines for creating XML declarations.

Unit-4: Creating a Basic App

4.1 Basic App Using Android Studio:

Short Questions:

1. What are the steps to create a new Android project in Android Studio?
2. How do you write a message and run a basic Android app?
3. Name the different components of an Android app.

Long Questions:

1. Describe the step-by-step process of creating a new Android project in Android Studio.
2. Explain how to write a message and run a basic Android app, and discuss the roles of its components.

4.2 Dalvik Virtual Machine (DVM):

Short Questions:

1. What is the Dalvik Virtual Machine (DVM) in Android?
2. How does the DVM differ from a traditional JVM (Java Virtual Machine)?

Long Questions:

1. Provide an overview of the Dalvik Virtual Machine (DVM) and its significance in Android app execution.
2. Compare and contrast the Dalvik Virtual Machine (DVM) with a traditional Java Virtual Machine (JVM).

4.3 Understanding AndroidManifest.xml:

Short Questions:

1. What is the AndroidManifest.xml file in Android development?

2. Why is the AndroidManifest.xml file important for Android apps?

Long Questions:

1. Explain the purpose and structure of the AndroidManifest.xml file in Android app development.

2. Discuss the key elements and information contained within the AndroidManifest.xml file.

****Unit-5: Android Widgets (UI)****

5.1 Hiding Title Bar:

Short Questions:

1. How can you hide the title bar in an Android app?
2. Why might you want to hide the title bar in certain scenarios?

Long Questions:

1. Describe the methods for hiding the title bar in an Android app and discuss situations where this might be necessary.
2. Explain the impact of hiding the title bar on the user interface and user experience of an Android app.

5.2 Screen Orientation (Portrait, Landscape):

Short Questions:

1. What is screen orientation in the context of Android apps?
2. How can you control and manage screen orientation in Android development?

Long Questions:

1. Explain the concept of screen orientation in Android apps and its significance.
2. Describe the techniques and methods for managing screen orientation, including portrait and landscape modes, in Android development.

5.3 Form Widget Palette:

Short Questions:

1. What is the Form Widget Palette in Android app design?

2. How can you use text fields and buttons from the Form Widget Palette in your app?

Long Questions:

1. Discuss the purpose and functionality of the Form Widget Palette in designing Android app interfaces.

2. Explain how to place text fields and buttons from the Form Widget Palette in an Android app layout.

5.4 Displaying Notification:

Short Questions:

1. What is a notification in the context of Android apps?

2. How can you display a notification using the Toast class in Android?

Long Questions:

1. Describe the concept of notifications in Android apps and their role in providing information to users.

2. Explain the usage of the Toast class for displaying messages as notifications in Android.

5.5 ToggleButton:

Short Questions:

1. What is a ToggleButton in Android?

2. What are the attributes of a ToggleButton, such as textOff and textOn?

Long Questions:

1. Explain the concept of a ToggleButton and its purpose in Android app interfaces.

2. Discuss the attributes and event methods associated with ToggleButtons, including textOff, textOn, getTextOff(), getTextOn(), and setChecked().

5.6 CheckBox:

Short Questions:

1. What is a CheckBox in Android?

2. What are the event methods associated with CheckBoxes, such as isChecked() and setChecked()?

Long Questions:

1. Describe the role of CheckBoxes in Android app interfaces and their use cases.

2. Explain the event methods isChecked() and setChecked() in the context of CheckBoxes in Android development.