

SNS COLLEGE OF TECHNOLOGY

DEPARTMENT OF MCA

19CAT701 – Mobile Application Development

TWO MARKS QUESTIONS & ANSWERS

UNIT – I : GETTING STARTED WITH MOBILITY

(1) What is your understanding on Android?

Android is a stack of software for mobile devices which includes an Operating System, middleware and some key applications. The application executes within its own process and its own instance of Dalvik Virtual Machine. Many Virtual Machines run efficiently by a DVM device. DVM executes Java languages byte code which later transforms into .dex format files.

(2) Highlight the challenges in Mobile Application Development.

- Battery-powered device
- Small screens of varying shapes, sizes, and resolutions
- Memory
- Storage space

(3) Name some of the Mobile Operating Systems.

- Android
- Apple iOS
- Blackberry OS
- Windows Phones
- BADA
- Symbian
- Open WebOS
- Maemo
- MeeGo

(4) Name some of the versions of Android OS.

- Cupcake (1.5)
- Donut (1.6)
- Eclair (2.0–2.1)
- Froyo (2.2–2.2.3)
- Gingerbread (2.3–2.3.7)
- Honeycomb (3.0–3.2.6)
- Ice Cream Sandwich (4.0–4.0.4)
- Jelly Bean (4.1–4.3.1)
- KitKat (4.4–4.4.4, 4.4W–4.4W.2)
- Lollipop (5.0–5.1.1)
- Android M

(5) Share the features of Linux kernel ?

Android was created on top of the open-source Linux 2.6 kernel. The Android team choose to use this kernel because it provided proven core features to develop the Android operating system. The features of the Linux 2.6 kernel include (but aren't limited to) the following:

- ✓ Security model: The Linux kernel handles security between the application and the system.
- ✓ Memory management: The kernel handles memory management for you, leaving you free to develop your app.
- ✓ Process management: The Linux kernel manages processes well, allocating resources to processes as they need them.
- ✓ Network stack: The Linux kernel also handles network communication.
- ✓ Driver model: The goal of Linux is to ensure that everything works.

(6) Identify the tools required for android apps development.

- ✓ Java JDK: Lays the foundation for the Android SDK.
- ✓ Android SDK: Provides access to Android libraries and allows us to develop for Android.
- ✓ Eclipse IDE (Integrated Development Environment): Brings together Java, the Android SDK, and the Android ADT (Android Development Tools), and provides tools for us to write our Android programs.
- ✓ Android ADT: Does a lot of the grunt work for us, such as creating the files and structure required for an Android app.

(7) List out some of the Android SDK Features.

- ✓ No licensing, distribution, or development fees
- ✓ Wi-Fi hardware access
- ✓ GSM, EDGE, and 3G networks for telephony or data transfer, allowing you to make or receive calls or SMS messages, or to send and retrieve data across mobile networks
- ✓ Comprehensive APIs for location-based services such as GPS
- ✓ Full multimedia hardware control including playback and recording using the camera and microphone
- ✓ APIs for accelerometer and compass hardware
- ✓ IPC message passing
- ✓ Shared data stores
- ✓ An integrated open source WebKit-based browser
- ✓ Full support for applications that integrate Map controls as part of their user interface
- ✓ Peer-to-peer (P2P) support using Google Talk
- ✓ Mobile-optimized hardware-accelerated graphics including a path-based 2D graphics library and support for 3D graphics using OpenGL ES

(8) What are the components of Android architecture?

- ✓ Linux Kernel
- ✓ Libraries
- ✓ Android Run Time
 - Core Libraries
 - Dalvik Virtual Machine
- ✓ Application Framework
- ✓ Application Layer

(9) Examine an Android Run Time.

Android Run Time includes the core libraries and the Dalvik Virtual Machine, the Android run time is the engine that powers your applications and, along with the libraries, forms the basis for the application framework.

(10) Assess the use of Core Libraries in Android.

The core Android libraries provide most of the functionality available in the core Java libraries as well as the Android specific libraries.

(11) Predict the role of Dalvik Virtual Machine in Android framework.

Dalvik is a register based virtual machine that's been optimized to ensure that a device can run multiple instances efficiently. It relies on the Linux kernel for threading and low-level memory management.

(12) What is Application Framework?

The application framework provides the classes used to create Android applications. It also provides a generic abstraction for hardware access and manages the user interface and application resources.

(13) Give the challenges for mobile devices over desktop or notebook computers?

Mobile devices have relatively:

- Low processing power
- Limited RAM
- Limited permanent storage capacity
- Small screens with low resolution
- Higher costs associated with data transfer
- Slower data transfer rates with higher latency
- Less reliable data connections
- Limited battery life

(14) What is an Android Emulator?

The emulator is an implementation of the Dalvik virtual machine, making it as valid platform for running Android applications as any Android phone. Because it's decoupled from any particular hardware, it's an excellent baseline to use for testing your applications.

(15) Name the various mobile app. development approaches.

- Native approach
- Web approach
- Hybrid approach

(16) Name some logical components of an Android app.

- Activity
- Service
- Broadcast Receiver
- Content Provider