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Department of Master of Computer Applications (MCA)

Mobile Application Development

(MCA221IA) Hand Notes

Unit - 1	**Topic: History Of Android**
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1. What is Android? (2 Marks)
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8. Features Of Android (8 mark)
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2 Mark Questions

Q1: What is Android?
Answer:
Android is an open-source mobile operating system developed by Google. It is based on a modified version of the Linux kernel and is primarily designed for touchscreen mobile devices such as smartphones and tablets

Q2: Who founded Android and when?
Answer:
Android Inc. was founded in October 2003 by Andy Rubin, Rich Miner, Nick Sears, and Chris White in Palo Alto, California.

Q3: What was the first Android version and phone?
Answer:
The first Android version was Android 1.0, and the first phone to use it was the HTC Dream (also known as T-Mobile G1), launched in 2008.

Q4: What is the Android SDK?

Answer:
The Android Software Development Kit (SDK) is a set of tools, libraries, and documentation that developers use to create applications for Android devices.

Q5: Name any two Android versions and their code names.

Answer:
Two Android versions are:

- Android 4.1 – Jelly Bean
- Android 5.0 – Lollipop

8Mark Questions

Q6: List and explain Android versions with their code names.
Answer:

Android versions are released with alphabetical dessert-themed code names (until Android 10). Here are major versions:

- **1.5 – Cupcake:** Introduced virtual keyboard and widget support.

- **1.6 – Donut:** Enhanced search and screen resolution support.

- **2.0/2.1 – Eclair:** Added Google Maps navigation and multiple account support.

- **2.2 – Froyo:** Brought speed improvements and USB tethering.

- **2.3 – Gingerbread:** Refined UI, improved gaming, and NFC support.

- **3.x – Honeycomb:** Tablet-specific UI; introduced Action Bar.

- **4.0 – Ice Cream Sandwich:** Unified phone and tablet UI; introduced Holo theme.

- **4.1–4.3 – Jelly Bean:** Project Butter for smooth UI, Google Now.

- **4.4 – KitKat:** Optimized for low-end devices, full-screen immersive mode.

- **5.x – Lollipop:** Introduced Material Design, enhanced notifications.

- **6.0 – Marshmallow:** Permissions model, Doze mode for battery saving.

- **7.x – Nougat:** Multi-window, quick switch apps.

- **8.x – Oreo:** Picture-in-picture, notification dots, faster boot.

- **9 – Pie:** Gesture navigation, digital wellbeing tools.

- **10–14:** Named numerically (no desserts), improved privacy, foldable support, Material You, and AI features.

Q7: Describe the evolution of Android features across versions.

Answer:

The evolution of Android has been marked by continuous improvements in usability, performance, and security:

- **Android 1.0(Alpha or Angel Cake) to Android 1.1(Beta)**

The first version of the open source software was released back in 2008.Focused on basic smartphone functionality like messaging, web browsing, and app support. Introduced the Android Market (now Play Store), virtual keyboard, and camera support.

- **Android 2.0/2.1 (Eclairs) 2.2 (Froyo) 2.3 (Ginger Bread)**

- **Honeycomb (3.x):** For the first the Google released a software that was totally focused on tablets. This version released in 2011Tablet-specific enhancements with a new UI and multitasking supportFor the first the Google released a software that was totally focused on tablets. This version released in 2011.

- **Ice Cream Sandwich (4.0):** Unified the phone and tablet OS with a modern UI and facial recognition unlock.Released in the year 2012.

- **Jelly Bean (4.1–4.3):** Focused on performance (Project Butter), added Google Now, and expanded notifications. Released in 2013

- **KitKat (4.4):** Optimized for lower-end devices, introduced immersive full-screen mode and OK Google.Released on 31 October 2013

- **Lollipop (5.x):** Major UI overhaul with Material Design and better battery management (Project Volta).

- **Marshmallow (6.0):** Enhanced app permissions, introduced Doze mode and fingerprint API.

- **Nougat (7.x):** Introduced multi-window support, better notifications, and improved performance.

- **Oreo (8.x):** Background process limits, picture-in-picture mode, and notification channels.

- **Pie (9):** Gesture navigation, adaptive battery/brightness, and digital wellbeing.

- **Android 10 onwards:** Improved privacy controls, system-wide dark mode, 5G support, foldable screen support, and dynamic theming (Material You).

Q8. Key Features of Android ?

Open Source
- Android is based on the Linux kernel and released under the **Apache open-source license**.

- Developers and device manufacturers can **customize** and modify it freely

User-Friendly Interface
- Simple and interactive **Graphical User Interface (GUI)**.

- Highly responsive with **touchscreen gestures**, drag-and-drop, and voice input.

Customizable Home Screen
- Users can personalize widgets, shortcuts, and launchers.

- Multiple home screens and support for third-party themes.

Multitasking
- Allows multiple apps to run in the background.

- Efficient task management with the **Recent Apps** feature.

Notifications
- Real-time notifications for messages, updates, system alerts, etc.

- **Expandable and actionable notifications** (reply, archive, delete).

Security
- Features like **app sandboxing**, **biometric authentication**, and **Google Play Protect**.

- Regular security patches and updates.

Multi-Device Support
- Runs on various devices: **smartphones, tablets, TVs, watches (Wear OS), cars (Android Auto)**.

Regular Updates
- New Android versions are released annually with feature and security enhancements.

- Monthly patches and beta programs for enthusiasts.

Battery Optimization
- Features like **Doze Mode** and **Adaptive Battery** enhance power efficiency.

Q9: Describe the evolution of Android Studio across versions.

Numbered Versions (2013 – mid-2021)

Version	Release Date	Key Highlights
0.1 – 0.8	2013–2014	Initial preview builds (Canary/Beta), Gradle build
1.0	Dec 2014	First stable release, APK signing, multi-modules
1.1 – 1.5	2015	Bug fixes, Lint, and emulator improvements
2.0	April 2016	**Instant Run**, faster emulator
2.1 – 2.3	2016	Java 8 features, expanded profiling tools
3.0	Oct 2017	**Kotlin** support, Android Profiler
3.1 – 3.6	2018–2019	Gradle sync optimization, UI updates
3.5	Aug 2019	**Project Marble** (stability and performance)
4.0	May 2020	Motion Editor, Build Analyzer
4.1	Oct 2020	Database Inspector, emulator inside IDE
4.2	May 2021	Upgrade assistant, Kotlin improvements

Named Versions (2021 – Present)

From July 2021, Google introduced named versions based on animals.

Version	IntelliJ Base	Release Date
Arctic Fox	2020.3.1	July 2021
Bumblebee	2021.1.1	Jan 2022
Chipmunk	2021.2.1	May 2022
Dolphin	2021.3.1	Sep 2022
Electric Eel	2022.1.1	Jan 2023
Flamingo	2022.2.1	May 2023
Giraffe	2022.3.1	Aug 2023
Hedgehog	2023.1.1	Dec 2023
Iguana	2023.2.1	Jan 2024
Jellyfish	2023.3.1	May 2024
Koala	2024.1.1	Sep 2024
Meerkat *(Latest Stable)*	2023.3.1	Dec s2024