1. What is mobile application testing?

It is the process of testing applications that are developed for handheld mobile devices to ensure their functionality, usability, and consistency across different devices and OS versions.

2. What are the types of mobile applications?

Native, Web, and Hybrid applications. Native apps are platform-specific, web apps are accessed through browsers, and hybrid apps combine elements of both.

3. What is the difference between emulator and simulator?

Emulators mimic both hardware and software of a device (Android), while simulators mimic only the software (iOS), offering faster but less accurate testing environments.

4. What is Appium?

Appium is an open-source test automation framework used for testing native, hybrid, and mobile web apps across iOS and Android platforms.

5. What languages are supported by Appium?

Appium supports Java, Python, JavaScript, Ruby, PHP, and C# through WebDriver protocol.

6. How do you install an APK on an Android emulator?

Using the ADB command: `adb install app.apk` after setting up the emulator through Android Studio.

7. What are desired capabilities in Appium?

These are key-value pairs that define the device and app environment like platformName, deviceName, appPackage, appActivity, etc.

8. How do you inspect mobile elements?

Use Appium Inspector or UIAutomator Viewer to locate elements using XPath, ID, class name, or accessibility ID.

9. What gestures can you automate in Appium?

Tap, swipe, scroll, long press, pinch, and zoom can all be automated.

10. What is ADB and how is it used in testing?

ADB (Android Debug Bridge) is a command-line tool used to communicate with an Android device for operations like installing APKs, capturing logs, and more.

11. What are the challenges in mobile testing?

Device fragmentation, screen sizes, OS versions, battery usage, network conditions, and memory limitations.

12. What is the difference between functional and non-functional testing?

Functional testing checks features and functionality, while non-functional testing focuses on performance, usability, security, etc.

13. How do you perform compatibility testing for mobile apps?

By testing the app on various devices, screen sizes, OS versions, and network environments.

14. What tools are used for manual mobile testing?

Android Studio, Xcode, ADB, Emulators, Simulators, and bug tracking tools like JIRA or Bugzilla.

15. How do you write mobile test cases?

Include test case ID, objective, preconditions, steps to execute, expected results, and status.

16. What is cloud-based mobile testing?

Using platforms like BrowserStack or Sauce Labs to test apps across a wide range of real devices hosted in the cloud.

17. What is monkey testing in mobile?

Random input testing on the app to check for crashes or unexpected behavior using tools like MonkeyRunner.

18. How do you test an app’s battery consumption?

Use profiling tools like Android Profiler or Xcode Instruments to measure battery usage during app operation.

19. What is real device testing vs emulator testing?

Real device testing is more reliable and simulates real-world behavior, whereas emulators are cost-effective but limited in accuracy.

20. What is UIAutomator?

A UI testing framework by Android that allows testing of user interactions across apps and system UI.

21. How do you perform localization testing in mobile?

Test app content and UI across different languages and regions to ensure it behaves as expected.

22. What is deep linking in mobile apps?

A technique that allows users to open a specific screen or content in a mobile app through a URL.

23. What is the purpose of mobile app logs?

Logs help trace errors, performance issues, and user actions during test execution.

24. How do you test push notifications?

Use tools like Firebase to trigger push notifications and verify behavior on foreground/background modes.

25. What is performance testing in mobile apps?

Testing the responsiveness, stability, scalability, and speed of the app under different workloads.

26. What is installation testing?

Verifying that the app installs, updates, and uninstalls properly without affecting system performance.

27. What is the difference between regression and retesting?

Regression ensures new changes haven't broken existing functionality; retesting checks if specific defects are fixed.

28. How do you handle alerts and pop-ups in Appium?

Use `driver.switchTo().alert()` methods to accept, dismiss or read alert messages.

29. What is a hybrid app and how do you test it?

Hybrid apps use web technologies within a native wrapper. Use Appium with context switching for web and native views.

30. What are locators in Appium?

Strategies to identify elements: ID, XPath, Accessibility ID, Class Name, etc.

31. What is the use of Page Object Model in mobile automation?

It helps maintain clean code by separating UI elements and test logic, making scripts reusable and maintainable.

32. How do you run Appium tests in parallel?

Use TestNG and define separate capabilities for each device/session using parallel execution config.

33. What is mobile usability testing?

Evaluating the app’s user interface and experience for intuitiveness, responsiveness, and ease of use.

34. What is shake gesture and how to automate it?

Simulating a shake action; not supported natively in Appium, may need workarounds or device-level simulation.

35. How do you validate mobile network conditions?

Test under different network speeds (2G, 3G, 4G) using network throttling or real SIMs.

36. What is GPS testing in mobile apps?

Testing how the app responds to location-based services using mock locations or GPS simulators.

37. How do you automate swipe in Appium?

Use TouchAction or W3C Actions API for swipe gestures with defined coordinates or elements.

38. What is the use of appPackage and appActivity?

They define the Android app's launchable component used in desired capabilities to start the app.

39. What is parallel testing in mobile QA?

Executing the same test cases simultaneously on multiple devices or configurations to speed up testing.

40. What is mobile test strategy?

A high-level plan that defines the approach, scope, schedule, and tools used for mobile testing.

41. How do you handle permission pop-ups in automation?

Grant permissions via ADB or add permissions in desired capabilities during test setup.

42. What is mobile sandbox testing?

Testing the app in a controlled environment with limited permissions and data access.

43. How to test app crash recovery?

Force stop the app, reopen, and verify if the state is retained and app recovers gracefully.

44. What is the impact of screen orientation on testing?

Ensure the app works in both portrait and landscape modes without layout issues.

45. What is mobile security testing?

Assessing data encryption, authentication, secure APIs, and vulnerability to unauthorized access.

46. What are mobile testing KPIs?

Bug leakage rate, test case execution rate, test coverage, defect severity index.

47. How to test biometric features like fingerprint/face ID?

Use emulators/simulators or real devices to simulate biometric authentication.

48. What is geofencing and how to test it?

Triggering app features when entering or exiting a defined geographic area, tested using mock locations.

49. What is the best way to test background app behavior?

Minimize the app, receive push/call, and verify it resumes correctly or maintains state.

50. How do you perform end-to-end testing in mobile?

Simulate full user flows including login, navigation, transactions, logout with data validation.