Assignment

1. Which software development technique is good for the systems that have third party API calls, cron jobs, data exports/imports, etc.,
   -> For systems involving third-party API calls, scheduled jobs, and data transactions, the recommended development techniques include:

   Microservices Architecture: Enables modular and scalable development with independent services interacting via APIs.

   Event-Driven Architecture: Useful for asynchronous processing and real-time event handling in cron jobs.

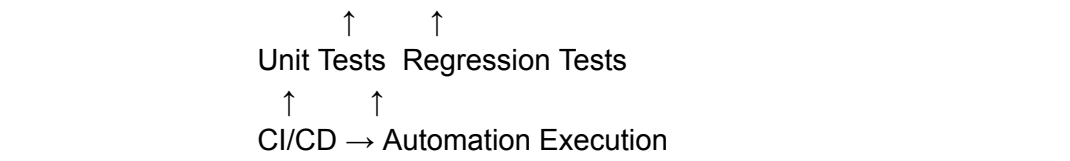
   Serverless Computing: Reduces operational overhead and is ideal for scheduled background tasks like data imports/exports.

   Queue-Based Processing (e.g., RabbitMQ, Kafka): Ensures reliable execution of background jobs.

2. Where does Test Automation fit in the Software Life Cycle? Explain with a diagram.
   -> Test Automation is integrated into the Software Development Life Cycle (SDLC) at multiple stages:

- Requirement Analysis: Identification of test automation needs.
- Development: Writing unit tests & API automation.
- Testing Phase: Functional, regression, and integration tests.
- Deployment & Maintenance: Automated monitoring & maintenance tests.

Diagram Representation:



3. Can we skip the manual testing and why?
   -> Completely skipping manual testing is not advisable. Because

a. User Experience issue
b. Edge case and unexpected behavior
c. Real - world simulation

4. Give the names of the selector(locators) ?
   -> Locators used in test automation:
   ID ,Name ,Class Name , XPath ,CSS Selector ,Link Text ,Partial Link Text , Tag Name

5. What is the modular framework?
   -> a software design approach where a large application is broken down into smaller,
   Self-contained and independent units called modules
   Key of modular framework
      a. Modularization
      b. Interdependence
      c. Scalability
      d. Maintainability
   Example of modular frameworks
   Testing frame works
   Software developement

6. Explain the Open source tool.
   -> Large variety
      - Some are great—others not so
   Normally easy to integrate with other tools
   Free, is good
      - Everyone can use freely
   Free, as in speech, is good
      - Can be customize freely
      - Can never really die

7. What is a Hybrid framework?
   ->Use the combination of two or more of the above-mentioned techniques, taking from their strengths and minimizing their weaknesses.

   The framework can use the modular approach along with either data-driven or keyword-driven framework.

   The framework can use scripts to perform some tasks that might be too difficult to implement in a pure keyword driven approach.

8. Write a name of record and replay tool.
   -> Selenium IDE is a popular record-and-replay tool that helps automate browser actions without coding.

9. What is the difference between BDD and Cucumber?
   -> BDD (Behavior-Driven Development): A methodology that focuses on writing behavior specifications using natural language.

   Cucumber: A tool that implements BDD using Gherkin syntax to write test scenarios.

10. Can we replace the Manual Regression testing effort from Test automation and how?
    ->Yes , manual regression testing effort can be reduced or even replaced by test automation.
    a. Repetitive task
    b. Prioritize high risk areas

    Automation tools are :
    Selenium,Appium,Junit etc..

11. How many ‘A’s test script has? Explain them.

-> Arrange: Set up test data & environment.
   Act: Perform the test action.
   Assert: Validate expected results.