Assignment-1
Introduction to Selenium

1. Core Components:

Selenium WebDriver: Programmatic browser automation, supports multiple languages.

Selenium IDE: Record-and-playback tool for simple test creation.

Selenium Grid: Enables parallel and distributed testing.

Selenium RC: Legacy tool, replaced by WebDriver.

2. Key Benefits:

Free & Open-Source: No licensing costs, supported by a strong community.

Cross-Browser & Multi-Language Support: Works with major browsers and languages like Java and Python.

Extensible: Integrates with tools like TestNG, Jenkins, and frameworks for advanced automation.

Widely Adopted: Versatile and compatible with modern CI/CD practices.

3. Supported Browsers & Cross-Browser Testing:

Supported Browsers: Chrome, Firefox, Edge, Safari, Opera, Internet Explorer.

Cross-Browser Testing: Ensures consistent behaviour across browsers.

Importance:

1. Ensures compatibility across browsers.
2. Detects browser-specific issues.
3. Provides a better experience for a wider audience.

4. Selenium WebDriver Architecture:

Components:

1. Test Script: Commands to automate tasks.
2. JSON Wire Protocol: Translates commands to a standard format.
3. Browser Driver: Executes browser-specific actions (e.g., Chrome Driver).

4. Browser: Performs requested actions (e.g., click, navigate).

Communication Process:

Test Script → WebDriver → Browser Driver → Browser → Results → Back to Script.

Question5: Write a basic Selenium WebDriver test script (in Python) that:

- Launches a browser.
- Navigates to https://www.amazon.com.
- Verifies the title of the page.
- Closes the browser. Include comments in the code explaining each part of the script.

```
from selenium import webdriver
from selenium.webdriver.chrome.service import Service

sobj= Service(r"D:\BEBO-tech\drivers\chromedriver-win64\chromedriver.exe")
driver= webdriver.Chrome(service=sobj)
driver.get("https://www.amazon.com.") # it will get link of site and open it in automated browser.
exp="Amazon.com" # this expected output
act=driver.title # this is actual outpt which is fatched directly form web page being automated
if act==exp: #it will compare both results
   print("test pass")
else:
   print("test failed")
```