**1) What is Automation Testing?**

Automation testing is a process in which software tools execute pre-scripted tests on a software application before it is released into production. Special software is used to control the test execution, actual outcomes and predicted outcomes comparison, the test preconditions setting up, and other test control and test reporting functions.

**2) What are the main advantages of Automation Testing?**

Regression testing coverage, test engineer productivity, consistency in testing, test cases reusability, reduced software maintenance cost, increased test effectiveness, reduction of the test interval, reducing human-generated errors.

**3) So, what is Selenium?**

Selenium is a robust test automation suite designed in a way to support and encourage automation testing of functional aspects of web-based applications and a wide range of browsers and platforms.

**4) What are the main advantages of Selenium?**

* Selenium is a free and open source. You don't need to spend any licensing cost to use it.
* Cross Browser compatibility (Firefox, Chrome, Internet Explorer, Safari etc.)
* Multiple programming languages (Java, C#, Ruby, Python, Pearl etc.) support
* Compatibility with the main platform (Windows, Mac OS, Linux etc.)
* Huge amount user base and helping communities
* Automation scripts creating ability for non-programmers as well as for programmers
* Testing distribution support
* Regular and fresh repository developments

**5) What Selenium components do you know?**

Selenium is a suite of tools for automated web testing.  It is composed of:

* **Selenium IDE (Integrated Development Environment)**. It is a tool for recording and playing back. It is a Firefox plugin.
* **WebDriver and RC**. It provides the APIs for a variety of languages like Java, .NET, PHP, etc. They work with most of the browsers.
* **Grid:** you can distribute tests on multiple machines so that test can be run parallel which helps cutting down the time required for running test suites in the browser.

**6) How many types of Webdriver APIs are available in Selenium?**

The list of driver classes could be used for the browser automation.

* AndroidDriver, ChromeDriver, EventFiringWebDriver, FirefoxDriver, HtmlUnitDriver, InternetExplorerDriver, iPhoneDriver, iPhoneSimulatorDriver, RemoteWebDriver

**7) Does the Selenium have any limitations?**

Selenium supports only web based applications testing. So, here are the limitations of it:

* Mobile applications cannot be tested using Selenium
* Desktop applications cannot be tested using Selenium
* Captcha and Bar code readers cannot be tested using Selenium
* User should use third-party tools like TestNG or jUnit to write test scripts and generate reports
* Programming language knowledge is required to create robust scripts in Selenium WebDriver

**8) What is Selenium IDE?**

Selenium IDE is a plug-in used to record and replay tests in Firefox browser. Scripts may be automatically recorded and edited manually providing auto-completion support and the ability to move commands around quickly.

**9)** **What is Selenese?**

Selenese is the language which is used to write test scripts in Selenium IDE.

**10)** **What kinds of test types are supported by Selenium?**

Functional Testing, Regression Testing, Sanity Testing, Smoke Testing, Responsive Testing, Cross Browser Testing, UI testing (black box), Integration Testing.

**11) What are the different types of locators in Selenium?**

The different types of locators in Selenium are ID, ClassName, Name, TagName, LinkText, PartialLinkText, XPath, CSS Selector, DOM.

**13) Explain the meaning of assertion in Selenium and what are the types of assertion?**

Assertion is used as a verification point. It verifies that the application state conforms to the expectation.  The types of assertion are “assert”, “verify” and “waifFor”.

**14) Explain the difference between assert and verify commands?**

Both of them check if the given condition is true or false. Unlike to "assert", "verify" will not stop the test case execution if the test case fail.

**15)** **What is a XPath?**

XPath is a language that describes a way to locate and process items in Extensible Markup Language (XML) documents by using an addressing syntax based on a path through the document's logical structure or hierarchy.

**16) What is an Absolute XPath?**

Absolute XPath is the direct way to find the element. It has a disadvantage. XPath gets failed if there are any changes made in the path of the element.  html/body/div[3]/div/div[1]/div/div/div[1]/div/input - Absolute XPath example.

**17)** **What is a Relative XPath?**

Relative XPath means that user can start from the middle of the HTML DOM structure and no need to write long XPath. Example of**Relative XPath - //input[@id='email']**.

**18)** **What is the difference between single slash (/) and a double slash ( //) in XPath?**

A single slash (/) is used for creating XPaths with absolute paths beginning from the root node.

Double slash (//) is used for creating relative XPath to start selection from anywhere within the root node

**19)** **How could the web element attributes be inspected in order to use them in different locators?**

Firebug is a Firefox plugin that provides various development tools for debugging applications. From an automation perspective, Firebug is used specifically for inspecting web-elements in order to use their attributes like id, class, name etc. in different locators.

**20)** **Give an example of the languages supported by WebDriver.**

Java, C#, Python, and Ruby, are all supported directly by the development team.

**23)** **Explain the fundamental difference between XPath and CSS selector.**

Using CSS selector we can only move downwards in the document, using XPaths we traverse up in the document.

**24) How can you find if an element is displayed on the screen?**

There are different methods, which help user to check the visibility of the web elements: **isDisplayed(), isEnabled(), isSelected()**. These web elements can be buttons, drop boxes, checkboxes, radio buttons, labels etc.

**25)** **What is the difference between "type" and "typeAndWait" command?**

If you need to type keyboard key values into a text field of the web application, "type" command will be used. Another reason for its usage is selecting values of the combo box. "typeAndWait" command is used when your typing is completed and software web page start reloading.

**26) How can the user get a text of a web element?**

driver = driver.find\_element\_by\_class\_name("nameOfClass")

print(driver.text)

**27)** **How a text written in a text field could be cleared?**

A text written in a text field could be deleted by using the **clear()** method.

**28)** **How to check a checkBox in Selenium?**

The same **click()** method could be used for checking checkbox as well as for clicking buttons or radio buttons.

**29)** **How to verify if the checkbox/radio is checked or not?**

**isSelected()** method is used to verify if the checkbox/radio is checked or not.

driver = driver.find\_element\_by\_id("eulaAccepted")

if driver.is\_selected():

print('Check box is already selected')

else:

driver.click()

**30)** **What is the alternate way to click on login button?**

**submit()** method could be used as the alternate way to click on login button, but only if attribute type=submit.

**31)** **How to select a value in a dropdown?**

WebDriver’s Select class is used to select value in the drop down.

drop = Select(webdriver.find\_element\_by\_xpath('//select[@name="action"]'))  
drop.select\_by\_visible\_text('Raw Text')

selectByVisibleText.selectByVisibleText(“some\_visible\_text”);

**32)** **Explain the difference between close and quit command.**

If you need to close the current browser having focus **driver.close()** is used. If you need to close all the browser instances **driver.quit()** is used.

**33)** **What is the difference between setSpeed() and sleep() methods?**

Both of these methods delay the speed of execution.

For Example:

* **sleep(5000)**- It will wait for 5 seconds. It is executed only once, where the command is written.
* **setSpeed("5000")**- It also will wait for 5 seconds. It runs each command after setSpeed delay by the number of milliseconds mentioned in set Speed.

**35)** **What is the difference between findElement () and findElements ()?**

Both of them let user to find elements in the current web page matching to the specified locator value. But if you use **findElement()**, only the first matching element would be fetched. An example:

If you use **findElements()**, the all matching elements would be fetched and stored in the WebElements list. An example:

**36)** **Can Selenium handle Windows based pop-up?**

Windows pop-ups cannot be handled by using Selenium. Because it supports only web application testing.

**37) How can we handle Web-based pop-up?**

driver.switch\_to.alert.accept()

**alert.accept()** – Will click on OK button

**alert.dismiss()** – Will click on Cancel button

**alert.text** – will get the text which is present on the Alert

**39) How can we maximize browser window in Selenium?**

webdriver = webdriver.Chrome()  
webdriver.maximize\_window()

**40) How can we find the value of different attributes like name, class, value of an element?**

driver.find\_elements\_by\_xpath("//\*[@type='submit']").get\_attribute("value")

**41) Could cookies be deleted in Selenium?**

driver.delete\_all\_cookies()

**43)  How do perform drag and drop using Selenium WebDriver?**

from selenium import webdriver

from selenium.webdriver.common.action\_chains import ActionChains

driver = webdriver.Chrome()

driver.get("http://html5demos.com/drag")

source\_element = driver.find\_element\_by\_id('bin')

dest\_element = driver.find\_element\_by\_id('two')

ActionChains(driver).drag\_and\_drop(source\_element, dest\_element).perform()

**44) How to check if an element is visible on the page?**

hidden\_element = driver.find\_element\_by\_name('oq') #this one is not

if hidden\_element.is\_displayed():

print "Element found"

else:

print "Element not found"

**45)** **How to check if a button is enabled on the page?**

**isEnabled()** .. same as isDispayed() ans isSeleceted().

**47) Can you write the code to double click an element in Selenium?**

from selenium.webdriver.common.action\_chains import ActionChains

...

element = driver.find\_element\_by\_xpath('//li[a[@title="Men"]]')

actions = ActionChains(driver)

actions.double\_click(element).perform()

**48) How to mouse hover an element in Selenium?**

from selenium.webdriver.common.action\_chains import ActionChains

element = driver.find\_element\_by\_xpath('//li[a[@title="Men"]]')

actions = ActionChains(driver)

actions.move\_to\_element(element).perform()

**49) What kind of keyboard operations can be performed in Selenium?**

searchBox = webdriver.find\_element\_by\_id('searchinput')  
searchBox.send\_keys('Beginners')..to enter the text

searchBox.send\_keys(Keys.ENTER)… …to hit Enter

**54) Explain how you can capture screenshot?**

driver.get\_screenshot\_as\_file(“filename”) with this method we can take screen shot.

**55) Can captcha and bar code reader be automated by using Selenium?**

Neither captcha, no bar code reader can be automated by using Selenium.

**56) How to verify tooltip text using Selenium?**

The tooltip text in Selenium could be verified by fetching the value of 'title' attribute. An example:

copy

1. String toolTipText = element.getAttribute("title");

**57) How to locate a link using its text in Selenium?**

driver.find\_element\_by\_link\_text(“refresh”) …<a href=”#”>refresh</a>

driver.find\_element\_by\_partial\_link\_text(“refresh”)… a href=”#”>refresh here</a>

**58) Can we find all links on a web page?**

As all links are of anchor tag 'a', so we can find all of them on a web page by locating elements of tagName ‘a’:

List links = driver.find\_elements\_by.tag\_name("a");

**61) How many exceptions do you know in Selenium WebDriver?**

There are 5 different exceptions Selenium WebDriver:

* NoAlertPresentException,
* NoSuchElementException
* NoSuchWindowException
* TimeoutException
* WebDriverException

**62) How will you use Selenium to upload a file?**

File uploading action could be performed by using **element.sendKeys("path of file")** on the webElement of input tag and type file: **< name="fileUpload" type="file" />**

**67) How do you get the width of the textbox?**

1. driver.find\_element\_by.xpath(“xpath of textbox”)).getSize().getWidth();

**69) What is the purpose of deSelectAll() method?**

It is used to deselect all the options which have been selected from the drop-down list.

**71) How to login into any site if it’s showing any authentication pop-up for username and password?**

You should pass the username and password with URL:

https://username:password@url

https://creds:test@www.test.com

**72) What is the purpose of getOptions() method?**

**getOptions()** is used to get the selected option from the drop-down list.

**73) What is the difference between getWindowHandles() and getWindowHandle()?**

You can get the browser address using these commands. But if you use getWindowHandle(), you’ll get the address of the current browser where the control is and return type is a string. So, if you use getWindowHandles(), you will get the address of all the open browser and its return type is an iterator.

**75)** **How do you send ENTER/TAB keys in WebDriver?**

use **click()** or submit() methods are used for ENTER. But, don’t forget that **submit()** method is used only if type=’submit’.

You can use Actions class **act.sendKeys(Keys.ENTER)** for TAB.

**77) What is a data-driven framework?**

The Data Driven test design framework follows a design paradigm where test logic is fixed but varies the test data.  The data itself can be in different repositories like a simple .csv file, .json file or .xls sheet, or database and can add the tests merely updating those external files or DB (instead of placing in test code itself).

**78) What is a keyword-driven framework?**

The keyword driven framework is a methodology where actions or steps are treated as keywords. These keywords (like click, move, type etc.,) are stored in some external repositories along just like data (in .csv/.json/.xls/DB).

**79) What is the hybrid framework?**

The combination of data driven and keyword driven framework is called the hybrid. Here the operations/instructions/keywords in a separate repository (.csv/.xls/.json/DB) and data is in separate (.csv/.xls/.json/db from data provider) and the tests/driver would read both and perform the actual tests automatically. In this design, we get the best of both methodologies, and it is kind of practical in most of the automation cases.

**80) What are the main advantages of Selenium Grid?**

Selenium Grid has following advantages: multi-browser testing, parallel test case execution, multi-platform testing.

**81) What is a hub in Selenium Grid?**

Selenium Grid hub is a central point or a server that controls the test executions on the different machines.

**82) What is a node in Selenium Grid?**

Selenium Grid node is a hub attached machine, which has instances running the test scripts. Unlike a hub, there can be more than one nodes in Selenium Grid.

**83) Could you explain the line of code Webdriver driver = new FirefoxDriver();.**

‘WebDriver' is an interface and we are creating an object of type WebDriver instantiating an object of FirefoxDriver class.

**84) What is the purpose of creating a reference variable- 'driver' of type WebDriver instead of directly creating a FireFoxDriver object or any other driver's reference in the statement Webdriver driver = new FirefoxDriver();?**

We can use the same variable to work with multiple browsers like ChromeDriver, IEDriver by creating a reference variable of type WebDriver.

**86) What could be the cause of Selenium WebDriver test to fail?**

There are some causes of Selenium WebDriver test to fail:

* SeleniumWebDriver element waiting to access did not appear on the web page and the operation timed out
* SeleniumWebDriver is trying to access not created element
* SeleniumWebDriver cannot locate the element, because the locator has been changed

**87) Explain how can you debug the tests in Selenium IDE?**

The tests could be debugged in such way:

* insert a break point from the location from where you want to execute test step by step
* run the test case
* test case execution will be paused at the given break point
* click on the blue button to continue with the next statement
* to continue executing all the commands at a time click on the “Run” button

**89) What is the difference between @Factory and @DataProvider annotation?**

**@DataProvider** is concerned to individual test methods and run the specific methods for many times. **@Factory** method creates test class instances and runs all the test methods in that class with different data. sets.

**90) In which format does source view show the script in Selenium IDE?**

The script is shown by Selenium IDE source view in XML format.

**92) What is the FirefoxDriver, class or an interface? And which interface does it implement?**

FirefoxDriver is a Java class.  It implements all the methods available in the interface.

**94) How could you** **explain the main difference between WebDriver and RC?**

Selenium WebDriver drives the browser using built-in support. RC injects JavaScript function into browsers when the page is loaded.

**95) What is IntelliJ?**

IntelliJ is an IDE that helps users to write code for Selenium better and faster. It could be used as an option to Java bean and Eclipse.

**96) What are the advantages of Using Git Hub For Selenium?**

* Members of multiple people team working on the same project can update its details and inform other team members simultaneously
* You can build the project from the remote repository regularly by using Jenkins. This helps you to keep track of failed builds.

**100) When AutoIT is used?**

AutoIT is used to handle window GUI and non-HTML popups in the application.

**103) Explain why to choose Python over Java in Selenium.**

Here are some points that favor Python over Java to use with Selenium:

* Python is simpler and more compact compared to Java
* Java uses traditional braces to start and ends blocks, whilePython uses indentation
* Java employs static typing, whilePython is dynamically typed
* Java programs tend to run slower compared toPython programs

**104) How can you handle network latency using Selenium?**

You can use **driver.manage().timeouts().pageLoadTimeout();** for network latency