1)**Automation testing?**

Automation testing is the method of testing software products with special testing tools and frameworks to minimize human interaction and maximize quality

**2)Advantages of automation?**

* Simplifies the test case executions
* Improve reliability of tests
* Increase amount of test coverage
* Minimize human interaction
* Save time and memory

**3)when automate?**

* When the project should be stable
* When the project with minimal changes for feature
* When the project is large scale
* When there is a need to reduce testing time

**4)what to automate?**

* Which are required to run on regular basis
* Repetitive ,Manual tasks
* Tasks that require several people
* Time sensitive tasks
* Tasks where the human errors occurs more

**5)practices to follows when writing automation tests**

* Make sure the tests are clear and easy to explain
* Don’t use too much abstraction
* Isolate your tests wherever possible
* Select proper testing tool
* Follow the clear testing structure
* Do not write test cases based on selectors that may have change
* Don’t used fixed waiting time

**6) Points should be noted in automation structure:**

* Separate the test data from main code
* Separate the web locators from main code
* Configuration details(env,data base credentials and URLs)should be in managed in config file
* Separate the reusable code(browser opening)

7)components of the selenium:

**Selenium:**

Selenium is a open source tool which is used to automating the test cases carried on web application that are being tested using any web browser

**Components:**

**Selenium IDE**:(integrated development environment)

It is one of the simplest framework in selenium suite it allows us to record and play back the script

**Selenium RC**:(remote control)

Selenium RC was the flagship testing framework of the whole Selenium project for a long time. This is the first automated web testing tool that allows users to use a programming language they prefer

**Selenium webdriver:**

Selenium webdriver is a browser automation framework that accepts commands and send them to the browser.it is directly communication with browser and control it

**Selenium grid:**

Selenium grid is a tool which is used together with selenium RC it is used to run tests on different machines against different browser parallel

**8)Importence of Webdriver**

WebDriver supports all the programming languages that testers should know of such as like Python, PHP, Java, C#, Ruby, JavaScript etc.

It has a customized script language, it also offers bindings to every major programming language.

Adding flexibility to web developers to work on any programming language that they are comfortable

9)**What is WebDriver?**

WebDriver is a web automation framework that accepts commands and sends them to a browser .It allows you to execute your tests in different browsers, not just Firefox, Chrome

**10)Advantages of Selenium**  
  
1. Selenium is pure open source.   
2. Selenium supports variety of languages that include Java, Perl, Python, C#, Ruby, Groovy, Java Script, and VB Script. etc.   
3. Selenium supports many operating systems like Windows, Macintosh, Linux, Unix etc.   
4. Selenium supports many browsers like Internet explorer, Chrome, Firefox, Opera, Safari etc.   
6. Selenium can be integrated with TestNG testing framework for testing our applications and generating reports. .   
7. Selenium can be integrated with other open source tools for supporting other features.

**11)Disadvantages of Selenium**  
1. Selenium needs very much expert skill resources.   
2. Selenium only supports web based application and does not support windows based application.   
3. It is difficult to test Image based application.   
4. Selenium need outside support for report generation  
5. Selenium script creation time is bit high. 

**12)Different Web locators of Selenium**

Every object on a web page is referred to as an element in selenium. These can be found using different ways such as:

* ID
* CSS Selector
* Link text
* Xpath
* Name
* Partial link
* ClassName
* Tag, etc.

**13)Drop Down Selection**

 Selenium WebDriver provides the select class for following methods to select an option from a drop-down.

* selectByIndex
* selectByValue
* selectByVisibleText

**14) When will you use findElement() and findElements()?**  
**findElement():**This command is used to identify the web element with in the current webpage.

**syntax:**

element =driver.findElements(By.xpath(“//div[@id=’sample’]//ul//li”));

**findElements():**This command is used to identify the list of web elements within a the current webpage.

**Syntax**:

elementList=driver.findElements(By.xpath(“//div[@id=’sample’]//ul//li”));

**15) What is the implicit and explicit wait?**

**implicit**  
 Implicit wait directs the web driver to wait for a fixed time .even that driver get the element it will takes total time for move on to next step.

**explicit wait**  
Explicit wait tells the web driver to wait for a certain condition if the condition is satisfied then no need to wait for given time let’s move on

**16)Can you state the difference between the use of a single slash (/) and a double slash (//) in X Path?**  
In X Path single slash is used to derive the absolute path from the root node whereas a double slash creates relative X Paths.

**17)Can you state the difference between driver.close() and driver.quit() command?**  
**driver.close():**This command is used to close the current web browser window opened by the user.  
**driver.quit():**This command is used to close all the web browser window opened by the user.

**18) Scrolling the web page**

we can scroll the web page by using the Selenium webdriver **execute\_script()** function which executes JavaScript code in the browser.

#Scroll to Bottom of Webpage

driver.execute\_script("window.scrollTo(0,document.body.scrollHeight)")

**19)Actions Class**

Actions class is a collection of individual Action that you want to perform in our projects.

## Methods in Actions class of Selenium

* **Keyboard Events**
* **Mouse Events**

***Keyboard Events***

* **keyDown(modifier key):** Performs a modifier key press.
* **sendKeys(keys to send ):** Sends keys to the active web element.
* **keyUp(modifier key):** Performs a modifier key release.

**Mouse Events**

* **click():** Clicks at the current mouse location.
* **doubleClick():** Performs a double-click at the current mouse location.
* **contextClick() :** Performs a context-click at middle of the given element.
* **clickAndHold():** Clicks (without releasing) in the middle of the given element.
* **dragAndDrop(source, target):** Click-and-hold at the location of the source element, moves to the location of the target element
* **dragAndDropBy(source, xOffset, yOffset):**  Click-and-hold at the location of the source element, moves by a given offset
* **moveByOffset(x-offset, y-offset):** Moves the mouse from its current position (or 0,0) by the given offset
* **moveToElement(toElement):** Moves the mouse to the middle of the element
* **release():** Releases the depressed left mouse button at the current mouse location

**20)Pop up or alert operations in Selenium**

**What is an Alert?**

Alerts are nothing but small message boxes that are displayed on the screen to give some information or ask permission to perform some operation. Sometimes it’s also use for warning purposes.

There are mainly 3 types of alerts are there that are:

* Simple alert
* Prompt alert
* Confirmation alert

**How to handle Alerts in Selenium WebDriver?**

* **Void dismiss():** When you call this method it will click on the cancel button.
* **Void accept():** When you call this method it will click on the Ok button.
* **String getText():** By using this method you can get the alert message
* **Void sendKeys(String stringToSend):** This method will help you to send data to the alert box.

**21)How to take screen shots in Selenium**

getScreenshotAs is a method which comes with the TakeScreenShot interface.

Syntax: driver.getScreenshotAs(file\_name.jpg(or)png)

### **22) How to handle multiple windows in selenium**

### **What is a window handle?**

It is a unique identifier that holds the address of all the windows. This window handle function helps to get the information and do some actions in working windows

**Syntax**

* **get.windowhandle()**: This method helps to get the window handle of the current window
* **get.windowhandles()**: This method helps to get the handles of all the windows opened
* **set**: This method helps to set the window handles in the form of a string. set<string> set= driver.get.windowhandles()
* **switch to:** This method helps to switch between the windows
* **action**: This method helps to perform certain actions on the windows

**23) How to upload a file in selenium**

We can upload files by using  **send\_keys** method. First, we shall identify the element which does the task of selecting the file path that has to be uploaded

Example:

s = driver.find\_element\_by\_xpath("//input[@type='file']")

s.send\_keys("C:\Users\Pictures\Logo.jpg")

**24) what is assertion**?

Assertion is an expression which will verify the actual test outcome with expected test outcome. By using assertion we can find wither test case is really pass or fail

1. Hard Assertion:

When any assert statement fails this type of assertion throws an exception immediately and continues with the next test in the test suite.

2. Soft Assertion:

These types of Assertions are the type of assertions do not throw an exception when an assertion fails and continues with the next step after the assert statement.

## 25)Assertions vs Verify (Soft assert/soft test)

## Assert:

## When we use assert in our tests if assertion statement is failed then the execution of program is stopped

**Verify:**

At times, we might require the test method to continue execution even after the failure of the assertion statements. In TestNG, **Verify** is implemented using **Soft Assert** class.

**26) drag and drop actions**

We can perform drag and drop actions in Selenium with the help of Action Chains class. By using drag\_and\_drop()method

## Syntax:drag\_and\_drop(args1, args2)

Where, args1 is the element on which mouse down operation is done.

And args2 is the element on which mouse up operation is done.

**27) Write a code snippet for launching a Driver with Chrome/Firefox**

From selenium import webdriver

driver=webdriver.Chrome(executable\_path= chromedriver.exe)

driver.get(“url”)

**28)Disadvantage of implicit wait**

The main disadvantage of implicit wait is that it slows down test performance.

An implicit wait in Selenium only works with elements that exist on the page.

29) Types of Wait

Selenium waits are used to pause the execution of the code for a moment. We use it to wait for elements to load in webpage

Types of waits:

1) Implicit wait

2) Explicit wait

30) How to find the links in a webpage and find the broken links

The link or URL that are not reachable is known as broken link

* we can write the script for open browser
* get the website(URL)
* find the all links that exists in webpage using find element method
* list that links
* import request
* by using for loop click all links one by one
* get the URL
* send the request for status code of URL
* if any links status code is equal to 202 then print it is a broken link