Frameworks:

1.What is the Use of framework in Automation Testing?

Framework is generally a set of guidelines which is generally used for beneficial results.

Use of frameworks in Automation testing

1. Code re-usage
2. Higher Portability
3. Reduced Script Maintenance.

2.Whar are the things you consider, use in framework?

1. Scripts execution with proper exception handling.  
2. All steps should be automated as per manual test case.  
3. Proper Coding standards should be followed.  
4. Methods should be used instead of repeating steps as utility methods.  
5. Data should be taken form excel/properties files/Database instead of hardcoded values  
6. In line comments should be provided for readability.

3. different types of frameworks we have in selenium and qtp

Selenium

1. Module Based Testing Framework
2. Library Architecture Testing Framework
3. Data Driven Testing Framework
4. Keyword Driven Testing Framework
5. Hybrid Testing Framework
6. Behavior Driven Development Framework

QTP

1. Keyword-Driven Framework
2. Data-Driven Framework
3. Hybrid Framework

4.What is data driven framework and when it is used?

While automating or testing any application, at times it may be required to test the same functionality multiple times with the different set of input data. Thus, in such cases, we can’t let the test data embedded in the test script. Hence it is advised to retain test data into some external data base outside the test scripts.

Data Driven Testing Framework helps the user segregate the test script logic and the test data from each other. It lets the user store the test data into an external database. The external databases can be property files, xml files, excel files, text files, CSV files, ODBC repositories etc. The data is conventionally stored in “Key-Value” pairs. Thus, the key can be used to access and populate the data within the test scripts.

5.what is Keyword framework and when it is used?

The Keyword driven testing framework is an extension to Data driven Testing Framework in a sense that it not only segregates the test data from the scripts, it also keeps the certain set of code belonging to the test script into an external data file.

These set of code are known as Keywords and hence the framework is so named. Key words are self-guiding as to what actions needs to be performed on the application.

The keywords and the test data are stored in a tabular like structure and thus it is also popularly regarded as Table driven Framework. Take a notice that keywords and test data are entities independent of the automation tool being used.

6.what is Hybrid Test Framework?

The Hybrid Testing Framework is a combination of more than one above mentioned frameworks. The best thing about such a setup is that it leverages the benefits of all kinds of associated frameworks.

7.What is POM and Modular framework?

POM

A Project Object Model or POM is the fundamental unit of work in Maven. It is an XML file that contains information about the project and configuration details used by Maven to build the project. It contains default values for most projects.

Modular Framework.

In most of the web application we have few set of actions which are always executed in the series of actions. Rather than writing those actions again and again in our test, we can club those actions in to a method and then calling that method in our test script. Modularity avoids duplicacy of code. In future if there is any change in the series of action, all you have to do is to make changes in your main modular method script. No test case will be impacted with the change.

8.What is TestNJ and Junit?

TestNG is a testing framework inspired from JUnit and NUnit but introducing some new functionalities that make it more powerful and easier to use, such as:

1. Annotations.
2. Flexible test configuration.
3. Support for data-driven testing (with @DataProvider).
4. Support for parameters.
5. Allows distribution of tests on slave machines.
6. Powerful execution model (no more TestSuite).
7. Supported by a variety of tools and plug-ins (Eclipse, IDEA, Maven, etc...).
8. Dependent methods for application server testing.

JUnit is a Regression Testing Framework used by developers to implement unit testing in Java and accelerate programming speed and increase the quality of code.

JUnit test framework provides following important features

1. Fixtures
2. Test suites
3. Test runners
4. JUnit classes

9.Writing Unit test cases with TestNG?

Writing a test in TestNG basically involves the following steps:

Write the business logic of your test and insert TestNG annotations in your code.

Add the information about your test (e.g. the class name, the groups you wish to run, etc.) in a testng.xml file or in build.xml.

Run TestNG.

10. What are the annotations used in TestNG and Junit?

TestNJ

@BeforeSuite  
@AfterSuite

@AfterTest  
@BeforeGroups  
@AfterGroups

@BeforeClass  
@AfterClass  
@BeforeMethod  
@AfterMethod

Junit Annotations

@Test

@After

@AfterClass

@Before

@BeforeClass

@Ignore

11.What is Group, Suite and Parallel execution in TestNG?

Group:

TestNG allows you to perform sophisticated groupings of test methods. Not only can you declare that methods belong to groups, but you can also specify groups that contain other groups. Then TestNG can be invoked and asked to include a certain set of groups (or regular expressions) while excluding another set.  This gives you maximum flexibility in how you partition your tests and doesn't require you to recompile anything if you want to run two different sets of tests back to back.

Suite:

Test suite is a container that has a set of tests which helps testers in executing and reporting the test execution status. It can take any of the three states namely Active, Inprogress and completed.

A Test case can be added to multiple test suites and test plans. After creating a test plan, test suites are created which in turn can have any number of tests.

Test suites are created based on the cycle or based on the scope. It can contain any type of tests, viz - functional or Non-Functional.

Parallel Execution

TestNG provides an ability to run test methods, test classes and tests in parallel. By using parallel execution, we can reduce the 'execution time' as tests are started and executed simultaneously in different threads.

In testNG we can achieve parallel execution by two ways. One with testng.xml file and we can Configure an independent test method to run in multiple threads.

12.How to decide which test case need to be automated

1. Repetitive tests that run for multiple builds.
2. Tests that tend to cause human error.
3. Tests that require multiple data sets.
4. Frequently used functionality that introduces high risk conditions.
5. Tests that are impossible to perform manually.
6. Tests that run on several different hardware or software platforms and configurations.
7. Tests that take a lot of effort and time when manual testing.

13.What are the steps to be followed in automation?

1. Test Automation Feasibility Analysis - First step is to check if the application can be automated or not. Not all applications can be automated due to its limitations.
2. Appropriate Tool Selection - The Next most important step is the selection of tools. It depends on the technology in which the application is built, its features and usage.
3. Evaluate the suitable framework - Upon selecting the tool the next activity is to select a suitable framework. There are various kinds of frameworks and each framework has its own significance. We will deal with frameworks in detail later this chapter.
4. Build the Proof of Concept - Proof of Concept(POC) is developed with an end to end scenario to evaluate if the tool can support the automation of the application. As it is performed with an end to end scenario which will ensure that the major functionalities can be automated.
5. Develop Automation Framework - After building the POC, framework development is carried out, which is a crucial step for the success of any test automation project. Framework should be build after diligent analysis of the technology used by the application and also its key features.
6. Develop Test Script, Execute and Analyze - Once Script development is completed, the scripts are executed, results are analyzed and defects are logged, if any. The Test Scripts are usually version controlled.

14.What is the use of data provider annotation?

It helps us to write data-driven tests, which essentially means that same test method can be run multiple times with different data-sets. Please note that DataProvider is the second way of passing parameters to test methods. It helps in providing complex parameters to the test methods as it is not possible to do this from XML.

To use the DataProvider feature in your tests you have to declare a method annotated by @DataProvider and then use the said method in the test method using the ‘dataProvider ‘attribute in the Test annotation.

15. What is the difference between Junit and TestNJDifference Between JUnit and TestNG

1. In TestNG, Parameterized test configuration is very easy while It is very hard to configure Parameterized test in JUnit.
2. TestNG support group test but it is not supported in JUnit.
3. TestNG has a feature to configure dependency test. Dependency test configuration for software web application is not possible in JUnit.
4. TestNG support @BeforeTest, @AfterTest, @BeforeSuite, @AfterSuite, @BeforeGroups, @AfterGroups which are not supported in JUnit.
5. Test prioritization, Parallel testing is possible in TestNG. It is not supported by JUnit.
6. View more features of TestNG