1)What is Maven?  
To download the latest jars we use Maven it is a dependency tools  
In Maven we have a file POM.XML here POM (stands for project object model)

2) What is Page object model?  
It is java design pattern used to develop and test webpage

3) Why you are using POM in your frame work?  
To store the elements and method to manage the code in organise way to implement encapsulation concept and to handle StaleElementReference Exception

4) What is stale Element Reference exception?  
It mean address of element change, invalid ,or old We get this exception in following situations after finding the elements and before performing any action on the element if the page is refreshed then we get this exception  
WebElement username = driver.findElement(By.id("T1"));

driver.navigate().refresh();

username.sendKeys("abc");  
  
5)What is the order of execution?  
@Before Suite  
@BeforeTest  
@BeforeClass  
@BeforeMethod  
@Test  
@AfterMethod  
@AfterClass  
@AfterTest  
@AfterSuite

6)If multiple Test methods are present then what is the order of execution?  
Alphabetical order

7)How to execute the multiple test methods in required order?  
Using priority should be always integer value constant and variable and decimal is not allowed  
Default priority is 0 it can be negative number also but it always execute  
in ascending order of priority  
8)If two methods are same priority then methods are executed in alphabetical order  
  
9) How do you execute methods in multiple times?  
 Using invocation count and default value is one(1)variable is not allowed and decimal are not allowed if it is zero or negative then method will not be executed  
  
10)How do you execute a test multiple times with different inputs?  
Using Data Provider

11)How do you handle stale Element Exception?  
By using the POM we can handle  
  
12) How stale element exception can handle in POM class  
Using lazy initialization concept of the POM  
  
13) What is lazy initialization?  
Initialization of the elements inside the method of POM class during run time is called as lazy initialization  
  
14)What happened if you don’t use initElements method in POM class?  
We get Null Pointer Exception if we call its method

15)How do you handle multiple elements in POM class  
Using @FindBy annotation itself but the date type will be List<WebElement>

16)How do you handle alert popup in POM class?  
To handle alert popup in pom class we cannot use @FindBy annotation because we cannot inspect alert popup to handle it we use switchTo().alert() statement for this   
driver variable is requires but it is present as argument for constructor of POM class that is local variable to use driver in multiple methods we use global variable in pom class an global variable we perform 3 steps that is initialization declaration and utilization

17)How to access if data provider present in different class and if it is not inheritance?  
dataProviderClass=classname.class,dataProvider=”methodData provide method should be static   
Second we should specific provide data provide class  
In data provider number of iteration of test methods depends on number of rows of data provider   
number of arguments depends on number of columns of data provider  
  
18)How do you execute only required methods present in the TestNG class?  
We can use enable option default value is True if we make it as false then respective method will not be execute

19)How do I disable the method execution   
Using enable=false Using invocationCount=0  
The above concept is suitable only for few methods to manage large number of methods we use TestNG groups

@Test(groups={"smoke","m1"})

20)How do take screen shot of @Test?  
In selenium we have method called getScreenShotAs it is declared in TakesScreenshot interface but using this method we can take screen shot of web page only(we cannot take screen shot of desktop and popup)  
hence we use Robot class  
  
How do you take screen shot of application whenever any script fails?  
Note:-we don’t know how many script we are exeuting,and which script   
will fails,when it will fails and where it will fails

Ans:-We can do this using listeners

How do you implement this concept?  
Develop a method which take the screen shots with time stamp and we should create a folder by name screenshots in the java project  
Create a class which implement TestNG Listener(ITestListener)so that TestNG listerners are use interfaces  
public class MyListers implements ITestListerner  
Eclise will display for the class name because if it is implementing the interface overriding all the methods are mandatory to override it  
place mouse on the class name and select the Add UnImplementedMethods  
call the method to take the screen shot inside on TestFailureMethod  
 @Override

**public** **void** onTestFailure(ITestResult arg0)   
 {

RobotScreen.*getRobScree*();  
  
Note:TestNG should know the class in which listener is implemented to provide this imformation toTestNG we use @Listeners in FrameWork   
we use this annotation above the parent class of testclass(BaseTest)of testclass when we execute the frame work from onwards will take screen shot whenever any script fails  
  
how do you update test result(testname and status)into excel sheet?  
By using the listeners   
  
how do you print pass count and fail count at the end  
We can use listeners concept  
inside listener class   
we need to declare two static variables as name passcount and failcount  
initialise them with zero they will be increment inside the method  
they will printe inside on  
  
**Handling properties files**Property file is a type of flat file(plain text file)where we store value based on key exempla in java project   
create folder in name called config🡪demo.properties(file lower case) enter the value as shown below  
browser-Firefox  
time=20  
save and close the file  
write the code as shown below and execute

Log4J file:-It is a tool used to capture details information in a file   
File can be any flat file (CSV) very frequently used is .log  
Using log4j we can also generate a logs in HTML format  
Using Log4j we can write message into multiple locations at a same time  
we use Log4j we need jar file it can be downloaded from following  
<URL:-http://logginh.apache.org/log4j/2.0/download.html>  
Note:-Log4j jar file will be available with apache package also  
Download the jar file and and copy paste into java project and associate   
If we try to use the log4j file without configuring it we get warning  
to configure log4J we need to create log4j.properites with following content and file must be stored in src folder of the java

In the layout we specified pattern such  
%C fully qualified class name  
%d date and time  
%n next line  
%c class name  
%m message  
<http://logging.apache.org/log4j/1.2/apidocs.org/log4j/patternLayout.html>  
inside the java project manually create folder with logs  
Write a code as shown below and execute   
In log4j we can capture only required level of information  
by sitting log level in log4j.properties file

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | OFF | Fatal | Error | Warn | Info | Debug | Trace |
| Fatal(String) | N/A | print | print | Print | print | print | print |
| Error(String) | N/A | N/A | print | Print | print | print | print |
| Warn | N/A | N/A | N/A | print | print | print | print |
| Info | N/A | N/A | N/A | N/A | print | print | print |
| Debug | N/A | N/A | N/A | N/A | N/A | print | print |
| Trace | N/A | N/A | N/A | N/A | N/A | N/A | print |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

Orange software URL:-http://opensource.demo.orangehrmlive.com/

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| --- |
| AUTOMATION CONSTANTS |
| BASE TEST @Before Suite  @Before test @Before class |
| Test Class |

1. Class loader will load all the class and it static variable
2. TestNG will call the constructor of Test class(sometime default or user defined) but it should be not argument constructor
3. It automatically calls the no argument (user defined)of constructor of Base Test class which initialises log4j and it will disable any messages printed by selenium
4. Selenium uses log4j and print uses message using the debug method  
   After creating the object of the current test class it will start the execution of the methods based on the annotations
5. **@Before Suite :-**it initialises the extent report and also it initialises the other global variables such as URL username etc by taking the data from property file
6. **Before Test:-** it print the message that execution start on the specific browser
7. **@Before Class:-**open the specified browser and maximise the enter the URL and it will also set the implicit type
8. **@Before method:-** it will mark the start of the current test in extent report and also it will login into application if it is required
9. **@Test:** it execute the automation script as per the test case
10. **@After method:-**it will logout from application if it required it will change the status of the report in extent report to pass or fail based on the status of test method of TestNG then will mark the end of current test in extent report
11. **@After class** close the browser
12. **@After test:-**it print the message that execution on the browser is over
13. @**After suite:-**it will publish the extent report