**Follow up questions - please answer these in your text document:**

1. How could you reduce the time to execute some or all of these test cases or if you had several sites to test?   
  
By running tests in parallel  
By using explicity waits

2. Briefly (a few sentences is fine) describe how you would set up a pipeline on your preferred source control management platform to perform continuous integration testing of a simple front end web-based application

I will check tools that are suitable to the environment or are within the tech stack that is used within an organisation.  
These are the aspect; I will need to consider

Source = git .svn

Build = Gradle. Jenkins. Azure Pipeline and AWS Code build

Test = Selenium, Jest

Deployment =Ansible, Azure pipeline -deployment

3.Describe briefly how you would run performance testing against a web-based application.

I will need to set up environment to perform testing  
Determine the performance criteria  
Plan the test  
Prepare data for each transaction/ flow

Can predict number of users that will access the system and execute test using your tool(jmeter)

Ensure that you have a file report configured so you can analyse the results

4.Describe briefly what kind of security testing you might perform against a web-based application.

You can test Authorization and authentication   
Test URL manipulation through http get method  
Check sql injection  
Cross site scripting

5.Describe how you might build in exception and error handling to your application.

You should not ignore exceptions  
Clean up resources in a finally or use a try-with-resource statement

**Reference**

<https://www.bmc.com/blogs/ci-cd-pipeline-setup/>

<https://www.softwaretestinghelp.com/security-testing-of-web-applications/>

<https://stackify.com/best-practices-exceptions-java/>