**1. Mention what is Jenkins?**

Jenkins is an open source tool with plugin built for continuous integration purpose. The principle functionality of Jenkins is to keep a track of version control system and to initiate and monitor a build system if changes occur. It monitors the whole process and provides reports and notifications to alert.

**2. Explain what is continuous integration?**

In software development, when multiple developers or teams are working on different segments of same web application, we need to perform integration test by integrating all modules. In order to do that an automated process for each piece of code is performed on daily bases so that all your code get tested.

**3. What are the features of Jenkins?**

- Free open source.

- Easy installation on various operating systems.

- Build Pipeline Support.

- Workflow Plugin.

- Test harness built around JUnit.

- Easy upgrades.

- Rapid release cycle.

- Easy configuration setup.

- Extensible with the use of third-party plugins.

**4. What are the advantages of Jenkins?**

Advantage of Jenkins include

- At integration stage, build failures are cached

- For each code commit changes an automatic build report notification generates

- To notify developers about build report success or failure, it is integrated with LDAP mail server

- Achieves continuous integration agile development and test driven development

- With simple steps, maven release project is automated

- Easy tracking of bugs at early stage in development environment than production

**5. Explain how you can move or copy Jenkins from one server to another?**

- Slide a job from one installation of Jenkins to another by copying the related job directory

- Make a copy of an already existing job by making clone of a job directory by a different name

- Renaming an existing job by renaming a directory.

**6. Mention some of the useful plugins in Jenkins?**

Some of the important plugins in Jenkin includes

- Maven 2 project

- Amazon EC2

- HTML publisher

- Copy artifact

- Join

- Green Balls

**7. What is the difference between Hudson and Jenkins?**

There is no difference between Hudson and Jenkins. Hudson was the former name of Jenkins, after going through several issues the name was changed to Jenkins.

**8. Which command is used to start Jenkins?**

You can follow the below-mentioned steps to start Jenkins:

- Open Command Prompt

- From the Command Prompt browse the directory where Jenkins. war resides

- Run the command given below:

D:\>Java –jar Jenkins.war

**9. What is Jenkinsfile?**

The text file where all the definitions of pipelines are defined is called Jenkinsfile. It is being checked in the source control repository.

**10. What is Jenkins Pipeline? What is a CI CD pipeline?**

The pipeline can be defined as the suite of plugins supporting the implementation and integration of continuous delivery pipelines in Jenkins.

Continuous integration or continuous delivery pipeline consists of build, deploy, test, release pipeline. The pipeline feature saves a lot of time and error in maintaining the builds. Basically, a pipeline is a group of build jobs that are chained and integrated in sequence.

**11. What is SCM?**

- SCM stands for Source Control Management.

- SCM module specifies the source code location.

- The entry point to SCM is being specified as jenkins\_jobs.scm.

- The job specified with ‘scm’ attribute accepts multiple numbers of SCM definitions.

**12. Explain how you can clone a Git repository via Jenkins?**

To clone a Git repository via Jenkins, you have to enter the e-mail and user name for your Jenkins system. For that, you have to switch into your job directory and execute the “git config” command.

**13. Mention what are the two components Jenkins is mainly integrated with?**

Jenkin is mainly integrated with two components

- Version Control system like GIT, SVN

- And build tools like Apache Maven.

**14. Explain how you can set up Jenkins job?**

To create a project that is handled via jobs in Jenkins. Select New item from the menu, once this done enter a name for the job and select free-style job. Then click OK to create new job in Jenkins. The next page enables you to configure your job.

**15. Explain how you can deploy a custom build of a core plugin?**

To deploy a custom field of a core plugin, you have to do following things

- Stop Jenkins

- Copy the custom HPI to $Jenkins\_Home/plugins

- Delete the previously expanded plugin directory

- Make an empty file called <plugin>.hpi.pinned

- Start Jenkins

**16. What is the programming language used to build Jenkins?**

Jenkins is an open source automation server written in Java.

**17. What is a Continuous delivery pipeline?**

A continuous delivery pipeline is an automated expression of your process for getting software from version control right through to your users and customers.

**18. What is agent in Jenkins?**

The agent section specifies where the entire Pipeline, or a specific stage, will execute in the Jenkins environment depending on where the agent section is placed. The section must be defined at the top-level inside the pipeline block, but stage-level usage is optional.

**19. What are stages?**

Containing a sequence of one or more stage directives, the stages section is where the bulk of the "work" described by a Pipeline will be located. At a minimum it is recommended that stages contain at least one stage directive for each discrete part of the continuous delivery process, such as Build, Test, and Deploy.

**20. What is Scripted Pipeline in Jenkins?**

Scripted Pipeline, like Declarative Pipeline, is built on top of the underlying Pipeline sub-system. Unlike Declarative, Scripted Pipeline is effectively a general purpose DSL [2] built with Groovy. Most functionality provided by the Groovy language is made available to users of Scripted Pipeline, which means it can be a very expressive and flexible tool with which one can author continuous delivery pipelines.

**21. Mention pre-requisites for using Jenkins?**

Pre-requisites are:

- Access to source code management repository like GIT or SVN repository.

- Build script that should be working like mavens builds script.

**22. How do you start the Jenkins manually?**

The steps are as follow:

- Open the command line prompt and go to Jenkins installation directory.

- ‘Jenkins.exe start’ command helps in starting the Jenkins.

- ‘Jenkins.exe restart’ to restart Jenkins and ‘Jenkins.exe stop’ to stop Jenkins.

**23. Mention steps to copy/move Jenkins from one server to other?**

The steps are as follows:

- Copy the whole Jenkins directory from the first server and paste it to other servers.

- Make a copy of existing job by cloning a job directory with a different name.

- Rename an existing job by renaming the directory.

**24. How can we schedule build in Jenkins?**

Whenever a change is committed in a repository, scheduled at a specified time, build manually and other builds get completed.

**25. How do you secure Jenkins?**

- Global security should be enabled.

- Jenkins should be integrated with appropriate plugins.

- Automate the process of setting rights and privileges.

- Limit the physical access to folders.

- Periodically run security audits.