**1)What is Jenkins?**

**Answer:**

Jenkins is an open-source automation server written in Java. Jenkins helps to automate the non-human part of the software development process, with continuous integration and facilitating technical aspects of continuous delivery. It is a free community tool and has a very large community that contributes to it regularly. It is highly modifiable and adaptable and has a support for a very large number of plugins. It can run on any major platform without any compatibility issues.

**2)How do you store credentials in Jenkins securely?**

**Answer:**

Credentials can be stored securely in Jenkins using the Credentials plugin, which stores different types of credentials like - Username with a password, SSH username with the private key, AWS Credentials, Jenkins Build Token, Secret File/Text, X509 & other certificates, Vault related credentials securely with proper encryption & decryption as and when required.

**3) What is Continuous Integration?**

**Answer:**

In Continuous Integration, after a code commit, the software is built and tested immediately. Jenkins used for orchestrating a chain of actions for Continuous Integration in a software project. Before Jenkins when all Developers had completed their assigned coding tasks, they used to commit their code all at same time.

**4) What is git cherry-pick? What are the scenarios in which git cherry-pick can be used?**

**Answer:**

git cherry-pick can be useful for undoing changes. For example, say a commit is accidently made to the wrong branch. You can switch to the correct branch and cherry-pick the commit to where it should belong. When to use

Cherry picking is the act of picking a commit from a branch and applying it to another. git cherry-pick can be useful for undoing changes. a team will find individual members working in or around the same code. Maybe a new product feature has a backend and frontend component. There may be some shared code between to two product sectors. Maybe the backend developer creates a data structure that the frontend will also need to utilize. The frontend developer could use git cherry-pick to pick the commit in which this hypothetical data structure was created. This pick would enable the frontend developer to continue progress on their side of the project.

**5) How can you set up a Jenkins job?**

**Answer:**

Jenkins has developed using JAVA code. Therefore, we will install appropriate java program (Like (JAVA8/JAVA11) before installing JAVA. Once we will install JAVA program, we will copy path of installed Java Directory which will help us later to make environment of it by pasting it into system variable path

We will download and install Jenkin by giving username and password. After that we will have to have to unlock it by browsing local host:8080 it will direct to unlock the Jenkin for the first time. We will be logging in using first automated generated password. It can be found in installed directory. We will go secret folder inside Jenkins and find a long intialadminpassword.

To create jobs into the Jenkins, the first step is to login into the jenkins console. And then click on the new jobs or new items on the console After clicking button, we will be able to see the different types of jobs which can be created

**6. How can you create and assign roles in Jenkins?**

**Answer:**

We can create and assign role from “manage Jenkins” where we can create role and users.

**7. What is the difference between git checkout [branch name] and git checkout -b [branch name]?**

**Answer:**

git checkout [branch name] will move into another branch from current master/branch. git checkout -b [branch name] will create under the head.

**8. What is the difference between cherry-pick and pull request?**

**Answer:**

Pull request Fetches the changes AND merges them into the local branch of the same name. Cherry-pick: Fetches the commit and plays it on top of the current local branch, thus creating an entirely new commit which happens to have same changes as the one it fetched.

**9. How to install a plugin in Jenkins?**

**Answer:**

We will open Jenkins. We will go manage Jenkins and search require plugin. Once we find it we will click that and click download now install after restart.

**10. What is agent and how to create agent?**

**Answer:**

An agent is typically a machine, which connects to a Jenkins controller and executes tasks when directed by the controller.

To create agent, we will Click on Manage Jenkins/New Node. We will fill all the credential like name and choosing Permanent Agent Enter the following details: Name: Name of the node to be displayed in Jenkins # of executors etc and save it.