DevOps Oral Exam Questions and Answers

What is version control and why is it important in DevOps?

Version control is a way to keep track of changes made to files, especially code, so you can see what changed and go back if needed. It's important in DevOps because it helps teams work together without conflicts and keeps a history of all changes.

What is the difference between Git and GitHub?

Git is a tool that tracks changes in your code on your computer. GitHub is a website where you store your Git code online to share and work with others.

What is the staging area in Git?

The staging area is a place where you prepare changes before saving them permanently. It lets you choose which changes to keep.

What should you be careful about when merging branches?

You should check for conflicts between changes, make sure everything works well together, and test the code after merging.

Can you undo changes after a commit? How?

Yes, you can undo with commands like `git revert` to make a new commit that cancels earlier changes, or `git reset` to go back to an older version.

What is Jenkins?

Jenkins is a tool that helps automate building, testing, and releasing software continuously.

What is CI/CD?

Continuous Integration means automatically adding and testing code changes often. Continuous Delivery means automatically preparing the tested code for release.

What are Jenkins pipelines?

Pipelines are scripts that tell Jenkins how to build, test, and deploy your project step-by-step.

What's the difference between declarative and scripted pipelines?

Declarative pipelines use simple, easy-to-read code. Scripted pipelines allow more complex actions with programming.

Give examples of plugins Jenkins uses.

Plugins connect Jenkins with tools like Git, Maven, Docker, and Slack.

What is containerization?

Containerization packs an app and everything it needs to run into one unit that works the same everywhere.

Difference between Docker image and container?
An image is the blueprint; a container is the running app from that blueprint.

What is a Dockerfile?
A file that tells Docker how to create an image with instructions and setup steps.

What is Docker Hub?
A website to find, store, and share Docker images.

How do you run a Docker container?
First build an image with `docker build`, then run it with `docker run`.

What is configuration management?
Managing and keeping systems set up the same way, automatically.

Name some configuration management tools.
Ansible, Puppet, Chef, SaltStack.

What is Infrastructure as Code (IaC)?
Writing code to set up computers and networks automatically instead of doing it by hand.

What are Ansible ad hoc commands?
Quick one-time commands run on computers without writing a long script.

Why use Ansible?
It's easy to use, doesn't need extra software on computers, and helps automate setup.

What is Selenium?
A tool that automates testing of websites.

How do you use Selenium in Jenkins?
Create a Jenkins job that runs Selenium tests automatically after each change.

Why combine Selenium and Jenkins?
It helps find problems fast by testing code often without manual work.

Why use Python Virtual Environments in testing?
To keep test tools and packages separate so they don't mix with other projects.

Compare Waterfall, Agile, and DevOps.
Waterfall is step-by-step without going back, Agile is flexible with quick changes, and DevOps adds teamwork between developers and operations to deliver faster.

What are DevOps benefits?
Faster software delivery, better teamwork, fewer mistakes, and happier customers.

How does DevOps speed up development?
By automating builds, tests, and deployments and improving communication.

How does version control help DevOps teams?

It keeps track of code changes and helps team members work without conflicts.

What challenges come with DevOps?

Changes in culture, learning new tools, and getting everyone on the same page.