Week 8 Jenkins Question Answer

Here’s a well-structured set of **answers** for your Jenkins questions:

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1. What is Jenkins primarily used for?

👉 Jenkins is primarily used for **Continuous Integration (CI) and Continuous Delivery (CD)**, automating the process of building, testing, and deploying applications.

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2. What is a feature of Jenkins?

👉 One major feature is its **extensibility through plugins** that allow integration with various tools such as Git, Docker, Kubernetes, Maven, and more.

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3. What is the default port on which Jenkins runs?

👉 Jenkins runs on **port 8080** by default.

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4. What can be integrated with Jenkins for version control?

👉 Jenkins can integrate with **Git, Subversion (SVN), Mercurial, CVS, and Bitbucket**, with Git being the most widely used.

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5. What is the purpose of Jenkins plugins?

👉 Plugins extend Jenkins’ functionality by allowing integration with build tools, SCMs, testing frameworks, deployment tools, and monitoring systems.

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6. Which type of Jenkins job is best suited for running one-off tasks or small scripts?

👉 The **Freestyle Project** job type is best suited for running simple, one-off tasks or scripts.

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7. How can you manage sensitive information such as API keys in Jenkins?

👉 Use the **Jenkins Credentials Plugin** to securely store API keys, passwords, and SSH keys. These credentials can then be referenced in pipelines or jobs without exposing them in code.

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8. What does the "Blue Ocean" feature in Jenkins refer to?

👉 **Blue Ocean** is a modern Jenkins UI that provides:

* A visual representation of pipelines

* Better user experience and easier navigation

* Real-time pipeline status visualization

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9. (Repeated) What does the "Blue Ocean" feature in Jenkins refer to?

👉 Same as above: It’s the **modern pipeline visualization UI** for Jenkins.

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10. Which Jenkins component allows for distributed builds across multiple machines?

👉 **Jenkins Agents (or Slaves)** allow distributed builds by offloading work from the Jenkins Master (Controller) to multiple machines.

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11. List at least five Jenkins plugins important for a microservices-based CI/CD pipeline.

1. **Git Plugin** – integrates Jenkins with Git repositories.

2. **Pipeline Plugin** – enables the definition of jobs as code (`Jenkinsfile`) for better automation.

3. **Docker Plugin** – allows building, running, and publishing Docker images for microservices.

4. **Kubernetes Plugin** – integrates with Kubernetes to dynamically provision build agents and deploy services.

5. **SonarQube Plugin** – for static code analysis and code quality checks.

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12. Steps to install a plugin in Jenkins through the Jenkins UI:

1. Go to **Manage Jenkins → Manage Plugins**.

2. In the **Available** tab, search for the desired plugin.

3. Select the plugin and click **Install without restart** or **Download now and install after restart**.

4. Restart Jenkins if required.

👉 **Considerations:**

* Ensure plugin **compatibility with your Jenkins version**.

* Check dependencies before installation.

* Keep plugins **updated** to patch security vulnerabilities.

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13. (Repeated) Steps to install a plugin in Jenkins through the Jenkins UI

👉 Same as above (see Answer 12).

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14. After installing a plugin, how would you configure it? (e.g., Git Plugin)

👉 Example: **Git Plugin** setup

1. Go to **Manage Jenkins → Global Tool Configuration**.

2. Under **Git**, specify the path to the Git executable or install automatically.

3. Add **GitHub credentials** via the Credentials Plugin.

4. In your pipeline or freestyle job, configure the SCM section to point to the Git repository.

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15. Common issues with Jenkins plugins and troubleshooting:

* **Dependency conflicts** → Ensure all required dependent plugins are installed and updated.

* **Version compatibility** → Use plugins that match your Jenkins version; check plugin changelogs before updating.

* **Broken UI/Functionality after updates** → Roll back to a stable plugin version.

* **Security vulnerabilities** → Regularly update plugins and monitor Jenkins security advisories.

* **Performance issues** → Remove unused plugins to reduce overhead.

👉 **Troubleshooting:**

* Check Jenkins logs (`jenkins.log`) for error messages.

* Disable/rollback recently updated plugins.

* Test plugin upgrades in a staging Jenkins instance before production.

Would you like me to also prepare a **condensed tabular version (Q\&A style)** for quick revision before interviews?