

Certified Jenkins engineer

1.What type of security allows for configuration of different contexts?

- A. Cascade
- B. Granular
- C. Matrix
- D. ACL

2.SMS, Email, and instant messaging are all configurable types of what?

- A. Results
- B. Communications.
- C. Notification
- D. Information

3.What is the term for the storage location for source code and artifacts?

- A. Retainer
- B. Repository
- C. Checkpoint
- D. Library

4.What is a Jenkinsfile?

- A. It is the backing file for a freestyle project.
- B. It is the web version of Jenkins.
- C. It is the definition of a pipeline.
- D. It is the file that is used to setup JNLP agents.

5. What is the purpose of build promotion?

- A. It allows versioning of triggers.
- B. It prevents failed builds from showing up in the dashboard.
- C. It indicates which builds are trusted, and only allows those builds' artifacts to be used in downstream builds.
- D. It allows the folder health metric to show accurate information.

6. In what scope is a library considered to be "trusted?"

- A. Global
- B. Local
- C. View
- D. Job

7. Which of the following are methods to promote a build?

- A. By polling build results
- B. Based on the status of configured downstream jobs
- C. Via an upstream trigger
- D. Manually

8. What is the type of job/project that is most often used to run shell commands in Linux, or batch commands in Windows?

- A. Pipeline
- B. Matrix
- C. Freestyle
- D. Folder

9.If the global job context sets read and build permission for authenticated users, which jobs does that user have access to build?

- A. Any job that inherits global permissions
- B. Any job that inherits global permissions from its parent
- C. All the jobs on the server
- D. Any job that is not in a folder

10. What is a single item of work in a Jenkins project or pipeline called?

- A. Stage
- B. Step
- C. Task
- D. Node

11. Which of the following are notification types in Jenkins?

- A. Datagram
- B. imessage
- C. SMS
- D. Email

12. Your Jenkins server has project-based matrix security enabled. You have just onboarded a new developer that is on a short-term contract. This user is part of the Global LDAP realm as a developer. You do not want that user to have access to all of the developer projects, but you want them to be able to access one single job. What is the best way to accomplish this?

- A. Set global permissions to allow the user to access the Jobs context.
- B. Set a global deny on all but the job that the user requires access to.
- C. Make sure that the necessary read permissions are in place globally, then remove inheritance, and apply the desired permissions on the object level.
- D. Set a specific global permission on the users account that has access to the entire jobs context.

13. Archiving artifacts is accomplished at what stage of the freestyle project?

- A. Post build action
- B. Build environment
- C. Build tool configuration
- D. Build step

14. On a Jenkins master with CSRF protection enabled, what is required in rest calls to ensure that the call is allowed to be executed?

- A. Token
- B. API Pass
- C. Private key
- D. Crumb

15. Where is the data store located for the Jenkins built-in security realm?

- A. In a NoSQL database, in the master nodes /data directory
- B. In an encrypted flat file in the Jenkins root directory
- C. In a SQLite database .sql file in the /var/lib/jenkins/data directory
- D. In a PostgreSQL database on the Jenkins master

16. Your company has a multiconfiguration build that requires that a portion of the build be completed on a Windows build node. You do not have SSH available on that node. What is another method that can be used to implement the build agent on the Windows node?

- A. JNLP
- B. SCP
- C. SMTP
- D. FTP

17. Which of the following are reasons for distributing a build?

- A. To prevent overloading the Master node
- B. To allow for custom architecture on the build agent
- C. To allow more time for the build to complete while other work is taking place
- D. To prevent users from accessing the build workspace directly

18. What is the definition of fungible?

- A. Replaceable
- B. Remotely accessible
- C. Standardized
- D. Ephemeral

19. Why isn't it important to create a disaster recovery plan for Jenkins build agents?

- A. Agent nodes never fail.
- B. Agent nodes are not necessary, and if they are not available the master will auto failover.
- C. Agents should be replaceable, and shouldn't have important data located on the agent node.
- D. Agent failure is taken into account on distributed builds.

20. What are two of the ways in which masters and agents communicate?

- A. RDP and WMI
- B. SSH and SCP
- C. FTP and JNLP
- D. SSH and JNLP

21. How are fingerprints stored?

- A. As a manifest inside the pipelines Jenkins folder
- B. In the successful builds directory, as an XML file
- C. In the fingerprints directory, in a sub directory based on the file name
- D. In the Jenkins home directory, under fingerprints, with each one in a hierarchy based on its hash

22. This is the process of removing unwanted or untracked files from the local repository and then pulling changes.

- A. Incremental Checkout
- B. Clean Checkout
- C. Validated Checkout
- D. Trusted Checkout

23. What is used to track the changes between builds in Jenkins?

- A. Change Tracker
- B. Build Manager
- C. Changelogs
- D. Difference Engine

24. In a default installation of Jenkins, what is the name of the plugin that provides security contexts, such as Job and View?

- A. Global security
- B. Matrix Security
- C. The SecureHook plugin
- D. Project Based Security

25. What test checks the software to ensure that it is ready for full testing?

- A. Smoke test
- B. Verification test
- C. Process test
- D. Acceptance test

26. Builds in which executors are located on agent nodes are called?

- A. Slave builds
- B. Remote builds
- C. Distributed builds
- D. Agent builds

27. When I have code that had been validated locally, and I am ready to send it to a repository I would:

- A. Increment the code
- B. Check in the code
- C. Replace the code
- D. Export the code

28. What are runnable tasks that are controlled by Jenkins called?

- A. Plugins or extensions
- B. Stages or parts
- C. Jobs or projects
- D. Tickets or stages

29. Which of the following are job types in Jenkins?

- A. Freestyle, Pipeline, and Multisite
- B. Freestyle, Pipeline, and Multiconfiguration
- C. Pipeline, Git Organization, and Release
- D. Pipeline, Spring, and Monitor

30. What is meant by the term Authentication?

- A. Verifying who you are
- B. Verifying what you are allowed to do
- C. Checking software licensing
- D. Determining permissions

31. In order to determine that permissions are working as intended we would need to perform a/an _ ?

- A. Inspection
- B. Adjustment
- C. Audit
- D. Investigation

32. This is the result of a single execution of a pipeline or job.

- A. Build
- B. Artifact
- C. Credential
- D. Step

33. What is the term for managing and provisioning resources via configuration files?

- A. Servers as Code
- B. Serverless architecture
- C. Infrastructure as code
- D. Infrastructure definition

34. When a project is broken down into its runnable parts, what are those parts called?

- A. Tokens
- B. Steps
- C. Stages
- D. Tickets

35. Which of the following are methods used to trigger a job from another job?

- A. Build when another build is done
- B. Via a webhook
- C. Trigger another build on successful build
- D. Using the drop-down menu in the post build action section of the freestyle build configuration page

36. When using value stream maps with agile methods, what is the key metric that we are trying to improve?

- A. Process efficiency or PE
- B. Developer coding time
- C. The non standard build times
- D. Build times on the serve

37. What is the name of the tool used for generating Groovy scripts in the Jenkins UI?

- A. Code crafter
- B. Groovy maker
- C. Pipeline generator
- D. Snippet generator

38. What is meant by upstream and downstream jobs?

- A. This term refers to the different locations in an SCM repository.
- B. This refers to jobs that are part of a linked set, upstream builds before downstream, and the jobs are triggered from one another.
- C. This describes jobs that are produced from the API.
- D. This is the term for the ordering of the list of plugins in the plugin manager.

39. How is a string parameter passed to a job made available to that job?

- A. As an environment variable named for the key that contains the value
- B. As a file in the workspace
- C. As a function whose return is the value of the string
- D. As an object named `$_` that has a property `$_value` that contains the string.

40. What is the purpose of a Global library?

- A. They allow for code reuse in pipelines.
- B. These are the repositories that plugins are installed from.
- C. This is the term for Jenkins local databases.
- D. This is the term for the lib folders in `$JENKINS_HOME`.

41. Which of the following are reasons to express pipelines as code?

- A. Processing jobs as code is faster than using the GUI.
- B. They can be committed to source control.
- C. Developer convenience
- D. Configuration reversion

42. Which type of pipeline most resembles a free style job?

- A. Matrix
- B. Scripted
- C. Declarative
- D. Triggered

43. What is the reason for Value Stream Mapping (VSM)?

- A. It ensures that security guidelines are followed.
- B. VSM is used to identify areas where improvements can be made, to make processes as efficient as possible.
- C. It determines which tools to use to build software.
- D. It provides guidelines for how to deploy software

44. Functions that are deemed to be unsafe, but need to be run anyway, can be enabled in the Groovy sandbox by what method?

- A. By configuring the sandbox to allow them to run
- B. By an administrator approving it manually
- C. Allow the local sandbox to run globally.
- D. They need to be moved over to the global library.

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46. Using the parameterized trigger plugin, how is the parameter exposed to the job that is triggered?

- A. It is passed in as a variable using the triggering job's name.
- B. The passed parameter is referenced by the pass_param variable in the receiving job.
- C. It is copied to the jobs config.xml, and can be referenced by the \$_ special variable.
- D. The receiving job must be configured to use the parameter key that is passed, then it is exposed as a normal local parameter.

47. What is one of the major advantages of a pipeline?

- A. They allow you to keep a record of build results and last known good builds output.
- B. They allow you to include all of the branches of your source code management system in your build server.
- C. They allow you to maintain versioning of your source code, allowing for rollback.
- D. They allow you to configure more complex, long-running tasks, and define them in code.

48. What is the purpose of a multibranch pipeline?

- A. It allows guest access to the build job.
- B. It scans a repository and creates projects for all branches that contain a Jenkins file, and builds those branches using that file.
- C. It allows context switching of the pipeline process.
- D. It allows freestyle projects to be incorporated in the pipeline.

49. What are the two types of pipelines?

- A. Routed and static
- B. Staged and unstaged
- C. Declarative and scripted
- D. Processed and standard

50. What is the difference between push and pull when triggering?

- A. Push is when build results are published, and pull is when the results have to be manually downloaded.
- B. Push requires that you have SSH access to the agent node, and pull requires that the agent have access to the master.
- C. Push is when an event notification is sent, and pull is when an event is discovered via polling.
- D. One is used for jobs, and one is used for SCM.

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- D. Set a specific global permission on the user's account that has access to the entire jobs context.

52. In your company there is a template that is used for email notifications, you have been asked to provide a custom notification output for a specific job so that the team responsible can ingest the email in a programmatic way and use it to generate internal reports. How would you implement this without disrupting the Global email template?

- A. Set the template in email-ext plugin section of the specific job's post build actions.
- B. Set the template in the email-ext plugin under manage Jenkins > Global configurations so that it will be auto-filled at the job level.
- C. Configure the job so that it does not notify, create a build step to run a script that sends the notification.
- D. Un-install the email-ext plugin and configure the build tool to send the notification.

53. Which of the following are types of Source Control systems?

- A. Mercurial
- B. TLS
- C. RabbitMQ
- D. SVN

54. In a distributed build where the artifacts are not archived, where will the artifacts be located?

- A. You'll find them in the build workspace on the agent node that ran the build..
- B. Once the build is complete, the agent node sends the contents of the workspace to the master node.
- C. Remote Agents do not produce artifacts unless you provide a git repo to contain them in the job definition.
- D. The files build on remote agents are sent back to the master node in

55. On a Jenkins master with CSRF protection enabled, what is required in rest calls to ensure that the call is allowed to be executed?

- A. Token
- B. APIPass
- C. Private key
- D. Crumb

56. What is used to start a build automatically in response to a pre-configured action taking place?

- A. Stage
- B. Webhook
- C. Trigger
- D. Buildstep

57. In order to execute a build using a build tool, where must the build tool be installed?

- A. In the Jenkins user interface
- B. On the executing agent's node
- C. SCM
- D. Workspace

58. What parameter is used to limit the amount of information that is returned by the Rest API?

- A. Limit
- B. Nesting
- C. Depth
- D. Length

59. When configuring Jenkins to consume test reports, what part of a freestyle project contains this configuration?

- A. Post-build action
- B. Source Code Management
- C. General
- D. Build step

60. In your organization, you have a new employee that has joined the QA group. This team has a folder on your Jenkins server that uses project-based matrix security. You are told that the new employee cannot see the folder once they have logged in. Global permissions are set to allow authenticated users read access at both the overall context and the job context, what is the most likely cause?

- A. The folder permissions need to be set to allow authenticated users to access the folder.
- B. The folder settings need to be changed to inherit from global.
- C. The user is not a part of the authenticated users group.
- D. The folder is set to disable global inheritance, and the user does not have at least read access to the folder.

61. In what section of the configuration of a freestyle project is 'Publish JUnit Test results' located?

- A. Build
- B. Build Parameters
- C. Post build
- D. Source Code Management

62. What is the difference between SCM polling and a webhook?

- A. Polling is an audit tool used to determine if the webhook is configured on a repository.
- B. The webhook monitors the build to determine if it needs to poll the SCM for code changes.
- C. A webhook is used to configure Jenkins to perform the polling of the SCM.
- D. Polling is a scheduled look at the SCM repos for changes, while a webhook is used to notify on a change to a repository in an SCM

63. When executing a script in a build step, where is the script run?

- A. In the location defined in the build parameters
- B. They are stored as artifacts and run from the archive folder.
- C. In the project workspace on the executing build agent's node
- D. In `/var/lib/jenkins/scripts` on Linux, and `C:\users\jenkins\app_data` on Windows

64. In the install of Jenkins you discover that there is a feature that you are needing to complete the requirements for your companies build environment, in order to add / extend the functionality of Jenkins what method is provided?

- A. Jenkins uses plugins to extend its functionality and these are accessed and managed in the plugin manager in the GUI.
- B. you would need to locate the add-on that has the functionality that you need and then install it in the Lib folder and activate it in the GUI.
- C. In the configure Jenkins tab on the dashboard there is a Global configuration option that lets you select what functions are included in your installation of Jenkins.
- D. There is not one, Jenkins is not an extensible program. In order to get the feature that you are needing you would need to install the correct version of Jenkins.

65. What protocol is used for agents when SSH is not available?

- A. JNLP
- B. TLS
- C. HTTP
- D. Putty

66. In your company there are two teams. One is concerned with the user interface, and the other is more concerned with backend. The UI team uses Windows machines, and the backend team uses Linux based machines. What could be done to ensure that both teams can use the same Jenkins server?

- A. Create a Jenkins master on Windows, and one on Linux, and use them to create builds.
- B. Create and tag build agents for Windows and Linux, then configure the builds to run on those agents.
- C. Windows masters can build Linux projects to install the master on windows.
- D. Linux Jenkins masters are capable of building Windows code

67. Your company requires that you run tests on the software against 32-bit Windows, but these tests only occur rarely. What is the best way to facilitate this?

- A. You can set up a build agent that meets the requirements and only enable that agent, or turn on that agent, when needed.
- B. Create an agent on hardware, and ensure that it is always available.
- C. Install Jenkins on 32-bit Windows and use that for the master node.
- D. Inform the company that this is not possible, since 32-bit windows is no longer available.

68. Why does build retention policy matter on the Jenkins master?

- A. It ensures that file corruption does not occur.
- B. The master slows down due to indexing.
- C. It prevents disk bloat, which causes low disk space issues on the master node.
- D. It reduces the amount of data required to be transferred to agent nodes

69. What is meant by the term fungible (replaceable) agents?

- A. Agents that are not part of a cluster
- B. Agent nodes that are not currently running a build
- C. Virtualized agent nodes
- D. An agent that can be destroyed and replaced without affecting its configuration

70. If you have an agent node that is compromised by a malicious actor, and has malware installed, what is the recommended remediation action?

- A. Replace the agent.
- B. Revert to a previous build.
- C. Change all passwords on the master node.
- D. Shut down all of the build systems.

71. What container technology is supported natively in Jenkins?

- A. Ansible
- B. Kubernetes
- C. Docker
- D. Virtuozzo

72. Which of the following are build architecture considerations in distributed builds?

- A. Physical location
- B. Virtual or physical build node
- C. The bitness of the platform, 32 or 64
- D. Operating system

73. Which of the following are cloud platforms?

- A. Clearpoint
- B. GCP
- C. AWS
- D. Azure

74. What is meant by 'core' Jenkins?

- A. The xml configuration files contained in \$JENKINS_HOME
- B. All of the folders in \$JENKINS_HOME with the exception of jobs and workspaces
- C. The base install of Jenkins with the suggested plugins
- D. The Jenkins master only

75. Where is the workspace that the agent uses in a distributed build?

- A. It is in a zipped folder in the archive section of the master.
- B. SCM
- C. On the executing agent
- D. It is located on the master.

76. What is the best practice, concerning tool installation on agents?

- A. Only build tools that are available in Jenkins should be used.
- B. The installation should be done automatically in Jenkins.
- C. The method of installation and the location that they are installed should be standardized.
- D. Build tools should be limited to the default build tools.

77. In Jenkins, what is Remoting?

- A. An API call that lists all of the connected agents
- B. The backend library that manages remote connections to agents
- C. The section of a job configuration that indicates that the job is distributed
- D. The configuration section in security that determines what port the JNLP connector runs on

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79. When I have code that had been validated locally, and I am ready to send it to a repository I would:

- A. Increment the code
- B. Check in the code
- C. Replace the code
- D. Export the code

80. This is the practice of integrating small changes to code frequently.

- A. Continuous Check-in
- B. Continuous Integration
- C. Continuous Delivery
- D. Continuous Deployment

81. What does the term Authorization mean?

- A. Verifying what you are allowed to do
- B. Verifying who you are
- C. Checking to ensure that permissions are working as intended
- D. Checking software licensing

82. These immutable files are generated during a pipeline run or a build.

- A. Fingerprints
- B. Artifacts
- C. Archives
- D. Repositories

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85. What is the item that is used to organize projects in Jenkins?

- A. Container
- B. Matrix job
- C. Organizational unit
- D. Folder

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90. What is the primary purpose of notifying on build failure?

- A. To allow the person who broke the build to correct the build as quickly as possible
- B. to provide insight into the configuration of the build tools that were used.
- C. to monitor the status of the master node.
- D. to determine the person responsible for breaking the build

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