1. What does the `git clone` command do?

- A) It creates a new Git repository
- B) It downloads an existing repository from a remote server
- C) It merges two branches
- D) It deletes a repository

Answer: B) It downloads an existing repository from a remote server

2 . Which of the following Git commands is used to stage changes for commit?

- A) `git add`
- B) `git commit`
- C) `git push`
- D) `git pull`

Answer: A) `git add`

3. What is the purpose of the `git commit` command?

- A) To update the remote repository
- B) To save changes to the local repository with a message
- C) To add files to the staging area
- D) To check for changes in the repository

Answer: B) To save changes to the local repository with a message

4. Which command is used to view the commit history of a Git repository?

- A) `git log`
- B) `git history`
- C) `git show`
- D) `git status`

Answer: A) `git log`

5 . How do you create a new branch in Git?

- A) `git create branch <branch_name>`
- B) `git checkout <branch_name>`
- C) `git branch <branch_name>`
- D) `git new branch <branch_name>`

Answer: C) `git branch <branch_name>`

6. What does the `git push` command do?

- A) It pushes changes to a remote repository
- B) It stages changes to commit
- C) It merges branches
- D) It pulls changes from a remote repository

Answer: A) It pushes changes to a remote repository

7. Which of the following is a key characteristic of Agile methodology?

a) Large teams working on one big phase at a time
b) Iterative development with frequent releases
c) Heavy documentation and planning upfront
d) No customer involvement after the project starts

Answer: b) Iterative development with frequent releases

8. In Agile, feedback from the customer is obtained:

a) At the beginning of the project only
b) Throughout the project in each iteration
c) After the project is completed
d) Only during the planning phase

Answer: b) Throughout the project in each iteration

9. In Agile, what is typically the duration of an iteration (also known as a sprint)?

a) 1-3 years
b) 3-6 months
c) 1-4 weeks
d) 12-18 months

Answer: c) 1-4 weeks

10. Which command is used to initialize a new Git repository?

a) `git start`
b) `git create`
c) `git init`
d) `git new`

Answer: c) `git init`

11. What does the `git merge` command do?

a) Combines the history of two branches into one
b) Deletes a branch
c) Fetches changes from a remote repository
d) Creates a new commit

Answer: a) Combines the history of two branches into one

12. How do you stage all files for commit in Git?

a) `git add .`
b) `git add *`
c) `git stage .`
d) `git stage all`

Answer: a) `git add .`

13. What is Docker?

a) A version control system
b) A containerization platform for developing, shipping, and running applications
c) A cloud computing service
d) A programming language

Answer: b) A containerization platform for developing, shipping, and running applications

14. Which command is used to create a Docker container from an image?

a) `docker create`
b) `docker build`
c) `docker run`
d) `docker start`

Answer: c) `docker run`

15 . Which of the following is a key benefit of using Docker?

a) Docker allows for creating virtual machines.
b) Docker containers provide consistency across different environments.
c) Docker automatically scales applications based on demand.
d) Docker eliminates the need for networking between applications.

Answer: b) Docker containers provide consistency across different environments.

16. What does a Docker image contain?

a) Running instances of containers
b) A Dockerfile used to create a container
c) All the dependencies, libraries, and code to run an application
d) A database containing container metadata

Answer: c) All the dependencies, libraries, and code to run an application

17. Which command is used to list all the running containers in Docker?

a) `docker list`
b) `docker ps`
c) `docker show`
d) `docker containers`

Answer: b) `docker ps`

18. What is the purpose of the `Dockerfile`?

a) It defines the environment in which Docker containers will run.
b) It is used to configure the Docker daemon.
c) It contains the configuration settings for the container orchestration system.
d) It specifies the steps to build a Docker image.

Answer: d) It specifies the steps to build a Docker image.

19. Which command is used to stop a running Docker container?

a) `docker halt`
b) `docker stop`
c) `docker end`
d) `docker exit`

Answer: b) `docker stop`

20. Which of the following commands is used to remove a Docker container?

a) `docker delete <container_id>`
b) `docker rm <container_id>`
c) `docker rmi <container_id>`
d) `docker remove <container_id>`

Answer: b) `docker rm <container_id>`

21. What is a Docker volume used for?

a) To store and share data between Docker containers
b) To store the Docker images
c) To increase the speed of Docker containers
d) To monitor the health of Docker containers

Answer: a) To store and share data between Docker containers

22. Which of the following Docker commands is used to build an image from a Dockerfile?

a) `docker build`
b) `docker create`
c) `docker run`
d) `docker compile`

Answer: a) `docker build`

23. Which command can you use to check the logs of a Docker container?

a) `docker log <container_id>`
b) `docker inspect <container_id>`
c) `docker logs <container_id>`
d) `docker status <container_id>`

Answer: c) `docker logs <container_id>`

24. What is the main difference between a Docker container and a Docker image?

a) A Docker container is a running instance of a Docker image.
b) A Docker image is a running instance of a container.
c) A Docker container contains the operating system, while a Docker image does not.
d) Docker containers are used only for development, while Docker images are used for production.

Answer: a) A Docker container is a running instance of a Docker image.

25. Which of the following commands is used to list all Docker images on the system?

a) `docker images`
b) `docker list`
c) `docker show images`
d) `docker ps -a`

Answer: a) `docker images`

26. Which of the following commands is used to remove a Docker image?

a) `docker rm <image_id>`
b) `docker delete <image_id>`
c) `docker rmi <image_id>`
d) `docker image rm <image_id>`

Answer: c) `docker rmi <image_id>`

27. Which of the following best describes the "Docker Hub"?

a) It is a cloud service that runs Docker containers
b) It is a repository for storing and sharing Docker images
c) It is a command-line tool used to manage Docker containers
d) It is a file system used by Docker to store container data

Answer: b) It is a repository for storing and sharing Docker images

28. What command is used to start a previously created container in Docker?

a) `docker start <container_id>`
b) `docker begin <container_id>`
c) `docker begin-start <container_id>`
d) `docker up <container_id>`

Answer: a) `docker start <container_id>`

29. Which of the following is the purpose of the `docker inspect` command?

a) To view detailed information about Docker containers and images
b) To inspect the contents of a Docker image
c) To check if the Docker daemon is running
d) To retrieve logs from a Docker container

Answer: a) To view detailed information about Docker containers and images

30. Which of the following Docker commands is used to remove unused or dangling images?

a) `docker prune`
b) `docker rmi`
c) `docker clean`
d) `docker image prune`

Answer: d) `docker image prune`

Here are additional Docker-related multiple-choice questions (MCQs) for you:

---

21. Which of the following Docker commands is used to pull an image from a remote repository?

a) `docker fetch`
b) `docker pull`
c) `docker clone`
d) `docker get`

Answer: b) `docker pull`

---

22. What is the purpose of Docker's "docker-compose.yml" file?

a) To specify the environment variables for a Docker container
b) To define services, networks, and volumes for multi-container applications

c) To define the base image for building a Docker image
d) To list all the containers running on the host

Answer: b) To define services, networks, and volumes for multi-container applications

---

23. What does the `docker ps -a` command do?

a) Lists only the currently running containers
b) Lists all containers, including those that are stopped
c) Lists the logs of all containers
d) Shows the configuration of the Docker containers

Answer: b) Lists all containers, including those that are stopped

---

24. Which of the following best describes the "Docker Hub"?

a) It is a cloud service that runs Docker containers
b) It is a repository for storing and sharing Docker images
c) It is a command-line tool used to manage Docker containers
d) It is a file system used by Docker to store container data

Answer: b) It is a repository for storing and sharing Docker images

---

25. Which of the following statements about Docker containers is true?

a) Containers include the entire operating system
b) Containers are isolated, lightweight, and can run on any host with Docker installed
c) Containers are similar to virtual machines in terms of system resource requirements
d) Docker containers cannot share the host's operating system kernel

Answer: b) Containers are isolated, lightweight, and can run on any host with Docker installed

---

26. What command is used to start a previously created container in Docker?

a) `docker start <container_id>`
b) `docker begin <container_id>`

c) `docker begin-start <container_id>`
d) `docker up <container_id>`

Answer: a) `docker start <container_id>`

---

27. Which of the following is the purpose of the `docker inspect` command?

a) To view detailed information about Docker containers and images
b) To inspect the contents of a Docker image
c) To check if the Docker daemon is running
d) To retrieve logs from a Docker container

Answer: a) To view detailed information about Docker containers and images

---

28. Which of the following is true about Docker's "bridge" network mode?

a) It allows containers to communicate only with each other on the host.
b) It is the default network mode used for containers.
c) It allows containers to communicate with other machines on a local network.
d) It gives containers access to the host's file system.

Answer: b) It is the default network mode used for containers.

---

29. Which of the following Docker commands is used to remove unused or dangling images?

a) `docker prune`
b) `docker rmi`
c) `docker clean`
d) `docker image prune`

Answer: d) `docker image prune`

---

30. What is the function of the `docker network` command?

a) To create and manage custom networks in Docker
b) To view the network traffic between containers

c) To check if containers are connected to the correct network
d) To assign static IP addresses to containers

Answer: a) To create and manage custom networks in Docker

---

31. Which Docker command is used to get the IP address of a container?

a) `docker ip <container_id>`
b) `docker inspect <container_id>`
c) `docker network inspect <container_id>`
d) `docker get-ip <container_id>`

Answer: b) `docker inspect <container_id>`

---

32. What is the Docker "overlay" network driver used for?

a) To connect containers on the same host
b) To allow communication between containers on different Docker hosts
c) To set up static IP addresses for containers
d) To set up a virtual network that provides DNS support

Answer: b) To allow communication between containers on different Docker hosts

---

33. What is the default user that runs inside a Docker container?

a) root
b) docker
c) admin
d) user

Answer: a) root

---

34. How can you pass environment variables to a Docker container?

a) Using the `--env` flag in the `docker run` command
b) Using the `-e` flag in the `docker build` command
c) By defining environment variables inside the Dockerfile
d) All of the above

Answer: d) All of the above

---

35. What is the purpose of Docker's "docker-compose up" command?

a) It stops all containers defined in the docker-compose.yml file
b) It starts the containers as per the configuration in the docker-compose.yml file
c) It builds the Docker images from the Dockerfile
d) It removes all containers from the system

Answer: b) It starts the containers as per the configuration in the docker-compose.yml file

---

36. What does the `docker stats` command display?

a) Information about the current state of Docker images
b) Resource usage statistics for running containers
c) Logs of a Docker container
d) Status of Docker services running on the host

Answer: b) Resource usage statistics for running containers

---

37. Which of the following is true about Docker "volumes"?

a) Volumes allow Docker containers to access the host's file system directly.
b) Volumes provide persistent storage for Docker containers, even if they are stopped or removed.
c) Volumes are used to share files between multiple Docker containers and the host machine.
d) Volumes are primarily used to store logs generated by Docker containers.

Answer: b) Volumes provide persistent storage for Docker containers, even if they are stopped or removed.

---

38. What does the `docker logs` command do?

a) It shows the logs of a Docker container
b) It clears the logs of a Docker container
c) It shows the error logs for the Docker daemon
d) It shows the Docker container's CPU usage logs

Answer: a) It shows the logs of a Docker container

---

39. Which of the following can be used to manage multiple Docker containers at once?

a) Docker Compose
b) Docker Swarm
c) Kubernetes
d) All of the above

Answer: d) All of the above

---

40. What is Docker Swarm?

a) A command used to stop Docker containers
b) A Docker container management tool for creating and managing multi-container applications
c) A tool for managing Docker images
d) A type of Docker volume

Answer: b) A Docker container management tool for creating and managing multi-container applications

41. What is Maven?

a) A build automation tool
b) A web server
c) A version control system
d) A programming language

Answer: a) A build automation tool

42. Which file is used to configure Maven in a project?

a) `build.xml`
b) `pom.xml`
c) `settings.xml`
d) `maven.config`

Answer: b) `pom.xml`

43. Which of the following is a valid Maven build lifecycle?

a) compile → build → deploy
b) clean → install → package
c) install → deploy → compile
d) initialize → build → deploy

Answer: b) clean → install → package

44. What is Kubernetes?

a) A programming language
b) A container orchestration platform
c) A version control system
d) A cloud computing service

Answer: b) A container orchestration platform

45. What is a Kubernetes Pod?

a) A single container running in the Kubernetes cluster
b) A logical group of containers that are deployed together
c) A node in the Kubernetes cluster
d) A service for routing traffic to containers

Answer: b) A logical group of containers that are deployed together

46. What does the `kubectl get pods` command do?

a) It lists the nodes in the Kubernetes cluster
b) It lists all running Pods
c) It creates new Pods
d) It scales the Pods

Answer: b) It lists all running Pods

47. What is Jenkins?

a) A version control system
b) A build automation tool
c) A container orchestration tool
d) A cloud computing platform

Answer: b) A build automation tool

48. What is the default web port for Jenkins?

a) 8080
b) 9090
c) 7070
d) 80

Answer: a) 8080

49. What are Jenkins "Pipelines"?

a) A system to manage build artifacts
b) A sequence of automated steps for Continuous Integration and Continuous Delivery
c) A web service to interact with Jenkins
d) A type of Jenkins plugin

Answer: b) A sequence of automated steps for Continuous Integration and Continuous Delivery

50. What is a Jenkins "Build Trigger"?

a) A notification system that sends alerts to users
b) A method to automatically start a Jenkins job based on certain events
c) A plugin that scales Jenkins jobs
d) A tool to clean up old builds

Answer: b) A method to automatically start a Jenkins job based on certain events

51. Which of the following is the primary language used in Terraform to define infrastructure?

a) YAML
b) HCL (HashiCorp Configuration Language)
c) JSON
d) XML

Answer: b) HCL (HashiCorp Configuration Language)

52. Which command is used to initialize a Terraform configuration?

a) `terraform apply`
b) `terraform plan`
c) `terraform init`
d) `terraform start`

Answer: c) `terraform init`

53. What does the `terraform apply` command do?

a) It shows the plan of the infrastructure changes
b) It initializes the Terraform project
c) It applies the changes to the infrastructure as described in the configuration files
d) It validates the syntax of the configuration files

Answer: c) It applies the changes to the infrastructure as described in the configuration files

54. Which command is used to check the current Terraform version?

a) `terraform --version`
b) `terraform version`
c) `terraform get version`
d) `terraform info`

Answer: b) `terraform version`

::Q1::How is Ansible agentless, and why is this advantageous?
{
~Ansible uses agents installed on target nodes to perform tasks.
=Ansible uses SSH for communication without needing agents on target nodes.
~Ansible requires pre-configured software on target nodes for communication.
~Ansible uses proprietary protocols for communication.
}

::Q2::What is the purpose of an Ansible playbook, and how does it differ from ad-hoc commands?
{
~Playbooks execute one-time tasks, while ad-hoc commands are reusable.
=Playbooks define reusable workflows, while ad-hoc commands perform one-time tasks.
~Playbooks and ad-hoc commands are the same.
~Ad-hoc commands define a series of tasks in YAML format.
}

::Q3::What is the purpose of state files in Terraform?
{
~To execute ad-hoc commands in Terraform.
~To store desired configurations only.
=To track the current infrastructure state and identify changes.
~To store resource logs for auditing.
}

::Q4::How does Terraform ensure idempotency?
{
~By performing duplicate actions to verify configurations.
=By maintaining a state file and only applying necessary changes.
~By requiring manual verification of changes.
~By ignoring the state of the infrastructure.
}

::Q5::How does IBM DevOps promote CI/CD?
{
~By manually testing and deploying applications.
=By using tools like Jenkins and Tekton pipelines for automation.
~By requiring human intervention at every deployment stage.
~By ignoring testing to focus on faster deployment.
}

::Q6::What is Docker, and how does it differ from virtual machines?
{
~Docker is heavier and requires its own OS like virtual machines.
=Docker uses the host OS kernel, making it lightweight compared to VMs.
~Docker does not support isolated environments.

~Docker runs directly on bare metal without any OS.
}

::Q7::Explain the concept of a Docker image.
{
~A Docker image is a running instance of a container.
=A Docker image contains code, runtime, libraries, and dependencies.
~A Docker image is used for debugging purposes only.
~A Docker image requires additional dependencies during execution.
}

::Q8::What is the difference between a container and an image?
{
~An image is a running instance, and a container defines an application.
=An image contains dependencies, while a container executes the application.
~A container is static, while an image is dynamic.
~There is no difference between a container and an image.
}

::Q9::What is the role of the Dockerfile?
{
~To execute containers directly.
=To provide instructions for building Docker images.
~To store logs for Docker containers.
~To execute commands within containers.
}

::Q10::What is the purpose of the docker ps command?
{
~To list all Docker images.
~To stop all running containers.
=To list all running containers with details like status and ID.
~To build Docker images.
}

::Q11::How does Docker integrate with Kubernetes?
{
~Kubernetes uses Docker to manage clusters without containers.
=Kubernetes requires Docker to deploy containerized applications in clusters.
~Kubernetes and Docker cannot work together.
~Docker replaces Kubernetes in container orchestration.
}

::Q12::What does the term "DevOps" represent?
{
~Development Operations
=Development and Operations
~Deployment Operations
~Digital Operations
}

::Q13::Which of the following is NOT a goal of DevOps?
{
~Faster time-to-market
~Improved collaboration
=Increased silos
~Continuous delivery
}

::Q14::Why do businesses adopt DevOps?
{
~To automate manual tasks
~To improve team collaboration
~To reduce deployment failures
=All of the above
}

::Q15::Which of the following best describes Traditional IT practices?
{
~Automated workflows
=Siloed teams
~Continuous delivery
~Collaborative development
}

::Q16::How does Agile differ from DevOps?
{
~Agile focuses on collaboration across all departments, while DevOps focuses on collaboration between development and operations.
~Agile emphasizes iterative development, while DevOps emphasizes continuous delivery.
=Both a and b
~None of the above
}

::Q17::Which practice is common in both Agile and DevOps?
{
~Continuous deployment
=Iterative development
~Silos between teams
~Manual testing
}

::Q18::Which of the following is NOT a core principle of DevOps?
{
~Automation
~Collaboration
~Scalability
=Manual deployment
}

::Q19::Which phase in the DevOps lifecycle focuses on maintaining system reliability?
{
~Plan
~Build
=Operate
~Monitor
}

::Q20::What is the key focus of the DevOps lifecycle?
{
~Manual deployments
=Continuous improvement
~Isolated teams
~Fixed processes
}

::Q21::What does CI in CI/CD stand for?
{
~Continuous Innovation
=Continuous Integration
~Collaborative Integration
~Critical Iteration
}

::Q22::Which of the following is a CI/CD pipeline tool?
{
~Git
=Jenkins
~Docker
~All of the above
}

::Q23::In CI/CD, what does "Delivery" signify?
{
~Automatic code testing
=Continuous deployment of production-ready code
~Collaborative team meetings
~Manual bug fixes
}

::Q24::Which tool is primarily used for version control in DevOps?
{
~Docker
=Git
~Kubernetes
~Maven
}

::Q25::Which tool is used for building and managing Java-based projects?
{

~Git
=Maven
~Docker
~Jenkins
}

::Q26::Which of these tools is a popular CI/CD server?
{
~GitHub
~Docker
=Jenkins
~Kubernetes
}

::Q27::What is the purpose of Docker in a DevOps environment?
{
~Code version control
=Containerization of applications
~Continuous deployment
~Project management
}

::Q28::Which Docker command is used to create a container from an image?
{
~docker build
=docker run
~docker pull
~docker commit
}

::Q29::What language is Jenkins written in?
{
~Python
=Java
~Ruby
~Go
}

::Q30::What is the main purpose of Infrastructure as Code (IaC)?
{
~To manually configure infrastructure
=To automate infrastructure provisioning and management
~To manage code repositories
~To deploy applications manually
}

::Q31::Which of the following best describes a container orchestrator?
{
~A tool to write containerized applications
=A platform to automate the deployment, scaling, and management of containers

~A framework to build container images
~A tool for managing version control
}

::Q32::In Ansible, which file format is primarily used for writing playbooks?
{
~JSON
=YAML
~XML
~TOML
}

::Q33::What is the primary role of Kubernetes?
{
~Version control of containerized applications
=Orchestrating containerized applications
~Creating Docker images
~Monitoring logs
}

::Q34::Which command is used to apply a Terraform configuration?
{
~terraform init
=terraform apply
~terraform validate
~terraform destroy
}

::Q35::What is a Jenkins pipeline?
{
~A framework for creating containers
=A set of plugins to implement CI/CD workflows
~A command-line tool for Docker
~A storage system for logs
}

::Q36::What is the function of the docker build command?
{
~To run a Docker container
=To create a Docker image from a Dockerfile
~To pull an image from a registry
~To list running containers
}

::Q37::What does the kubectl command-line tool do?
{
~Creates Docker images
=Manages Kubernetes clusters
~Builds Terraform state files
~Executes Ansible playbooks

```
}

::Q38::What is the purpose of Blue-Green Deployment in DevOps?
{
   ~To increase system downtime during updates
   =To enable smooth transitions between application versions
   ~To manually test deployment processes
   ~To isolate development and operations teams
}

::Q39::Which command is used to destroy infrastructure in Terraform?
{
   ~terraform apply
   =terraform destroy
   ~terraform init
   ~terraform plan
}

::Q40::What is the primary purpose of Helm in Kubernetes?
{
   ~To manage container images
   =To package, deploy, and manage Kubernetes applications
   ~To monitor container logs
   ~To create Kubernetes clusters
}
```
```
::Q1:: What does the term "DevOps" represent? {
~A) Development Operations
= B) Development and Operations
~C) Deployment Operations
~D) Digital Operations
}

::Q2:: Which of the following is NOT a goal of DevOps? {
~A) Faster time-to-market
~B) Improved collaboration
= C) Increased silos
~D) Continuous delivery
}

::Q3:: Why do businesses adopt DevOps? {
~A) To automate manual tasks
~B) To improve team collaboration
~C) To reduce deployment failures
= D) All of the above
}

::Q4:: Which of the following best describes Traditional IT practices? {
~A) Automated workflows
= B) Siloed teams
```

~C) Continuous delivery
~D) Collaborative development
}

::Q5:: How does Agile differ from DevOps? {
~A) Agile focuses on collaboration across all departments, while DevOps focuses on collaboration between development and operations.
~B) Agile emphasizes iterative development, while DevOps emphasizes continuous delivery.
= C) Both A and B
~D) None of the above
}

::Q6:: Which practice is common in both Agile and DevOps? {
~A) Continuous deployment
= B) Iterative development
~C) Silos between teams
~D) Manual testing
}

::Q7:: Which of the following is NOT a core principle of DevOps? {
~A) Automation
~B) Collaboration
~C) Scalability
= D) Manual deployment
}

::Q8:: Which phase in the DevOps lifecycle focuses on maintaining system reliability? {
~A) Plan
~B) Build
~C) Operate
= D) Monitor
}