Application Containerization & Test Automation CA 1

**1. What is the primary purpose of application containerization?**

A) To replace virtual machines entirely  
B) To eliminate the need for software development  
C) To package applications and their dependencies for consistent deployment  
D) To increase hardware costs

**2. How does containerization improve deployment in the software industry?**

A) By slowing down deployment processes  
B) By ensuring applications run consistently across environments  
C) By replacing Docker with virtual machines  
D) By ignoring environmental differences

**3. What is the key difference between containers and virtual machines?**

A) Containers share the host OS, while VMs include a full OS  
B) Containers and VMs are identical in structure  
C) Virtual machines are more lightweight than containers  
D) Containers run slower than virtual machines

**4. What is the function of a hypervisor in virtualization?**

A) To replace containers entirely  
B) To create and manage virtual machines on physical hardware  
C) To ignore resource allocation  
D) To manage physical hardware directly

**5. What does Docker primarily help achieve?**

A) Managing only cloud-based applications  
B) Automating the process of building, shipping, and running containers  
C) Eliminating the need for DevOps  
D) Creating virtual machines on a large scale

**6. Which of the following is a key benefit of using containers instead of virtual machines?**

A) Increased resource consumption  
B) Containers are lightweight, start faster, and have lower overhead  
C) Slower deployment times  
D) Elimination of all software dependencies

**7. What is the primary role of Docker images?**

A) To act as templates for creating and running containers  
B) To replace virtual machines  
C) To store data permanently inside a container  
D) To eliminate the need for a host operating system

**8. How does containerization support application portability?**

A) By allowing applications to run consistently across different environments  
B) By eliminating the need for portability  
C) By tying applications to specific hardware  
D) By focusing only on development, not deployment

**9. What is a Dockerfile used for?**

A) To define the build process for a Docker image  
B) To store container logs  
C) To configure networking for containers  
D) To create virtual machines

**10. Which of the following is an advantage of containerization over traditional deployment?**

A) Containers eliminate all software bugs  
B) Containers provide environment consistency across development, testing, and production  
C) Containers reduce the need for version control  
D) Containers require separate physical hardware for each instance

**11. What is the purpose of the Docker Daemon?**

A) To manage the creation and execution of containers  
B) To directly control physical hardware  
C) To act as a storage location for Docker images  
D) To replace the host operating system

**12. How does Kubernetes complement containerization?**

A) By orchestrating and managing containerized applications  
B) By replacing Docker with an alternative containerization technology  
C) By eliminating the need for multiple containers  
D) By serving as a runtime environment for individual containers

**13. What is the role of Docker Compose?**

A) To manage multiple containers as a single service  
B) To replace the need for Kubernetes  
C) To create virtual machines dynamically  
D) To convert containers into standalone applications

**14. What is the function of namespaces in Linux containers?**

A) To provide isolation for containerized applications  
B) To manage networking between physical machines  
C) To increase hardware dependency in cloud environments  
D) To eliminate the need for host operating systems

**15. What is the main difference between Docker and Kubernetes?**

A) Docker is a container runtime, while Kubernetes is a container orchestration tool  
B) Docker and Kubernetes perform the same function  
C) Kubernetes creates virtual machines, while Docker only runs containers  
D) Docker is used only in development, while Kubernetes is used only in production

**16. Which of the following best describes the role of container registries?**

A) To store and distribute container images  
B) To replace virtual machines  
C) To directly execute containers without a host operating system  
D) To eliminate the need for storage in containerized environments

**17. What is the purpose of a multi-stage build in a Dockerfile?**

A) To reduce the final image size by optimizing the build process  
B) To increase the number of layers in an image  
C) To add more dependencies than necessary  
D) To combine multiple containers into a single runtime

**18. How does containerization impact CI/CD pipelines?**

A) It enables faster, more consistent deployments  
B) It eliminates the need for version control  
C) It increases deployment time significantly  
D) It forces developers to use virtual machines

**19. What is the function of the docker run command?**

A) To create and start a container from an image  
B) To delete an existing Docker container  
C) To build a new Docker image  
D) To push an image to a container registry

**20. How does container networking work in Docker?**

A) It enables communication between containers using different networking modes  
B) It requires each container to have a separate physical network adapter  
C) It prevents containers from connecting to external services  
D) It eliminates the need for network security

**21. What is the role of control groups (cgroups) in containerization?**

A) To limit and allocate system resources to containers  
B) To store logs generated by containers  
C) To eliminate the need for process isolation  
D) To act as a storage solution for container images

**22. What is an overlay network in Docker?**

A) A network that allows communication between services across multiple hosts  
B) A network that prevents containerized applications from scaling  
C) A network that forces all containers to use the same IP address  
D) A network that eliminates external access to containerized applications

**23. What is the difference between a Docker volume and a bind mount?**

A) A volume is managed by Docker, while a bind mount links to a specific host directory  
B) A bind mount is stored within the container, while a volume is temporary  
C) A volume is deleted when the container stops, while a bind mount persists  
D) A bind mount is required for multi-container applications

**24. What is the default networking mode for a Docker container?**

A) Bridge  
B) None  
C) Host  
D) Overlay

**25. Which command lists all running Docker containers?**

A) docker ps  
B) docker images  
C) docker run  
D) docker network ls

**26. What is a Docker entrypoint used for?**

A) To define the default command that runs when a container starts  
B) To create a new Docker image  
C) To delete a running container  
D) To configure a network for container communication

**27. How can a stopped container be restarted in Docker?**

A) Using docker start <container\_id>  
B) Using docker build <container\_id>  
C) Using docker run <container\_id>  
D) Using docker remove <container\_id>

**28. What happens when a container is stopped in Docker?**

A) Its data is erased permanently  
B) It can be restarted later with the same state  
C) It is automatically removed from the system  
D) It creates a new image

**29. What is the function of the docker logs command?**

A) To display logs of a running container  
B) To delete old log files from Docker  
C) To list all available Docker images  
D) To restart all stopped containers

**30. How does Docker Swarm enable container orchestration?**

A) By managing and scaling containerized applications across multiple hosts  
B) By creating virtual machines dynamically  
C) By eliminating the need for networking between containers  
D) By reducing the number of available container instances

**1. What is the primary goal of test automation in software development?**

A) Avoiding code reviews  
B) Increasing software bugs  
C) Reducing manual effort  
D) Delaying software releases

**2. Which of the following is NOT a benefit of test automation?**

A) Reduced human error  
B) Improved test coverage  
C) Increased manual testing time  
D) Faster test execution

**3. What does the acronym "CI/CD" stand for in DevOps?**

A) Code Integration/Continuous Debugging  
B) Continuous Integration/Continuous Deployment  
C) Continuous Improvement/Continuous Design  
D) Code Inspection/Continuous Development

**4. How does test automation improve the efficiency of the software development lifecycle?**

A) By automating repetitive tasks  
B) By eliminating testing altogether  
C) By reducing code quality  
D) By increasing manual testing time

**5. What is a major difference between manual and automated testing?**

A) Automated testing requires human intervention for every test  
B) Automated testing can run tests 24/7  
C) Manual testing is more repeatable  
D) Manual testing is faster

**6. What is the role of assertions in test automation frameworks?**

A) To write test scripts  
B) To validate test results  
C) To deploy code  
D) To generate test reports

**7. What is the role of Continuous Integration (CI) in test automation?**

A) To delay code deployment  
B) To manually test code  
C) To avoid testing altogether  
D) To automate code integration and testing

**8. What is a key challenge associated with test automation implementation?**

A) Slow release cycles  
B) High initial setup cost  
C) Excessive manual testing  
D) Lack of documentation

**9. What is a key principle of integrating test automation into CI/CD pipelines?**

A) Automating builds and tests in real-time  
B) Running tests only manually  
C) Avoiding automated tests  
D) Delaying test execution

**10. How does test automation support Agile development methodologies?**

A) By enabling frequent and rapid testing  
B) By avoiding collaboration  
C) By slowing down development cycles  
D) By replacing manual testing entirely

**11. Which of the following is a common practice when selecting a test automation framework?**

A) Ignoring project requirements  
B) Avoiding documentation  
C) Choosing the most expensive tool  
D) Evaluating compatibility with the application

**12. What is a potential drawback of relying solely on test automation?**

A) Faster development cycles  
B) Improved code quality  
C) Increased manual testing  
D) Inability to catch UI issues

**13. Which test automation tool is primarily used for API testing?**

A) Selenium  
B) Appium  
C) JIRA  
D) Postman

**14. Which of the following tools is commonly used for continuous integration in DevOps?**

A) Cypress  
B) Selenium  
C) Jenkins  
D) Appium

**15. What is a major difference between Selenium and Cypress for web testing?**

A) Selenium requires more setup and supports multiple browsers, while Cypress has built-in test execution features  
B) Selenium works only for mobile applications  
C) Cypress supports more programming languages than Selenium  
D) Cypress is slower than Selenium

**16. How does test automation handle the testing of legacy systems in DevOps?**

A) By avoiding automation  
B) By ignoring legacy systems  
C) By adapting automation scripts for legacy code  
D) By focusing on manual testing

**17. What is the purpose of Selenium WebDriver?**

A) To automate interactions with web browsers  
B) To create test reports  
C) To manage mobile devices  
D) To perform API testing

**18. How does Selenium handle browser-specific testing?**

A) By supporting cross-browser testing with WebDriver  
B) By avoiding browsers  
C) By using a single browser only  
D) By manual testing

**19. What is the purpose of using waits in Selenium WebDriver?**

A) To handle synchronization issues with dynamic content  
B) To deploy applications  
C) To avoid testing  
D) To speed up test execution

**20. How does test automation contribute to reducing human error in testing?**

A) By automating repetitive tasks  
B) By eliminating test scripts  
C) By increasing manual intervention  
D) By slowing down testing

**21. What is the purpose of using mock data in test automation?**

A) To eliminate testing  
B) To simulate real data for testing  
C) To confuse testers  
D) To delay test execution

**22. How does test automation contribute to faster release cycles in software development?**

A) By reducing delays and automating repetitive tasks  
B) By increasing manual testing time  
C) By avoiding automation tools  
D) By slowing down testing

**23. Which test automation framework is best suited for behavior-driven development (BDD)?**

A) Cucumber  
B) Selenium  
C) JUnit  
D) TestNG

**24. What is a key consideration when choosing between Selenium and Cypress for web testing?**

A) Cost of licensing  
B) Browser compatibility and ease of use  
C) Avoiding testing frameworks  
D) Focusing on mobile apps

**25. Which of the following is an example of a test automation best practice?**

A) Avoiding version control  
B) Writing unmaintainable test scripts  
C) Using reusable and modular test cases  
D) Ignoring test reports

**26. What is the impact of test automation on regression testing in DevOps?**

A) It automates repetitive regression tests  
B) It increases manual effort  
C) It eliminates regression testing  
D) It slows down testing

**27. What is a key metric for evaluating test automation success?**

A) Lack of documentation  
B) Test execution time and coverage  
C) Number of manual tests  
D) Code deployment frequency

**28. How does test automation support scalability in software projects?**

A) By enabling tests to run on multiple environments  
B) By increasing manual testing  
C) By reducing scalability  
D) By avoiding automation

**29. How does test automation help in reducing software development costs?**

A) By increasing the number of defects  
B) By automating repetitive tasks and reducing manual labor  
C) By slowing down the testing process  
D) By eliminating test automation

**30. What is the role of version control in test automation within CI/CD?**

A) To deploy applications  
B) To avoid test scripts  
C) To manage and track changes in test scripts  
D) To ignore testing