7 Days DevOps Deloitte Day 2 Test 1

Date 03-01-2025

1. **Which of the following is a declarative language for automation?**
   a) Python
   b) Terraform
   c) Shell Scripting
   d) C++
   Answer: b) Terraform
   Explanation: Terraform is a declarative infrastructure as code tool, unlike others which are imperative.
2. **What is the fastest method to install an operating system?**
   a) Bare Metal
   b) Virtualization
   c) Containerization
   d) Cloud Computing
   Answer: c) Containerization
   Explanation: Containerization allows applications to run quickly without needing full OS installation.
3. **What is the purpose of a hypervisor in virtualization?**
   a) To manage hardware resources
   b) To create virtual machines
   c) To manage networking
   d) To host container images
   Answer: b) To create virtual machines
   Explanation: A hypervisor enables the creation and management of virtual machines.
4. **Which command is used to install Docker on Linux?**
   a) apt-get install docker
   b) yum install docker
   c) docker install
   d) brew install docker
   Answer: b) yum install docker
   Explanation: Docker is installed using the yum package manager in Red Hat-based distributions.

5. **Which tool is used for fault tolerance in container technology?**
   a) Docker Swarm
   b) Kubernetes
   c) Jenkins
   d) Ansible
   Answer: b) Kubernetes
   Explanation: Kubernetes provides fault tolerance and high availability for containers.
6. **What is the role of a 'Manager Node' in Kubernetes?**
   a) To host container images
   b) To manage worker nodes and containers
   c) To provide IP addresses
   d) To store application data
   Answer: b) To manage worker nodes and containers
   Explanation: The manager node coordinates and controls the cluster's worker nodes.
7. **What is the AWS service for managing Kubernetes clusters?**
   a) ECS
   b) EKS
   c) RDS
   d) S3
   Answer: b) EKS
   Explanation: EKS is AWS's managed service for running Kubernetes clusters.
8. **What is the primary feature of Docker Hub?**
   a) Provides private container registry
   b) Hosts public container images
   c) Manages AWS services
   d) Automates infrastructure
   Answer: b) Hosts public container images
   Explanation: Docker Hub is a public registry for sharing and storing Docker container images.
9. **What is the primary limitation of virtualization technology?**
   a) It is incompatible with cloud environments
   b) It has low performance and high installation time
   c) It does not support multiple operating systems

d) It cannot run on Linux
Answer: b) It has low performance and high installation time
Explanation: Virtualization introduces overhead, reducing performance compared to bare-metal systems.

10. **Which of the following is the fastest virtualization software created by AWS Cloud?**
    a) XEN
    b) Nitro
    c) VMware
    d) VirtualBox
    Answer: b) Nitro
    Explanation: AWS Nitro is designed to deliver high performance and low latency in virtualized environments.
11. **Which command is used to start Docker services in Linux?**
    a) docker start
    b) systemctl start docker
    c) docker ps
    d) yum install docker
    Answer: b) systemctl start docker
    Explanation: The systemctl command starts the Docker service on Linux systems.
12. **What is the AWS service for managing containers?**
    a) ECR
    b) EC2
    c) ECS
    d) S3
    Answer: c) ECS
    Explanation: ECS (Elastic Container Service) manages containerized applications in AWS.
13. **What is the role of docker pull?**
    a) It creates a Docker image
    b) It removes a Docker container
    c) It downloads an image from Docker Hub
    d) It launches a Docker container
    Answer: c) It downloads an image from Docker Hub

Explanation: `docker pull` is used to download container images from Docker Hub.

14. What are images equivalent to in AWS?
a) EC2 Instances
b) AMI Images
c) S3 Buckets
d) CloudFormation Templates
Answer: b) AMI Images
Explanation: In AWS, images are equivalent to AMI (Amazon Machine Images) for EC2 instances.

15. Which command is used to check the IP address of a running Docker container?
a) docker ps
b) docker inspect
c) docker run
d) docker image
Answer: b) docker inspect
Explanation: `docker inspect` provides detailed information, including IP addresses, of containers.

16. What is the purpose of Kubernetes in DevOps?
a) To develop container images
b) To provide fault tolerance for containers
c) To install operating systems on physical hardware
d) To automate serverless architecture
Answer: b) To provide fault tolerance for containers
Explanation: Kubernetes automates container orchestration and ensures fault tolerance.

17. What is a cluster in Kubernetes?
a) A collection of containerized applications
b) A group of nodes working together
c) A cloud service for managing containers
d) A tool for creating Docker images
Answer: b) A group of nodes working together
Explanation: A Kubernetes cluster consists of nodes that manage containerized applications.

18. What is the role of a worker node in Kubernetes?
a) It manages the cluster
b) It hosts the Docker containers
c) It monitors traffic
d) It deploys applications to the cloud
Answer: b) It hosts the Docker containers
Explanation: Worker nodes in Kubernetes run and manage containers.

19. What does the eksctl command do?
a) It installs Docker on a Linux machine
b) It manages Kubernetes clusters on AWS
c) It creates instances in Google Cloud
d) It retrieves container logs from Kubernetes
Answer: b) It manages Kubernetes clusters on AWS
Explanation: eksctl is a tool for creating and managing Amazon EKS clusters.

20. How does the AWS CLI authenticate for automation?
a) By using the yum command
b) Through access keys and secret keys stored using aws configure
c) By importing Python libraries
d) Through manual login each time
Answer: b) Through access keys and secret keys stored using aws configure
Explanation: AWS CLI uses access and secret keys for authentication.

21. What is the function of Kubernetes in the context of containers?
a) It replaces Docker entirely
b) It manages and automates container orchestration
c) It monitors cloud billing for containers
d) It creates container images on the fly
Answer: b) It manages and automates container orchestration
Explanation: Kubernetes automates deployment, scaling, and management of containerized applications.

22. What is the primary advantage of using Docker?
a) It provides advanced analytics for logs
b) It installs operating systems within seconds
c) It is a replacement for Kubernetes
d) It only works in managed cloud services

Answer: b) It installs operating systems within seconds
Explanation: Docker allows rapid deployment of applications by containerizing them with minimal overhead.

23. What is a polyglot application as per the document?
a) An application that uses multiple programming languages
b) An app that runs only on private clouds
c) An app that uses different cloud providers
d) A tool for managing infrastructure as code
Answer: a) An application that uses multiple programming languages
Explanation: A polyglot application leverages multiple languages within its architecture.

24. Which of the following best describes a private cloud?
a) A cloud service exclusively offered by Google Cloud Platform
b) A dedicated cloud infrastructure that is restricted for use within an organization
c) A system combining various public cloud services for broader access
d) A cloud-based environment specifically designed for testing software containers
Answer: b) A dedicated cloud infrastructure that is restricted for use within an organization
Explanation: A private cloud is hosted solely for an organization's exclusive use.

25. Which tool is commonly used to automate and manage infrastructure across multiple cloud providers?
a) Kubernetes
b) Terraform
c) Jenkins
d) Docker Swarm
Answer: b) Terraform
Explanation: Terraform is widely used to automate infrastructure management across different cloud providers.

26. Which cloud deployment strategy should the startup use to manage both sensitive customer data and high traffic efficiently?
a) Bare Metal Deployment
b) Private Cloud
c) Hybrid Cloud

d) Virtualization on Physical Hardware
Answer: c) Hybrid Cloud
Explanation: A hybrid cloud offers both the security of private cloud and the scalability of public cloud.

27. A video-streaming platform like Hotstar needs to handle millions of concurrent users during live events, such as cricket matches, without downtime. The system should also scale automatically based on traffic surges. So, which combination of tools and practices can ensure seamless performance under such conditions?
a) Docker for containers and Jenkins for CI/CD
b) Kubernetes for container orchestration and auto-scaling
c) AWS EC2 for virtual machines and manual server management
d) Terraform for infrastructure automation and Docker Swarm for container orchestration
Answer: b) Kubernetes for container orchestration and auto-scaling
Explanation: Kubernetes ensures high availability and auto-scaling for large-scale applications.

28. A company deploys its applications in Docker containers but experiences frequent container crashes, disrupting the services. They need a tool to monitor and automatically restart failed containers to ensure uptime. So, which tool should the company implement?
a) Jenkins
b) Prometheus
c) Kubernetes
d) AWS ECS
Answer: c) Kubernetes
Explanation: Kubernetes can automatically monitor and restart containers to ensure high availability.

29. An organization hosts its chat and search features on separate cloud platforms to leverage the strengths of each provider. The chat feature runs on AWS, while the search feature is on Google Cloud. So, which term describes this architectural strategy?
a) Hybrid Cloud
b) Multi-Cloud Strategy
c) Polyglot Application
d) Containerized Deployment

Answer: b) Multi-Cloud Strategy
Explanation: Multi-cloud strategy utilizes different cloud providers for different services.

30. A company uses Docker for containerized applications. They want to ensure sensitive application images are not stored in public repositories. So, which solution should the company implement?
a) Use Docker Hub with private images
b) Set up an internal private registry or use AWS ECR
c) Store images directly in the Kubernetes cluster
d) Use AMI images for application storage
Answer: b) Set up an internal private registry or use AWS ECR
Explanation: Using a private registry like AWS ECR ensures sensitive images are stored securely.