CAT: Mobile & Cloud Security

Registration Number:

1. What are two characteristics of the public cloud deployment model? Each correct answer presents a complete solution. Select all answers that apply.
   a. Computing resources are used exclusively by users from one organization.
   b. Hardware is physically located in an organization's on-site datacenter.
   c. Servers and storage are owned and operated by a third-party cloud service provider.
   d. Services are offered over the internet and are available to anyone who wants to purchase them.
2. Which two characteristics are common advantages of cloud computing? Select all that apply
   a. elimination of horizontal scaling
   b. geo-distribution
   c. high availability
   d. physical access to servers
3. A Docker image is a self-contained software system that includes the code, runtime, system libraries, and settings needed to run an application.
   a. True
   b. False
4. Which of the following is NOT a type of virtualization?
   a. Desktop virtualization
   b. Network virtualization
   c. Application virtualization
   d. Hardware virtualization
5. Select the answer that correctly completes the sentence. ____ refers to upfront costs incurred one time, such as hardware purchases.
   a. A consumption-based model
   b. Capital expenditures
   c. Elasticity
   d. Operational expenditures
6. Which cloud deployment model are you using if you have servers physically located at your organization's on-site datacenter, and you migrate a few of the servers to the cloud?
   a. hybrid cloud
   b. private cloud
   c. public cloud
7. Select the answer that correctly completes the sentence.Increasing compute capacity for an app by adding instances of resources such as virtual machines is called _____
   a. disaster recovery

b. high availability
c. horizontal scaling
d. vertical scaling

8. What are some challenges of using Docker containers? (Choose all that apply
   a. Requires additional infrastructure
   b. Security considerations for container communication
   c. Limited debugging options
   d. Increased storage usage
9. Select the answer that correctly completes the sentence. An example of _____ is automatically scaling an application to ensure that the application has the resources needed to meet customer demands.
   a. Agility
   b. elasticity
   c. geo-distribution
   d. high availability
10. What is the difference between a virtual machine and a container?
   a. Containers share the kernel with the host OS, VMs have their own.
   b. Containers are more lightweight than VMs.
   c. Both A and B
   d. There is no difference
11. What are the main components of a Docker application?
   a. Image, Container, Registry
   b. Kernel, Process, Virtual Machine
   c. Application, Server, Network
   d. Code, Library, Framework
12. Select the answer that correctly completes the sentence. In cloud computing, _____ allows you to deploy applications to regional data centers around the world.
   a. disaster recovery
   b. elasticity
   c. geo-location
   d. high availability
13. Select the answer that correctly completes the sentence.Increasing the capacity of an application by adding a virtual machine is called _____.
   a. agility
   b. high availability
   c. horizontal scaling
   d. vertical scaling
14. What is a Docker registry?
   a. A tool for building Docker images
   b. A repository for storing and sharing Docker images
   c. A command-line interface for managing Docker containers
   d. A runtime environment for executing Docker containers
15. In which two deployment models are customers responsible for managing operating systems that host applications? Select all that apply

a. infrastructure as a service (IaaS)
b. on-premises
c. platform as a service (PaaS)
d. software as a service (SaaS)

16. In a platform as a service (PaaS) model, which two components are the responsibility of the cloud service provider? Select all that apply
a. information and data
b. operating system
c. physical network
d. user access

17. What happens to the data stored in a container when the container is stopped?
a. The data is persisted in the volume if mounted.
b. The data is lost unless you copy it out before stopping.
c. The data is automatically saved to the image.

18. How can cloud computing help improve disaster recovery?
a. Easier data backup and replication
b. Faster failover to redundant resources
c. Reduced downtime and data loss
d. All of the above

19. What are some advantages of live migration of virtual machines? (Choose all that apply)
a. Reduced downtime during maintenance
b. Improved load balancing across physical servers
c. Increased security and isolation
d. Simplified disaster recovery

20. What are the benefits of using Docker volumes for container data?
a. Persistent storage of data that survives container deletion
b. Easier sharing of data between containers
c. Improved performance for frequently accessed data
d. All of the above

21. You want to build a Docker image for a Python application that uses a specific library. How can you ensure the library is included in the image?
a. Include the library installation commands in your Dockerfile.
b. Copy the library files directly into the image.
c. Use a base image that already includes the library.
d. All of the above (depending on the library availability)

22. You accidentally deleted a running container. How can you recreate it without rebuilding the image?
a. You cannot recreate it without rebuilding the image.
b. Use the docker start command with the container ID.
c. Use the docker run command with the image name and recreate the volume mounts.

23. What is the benefit of using Docker Compose to manage multi-container applications?
a. It simplifies configuration by defining services and their relationships in a single file.

b. It automatically builds Docker images for each service.
c. It provides better resource isolation between containers.
d. All of the above

24. What is the responsibility of cloud providers in the shared security model?
a. Securing the underlying infrastructure
b. Securing the application and data
c. Both A and B
d. Neither A nor B

25. What are some best practices for securing Docker containers?
a. Run containers with the least privileged user (non-root).
b. Avoid exposing unnecessary ports to the host or external network.
c. Use Docker secrets management for sensitive information like passwords.
d. All of the above

26. Why is cloud computing often less expensive than on-premises data centers?
a. Cloud service offerings have limited functionality.
b. Network bandwidth is free.
c. Services are only offered in a single geographic location.
d. You are only billed for what you use.

27. What command can you use to detach a container from the terminal after it starts running?
a. docker start <container_id>
b. docker ps -a (shows all containers)
c. docker run -d <image_name>
d. docker attach <container_id>

28. A company needs to consolidate multiple physical servers onto fewer machines to save on costs and improve resource utilization. What type of hypervisor would be most suitable?
a. Type 1 Hypervisor
b. Type 2 Hypervisor

29. What are some popular cloud computing providers? (Choose all that apply)
a. Amazon Web Services (AWS)
b. Microsoft Azure
c. Google Cloud Platform (GCP)
d. IBM Cloud

30. Which of the following is NOT a shared responsibility model for cloud security?
a. The cloud provider is responsible for securing the underlying infrastructure.
b. The customer is responsible for securing the data and applications they deploy in the cloud.
c. The cloud provider is responsible for patching vulnerabilities in customer applications.
d. Both the cloud provider and the customer share responsibility for security based on a well-defined model.