**2. The cloud is almost everywhere in our lives now. What do you think are the fundamental reasons behind its success? Name three pros and three cons of cloud.**

Scalability, cost efficiency (pay-as-you-go), and accessibility from anywhere.

Scalability 、Cost efficiency、Accessibility

Security concerns、Downtime risk、Limited control

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

A hypervisor is software that creates and manages virtual machines by abstracting and allocating physical hardware resources to them.

**4. What is a virtual machine (VM)?**

A virtual machine is a software-based emulation of a physical computer that runs its own operating system and applications as if it were a separate physical machine.

**5. What are the benefits of using virtual machines?**

Efficient utilization of hardware.

Isolation for security and testing.

Portability across environments.

Easy backup, recovery, and cloning.

Cost savings by running multiple VMs on a single physical host.

**6. List five use cases of virtual machines.**

1.Software testing and development.

2.Running legacy applications.

3.Training and education environments.

4.Disaster recovery and backup.

5.Hosting multiple operating systems on one server.

**7. In virtualization, what is the guest operating system?**

**a) The main operating system running on the physical machine**

**b) The operating system installed on a virtual machine**

**c) The operating system running on a remote server**

**d) The operating system running on a mobile device**

**8. What does virtual machine isolation mean?**

**a) Virtual machines can communicate directly with the physical hardware.**

**b) Virtual machines share the same resources and cannot be isolated.**

**c) Virtual machines run independently and are isolated from each other and the host system.**

**d) Virtual machines can only be accessed locally.**

**9. What is the benefit of virtual machine portability?**

**a) It allows virtual machines to communicate with each other easily.**

**b) It ensures faster boot times for virtual machines.**

**c) It allows virtual machines to be moved between different physical machines with compatible hypervisors.**

**d) It reduces the need for hardware virtualization.**

**10. What is the purpose of cloning a virtual machine?**

The purpose of cloning a VM is to create an exact copy of an existing VM (including its operating system, applications, and settings). This is useful for testing, backups, scaling environments, and quickly deploying multiple identical systems.