**Lab 1:**

**1. Check if your processor supports Intel/AMD virtualization technology. Enable Intel virtualization technology in BIOS if possible.**

**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.**

Pros:

* Cost efficiency
* Scalability
* Accessibility and collaboration

Cons:

* Security concerns
* Dependence on internet connectivity
* Limited customization and control

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

Hypervisors make virtualization possible by translating requests between the physical and virtual resources.

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

The operating system (OS) and programmes of a physical computer are emulated by software in a virtual machine (VM). It makes it possible for several virtualized operating systems to run on a single physical machine, improving flexibility, maximising resource utilisation, and managing computing resources more effectively.

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

* Effective Use of Hardware Resources: By allowing several virtual machines (VMs) to operate on a single physical host, virtualization improves the use of CPU, memory, storage, and network resources.
* Server Consolidation: By running several virtual servers on a single physical server, businesses can cut down on the amount of physical equipment they need and the associated expenses.
* Isolation Among VMs: On the same host, every VM runs separately from the others, offering a high level of isolation. By isolating a VM, problems in one do not impact the others.
* Advantages for Security: Because virtual machines (VMs) can be contained in templates or snapshots, rolling back to a known state in the event of a security problem is made simpler.

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

* Server virtualization
* Development and testing environments
* Desktop virtualization (vdi- virtual desktop infrastructure)
* Cloud computing
* Disaster recovery and business continuity

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

b) The operating system installed on a virtual machine

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

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

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

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

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

Cloning a virtual machine or template enables you to create multiple virtual machines or templates based on the original. There are two methods of cloning; a simple clone, and an advanced clone. A simple clone sets up the clone with the same configuration information as the original.