1. **Check if your processor supports Intel/AMD virtualization technology. Enable Intel virtualization technology in BIOS if possible.**
   - Intel: run `grep -wm1 vmx /proc/cpuinfo`
   - AMD: run `grep -wm1 svm /proc/cpuinfo`
   If the flag is present, reboot → BIOS → Intel VT-x / AMD-V → Enabled.

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.**
   Root drivers:
   - Pay-as-you-go economics (CapEx → OpEx)
   - Global reach in minutes (world-wide DC footprint)
   - Built-in automation & managed services accelerate innovation

   Pros:
   1. Elastic scalability
   2. High availability & geo-redundancy
   3. No up-front hardware cost

   Cons:
   1. Security & compliance worries (shared responsibility)
   2. Vendor lock-in / limited control
   3. Ongoing operational cost can exceed on-prem if poorly managed

3. **What is the primary function of a hypervisor in virtualization?**
   Abstract and arbitrate access to physical hardware so that multiple isolated virtual machines can run concurrently on the same host.

4. **What is a virtual machine (VM)?**
   A software emulation of a physical computer that runs its own complete operating system and applications using virtualized hardware provided by a hypervisor.

5. **What are the benefits of using virtual machines?**
   - Hardware consolidation & higher utilization
   - Strong fault/isolation boundaries
   - Snapshot, clone, rollback, live-migration capabilities
   - Dev-test agility (many OS/configs on one box)

6. **List five use cases of virtual machines.**
   1. Development & testing (quick spin-up/tear-down)
   2. Legacy application containment (old OS/security isolation)
   3. Server consolidation (many services on fewer boxes)
   4. Malware analysis sandbox
   5. Cross-platform CI/CD build farm

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?**

   To create an identical copy quickly (config, disks, memory state) for scaling-out services, backup, or template-based provisioning without reinstalling the OS.