Q1:

Virtual Machine abstracts the hardware of computer such as CPU, disk drives, memory, NIC etc, into many different execution environments as per our requirements, hence giving us a feel that each execution environment is a single computer. For example, Virtual Box , VMware.

When we run different processes on an operating system, it creates an illusion that each process is running on a different processor having its own virtual memory, with the help of CPU scheduling and virtual-memory techniques. There are additional features of a process that cannot be provided by the hardware alone like system calls and a file system. The virtual machine approach does not provide these additional functionalities but it only provides an interface that is same as basic hardware. Each process is provided with a virtual copy of the underlying computer system.

Working

VMs are made possible through virtualization technology. Virtualization uses software to simulate virtual hardware that allows multiple VMs to run on a single machine. The physical machine is known as the host while the VMs running on it are called guests.

This process is managed by software known as a hypervisor. The hypervisor is responsible for managing and provisioning resources—like memory and storage—from the host to guests. It also schedules operations in VMs so they don't overrun each other when using resources. VMs only work if there is a hypervisor to virtualize and distribute host resources.