**1) What is the history of LINUX?**

->Linux is a kernel base operating system, which is created by Linus Torvalds in 1991.

And he originally released Linux as free software under the GNU General Public License.

->Linux is considered one of the most stable, secure, and reliable operating systems and widely used in servers, Supercomputer, and enterprise environments.

->Hence the Linux is free and open-source software, So anyone could use, modify, and redistribute his source code.

Nowadays Linux has many distributions (versions).

1)Ubuntu

2)Fedora

3)Centos

4)Kali

5)Mint.

**2) What is the Architecture of Linux?**

-> Linux generally consist of four basic elements and components.

-Hardware

-Kernel

-Shell

-Application

**3) What is Kernel in Linux?**

-> Kernel is the main component of Linux; It is simply a resource manager that act as a bridge between hardware and software. It converts High level language into Low level language.

**Types of Kernel:**

-Monolithic Kernel

-Micro kernel

-Hybrid kernel

-Exo kernel

**4) What is Shell?**

-> Shell is Linux command line interpreter. It provides an interface between user and kernel and executes programs called commands.

**Types of Shell:**

-Bash Shell : (Bash shell present in /usr/bin/bash)

-C Shell

-Zsh Shell : (Bash shell present in sbin/zsh)

-Tenex C Shell

-Korn Shell

-Fish Shell

**5) What is Virtualization?**

-> Virtualization is creating a virtual version of something, specifically computed hardware, storage devices and network resources. To create virtual machine hypervisor is used to create a software layer intercept software request for hardware.

**Types of Virtualization:** **Types of Virtualization in Cloud Computing:**

-Full Virtualization -Server Virtualization

-Para Virtualization -Storage Virtualization

-OS-Level Virtualization -Network Virtualization

-Data Virtualization

-Application Virtualization

-Desktop Virtualization

**6) What is Hypervisor?**

-> A hypervisor is also known as Virtual Machine Monitor (VMM).

Hypervisor is a software that create and run virtual machine. Hypervisor allows one host computer to support multiple guest by virtually sharing it’s resources, Such as memory and processing.

There are two main hypervisor types,

-Type-1 (or) **Bare metal**

-Type-2 (or) **Hosted**

**7) Difference Between Virtualization and Hypervisor?**

|  |  |
| --- | --- |
| **Virtualization** | **Hypervisor** |
| 1)Virtualization refers to the process of creating virtual version of resources, Such as operating system, servers, storage devices and network. | 1)A hypervisor, also known as a virtual machine monitor (VMM), is a software or firmware that enables the creation and management of virtual machines. |
| 2) Consolidates multiple physical resources into a single virtual resource to improve resource utilization and efficiency. | 2) Provides a platform for creating and running multiple virtual machines (VMs) on a single physical machine. |
| 3)It is generally used for testing application on different platforms for OS, to conserve physical space, reduce cost, increase efficiency and productivity, etc. | 3)It is generally used for various tasks such cloud computing, server management, running programs compatible with OS, etc. |