**Assignment: Linux Server**

**Module: 1 - Linux server - Understand and use essential tools**

1] What is the minimum number of partitions you need to install Linux?

To install Linux, the **minimum number of partitions** required depends on the specific Linux distribution and setup, but generally, you need at least:

1. **Root (/) Partition**: This is mandatory and contains the Linux operating system, user files, and applications.
   * Suggested size: 10-20 GB or more depending on your use case.

Optionally, you might also create the following partitions:

* **Swap Partition** (Optional): Acts as virtual memory if your RAM is exhausted. However, it's not strictly necessary if you have enough RAM.
* **Boot (/boot) Partition** (Optional): Some setups may require a separate /boot partition, especially for specific bootloader configurations.

2] . Explain About Chmod Command

The chmod command in Linux is used to **change file or directory permissions**. Permissions determine who can read, write, or execute a file.

**Modes:**

1. **Symbolic mode**: Uses letters for user categories and permissions:
   * u (user), g (group), o (others), a (all).
   * Permissions: r (read), w (write), x (execute).
   * Example: chmod u+r file (adds read permission for the user).
2. **Numeric mode**: Uses numbers to represent permissions:
   * 4 = Read, 2 = Write, 1 = Execute.
   * Combine values: chmod 755 file sets rwxr-xr-x.

**Common Examples:**

* chmod 777 file – Full permissions for everyone.
* chmod u+x file – Adds execute permission for the user.
* chmod g-w file – Removes write permission for the group.

3] How to check Linux memory utilization

To check Linux memory utilization, use the command:

free -h

4] Use grep to search for specific patterns in files.

To use grep to search for specific patterns in files:

grep "pattern" filename

Example:

grep "error" log.txt

This searches for the word "error" in log.txt.

5] · Get Connecting on a linux server by ssh

To connect to a Linux server via SSH, use:

ssh username@server\_ip

Example:

ssh user@192.168.1.1

Replace username and server\_ip with the appropriate values.

6] ·Describe the root account

The root account in Linux is the **superuser** with unrestricted access to all commands, files, and system resources. It is used for system administration and has the highest privileges

7] What is shell, What is Linux, What is Bash?

A shell is a command-line interface that allows users to interact with the operating system by executing commands.

Linux is an open-source, Unix-like operating system kernel used in various distributions for servers, desktops, and embedded systems.

Bash (Bourne Again Shell) is a popular Linux shell that provides a command-line interface with scripting capabilities.

8. Write the Linux command to show the current working directory.

= pwd

9] . write the Linux command to get help with various options.

man <command>

10]. Write the linux comman! to display what all users are currently doing.

w

11] . write the Linux command to get information about the operating system

Uname -a

12] . Write the Linux command to create a hard link of a file.

ln <source\_file> <hard\_link>

13] . Write the Linux command to create a soft link of a file as well as Directory.

File: ln -s <source\_file> <soft\_link>

Directory: ln -s <source\_directory> <soft\_link>

14] . Write the Linux command! to search for specific pattern in a file.

grep "<pattern>" <file\_name>

15] . Write the Linux command to show the use of basic regular expressions using grep command.

grep -E "<regular\_expression>" <file\_name>