1. What are inode and process id?

An inode (index node) is the unique name given by the operating system to each file. It serves as a unique identifier for a specific piece of metadata on a given filesystem.

1. Which are the Linux Directory Commands?

These are the Linux directory commands: -

1. **pwd** - The pwd command stands for (print working directory). It displays the current working location or directory of the user. It displays the whole working path starting with /. It is a built-in command.
2. **ls** - The ls command is used to show the list of a folder. It will list out all the files in the directed folder.
3. **cd** - The cd command stands for (change directory). It is used to change to the directory we want to work from the present directory.
4. **mkdir** - With mkdir command we can create our own directory.
5. **rmdir** - The rmdir command is used to remove a directory from our system.
6. What is Virtual Desktop?

A virtual desktop is a software emulation of a hardware device that runs on a physical or [virtual machine](https://www.citrix.com/en-in/solutions/vdi-and-daas/what-is-a-virtual-machine.html) at a remote location, hosted either on premises or in the cloud. We(users) can access our virtual desktops remotely over a network. Any endpoint device, such as a laptop, smartphone, or tablet, can be used to access a virtual desktop. The virtual desktop provider installs client software on the endpoint device, and the user then interacts with that software on the device.

1. Which are the different modes of vi editor?

There are three different modes of vi editor:

1. **Command Mode:** When vi starts up, it is in Command Mode. This mode is where vi interprets any characters we type as commands and thus does not display them in the window. This mode allows us to move through a file, and to delete, copy, or paste a piece of text.  
   To enter into Command Mode from any other mode, it requires pressing the [Esc] key. If we press [Esc] when we are already in Command Mode, then vi will beep or flash the screen.
2. **Insert mode:** This mode enables us to insert text into the file. Everything that’s typed in this mode is interpreted as input and finally, it is put in the file. The vi always starts in command mode. To enter text, we must be in insert mode. To come in insert mode, we simply type i. To get out of insert mode, press the Esc key, which will put us back into command mode.
3. **Last Line Mode (Escape Mode):** Line Mode is invoked by typing a colon [:], while vi is in Command Mode. The cursor will jump to the last line of the screen and vi will wait for a command. This mode enables us to perform tasks such as saving files, executing commands.
4. What are daemons?

Daemons are the utility program that runs continuously as a background process and wakes up to handle periodic service requests and take care of certain subsystems to ensure that the operating system runs properly.

1. What are the process states in Linux?

There are five Linux process states.

* 1. 'D' = UNINTERRUPTABLE\_SLEEP
  2. 'R' = RUNNING & RUNNABLE
  3. 'S' = INTERRRUPTABLE\_SLEEP
  4. 'T' = STOPPED
  5. 'Z' = ZOMBIE

1. Explain grep command.

Grep (Global regular expression print) command is the most powerful and regularly used Linux command-line utility. Using Grep, we can search for useful information by specifying a search criterion. It searches for a particular expression pattern in a specified file. When it finds a match, it prints all the lines of a file that matched the specified pattern.

**Example**: Search any line that contains the word in filename on Linux:  
grep 'word' filename

1. Explain Process Management System Calls in Linux

System call provides an interface between user program and operating system.

Process management system calls in Linux.

* fork − For creating a duplicate process from the parent process.
* wait − Processes are supposed to wait for other processes to complete their work.
* exec − Loads the selected program into the memory.
* exit − Terminates the process.

1. Explain the ‘ls’ command

The **ls** command is used to list files or directoriesin Linux and other Unix-based operating systems.

Just like we navigate in our File explorer or Finder with a GUI, the ls command allows us to list all files or directories in the current directory by default, and further interact with them via the command line.

1. Explain the redirection operator.

By default, when we execute a command, the input comes from the keyboard and the output is sent to the [Command Prompt](https://www.lifewire.com/command-prompt-2625840) window

A redirection operator is a special character that can be used with a command, like a [Command Prompt command](https://www.lifewire.com/list-of-command-prompt-commands-4092302) or [DOS command](https://www.lifewire.com/dos-commands-4070427), to either redirect the input to the command or the output from the command.