Q:1 - How are devices represented in UNIX?
All devices are represented by files called special files that are located in /dev directory.

Q:2 - What is 'inode'?
All UNIX files have its description stored in a structure called 'inode'. The inode contains info about the file-size, its location, time of last access, time of last modification, permission and so on. Directories are also represented as files and have an associated inode.

Q:3 - What are the process states in Unix?
Running : The process is either running or it is ready to run .
Waiting : The process is waiting for an event or for a resource.
Stopped : The process has been stopped, usually by receiving a signal.
Zombie : The process is dead but have not been removed from the process table.

Q:4 - What can you type at a command line to determine which shell you are using?
echo $SHELL

Q:5 - Write a command to find all of the files which have been accessed within the last 30 days.
find / -type f -atime -30 > filename.txt

Q:6 - What is a zombie?
Zombie is a process state when the child dies before the parent process. In this case the structural information of the process is still in the process table.

Q:7 - What daemon is responsible for tracking events on your system?
syslogd

Q:8 - What do you mean a File System?
File System is a method to store and organize files and directories on disk. A file system can have different formats called file system types. These formats determine how the information is stored as files and directories.

Q:9 - Tell me the name of directory structure hierarchy for Linux
/root
/boot
/bin
/sbin
/proc
/mnt
/usr
/var
/lib
/etc
/dev
/opt
/srv
/tmp
/media

Q:10 - What does /boot directory contains?
The /boot/ directory contains static files required to boot the system, such as the Linux kernel, boot loader configuration files. These files are essential for the system to boot properly.

Q:11 - If some one deletes /boot directory from your server, than what will happen?
In that case your server will be in unbootable state. Your Server can’t boot without /boot directory because this directory contains all bootable files

Q:12 - What does /dev directory contain?
The /dev directory contains all device files that are attached to system or virtual device files that are provided by the kernel.

Q:13 - What is the role of udev daemon?
The udev demon used to create and remove all these device nodes or files in /dev/ directory.

Q:14 - What does /etc/X11/ directory contains?

The /etc/X11/ directory is for X Window System configuration files, such as xorg.conf.

Q:15 - What does /etc/skell directory contains?
The /etc/skel directory contains files and directories that are automatically copied over to a new user's home directory when such user is created by the useradd or adduser command.

Q:16 - Tell me name of Linux File systems?
Ext2
Ext3
Ext4

Q:17 - Any idea about ext4 file system?
The ext4 or fourth extended filesystem is a journaling file system developed as the successor to ext3. Ext4 filesystem released as a functionally complete and stable filesystem in Linux with kernel version 2.6.28.
Features of ext4 file system:-
1. Currently, Ext3 supports 16 TB of maximum file system size and 2 TB of maximum file size. Ext4 have 1 EB of maximum file system size and 16 TB of maximum file size. [An EB or exabyte is 1018 bytes or 1,048,576 TB]
2. Fast fsck check than ext3
3 In Ext4 the journaling feature can be disabled, which provides a small performance improvement.
4. Online defragmentation.
5. Delayed allocation
Ext4 uses a filesystem performance technique called allocate-on-flush, also known as delayed allocation. It consists of delaying block allocation until the data is going to be written to the disk, unlike some other file systems, which may allocate the necessary blocks before that step.

Q:18 - How we create ext3 file system on /dev/sda7 disk?
mkfs –j /dev/sda7

Q:19 - Can we convert ext2 filesystem to ext3 file system?
Yes, we can convert ext2 to ext3 file system by tune2fs command.
tune2fs –j /dev/

Q:20 - How we will create ext4 file system?
mke2fs -t ext4 /dev/DEV

Q:21 - Explain /proc filesystem?
/proc is a virtual filesystem that provides detailed information about Linux kernel, hardware's and running processes. Files under /proc directory named as Virtual files. Because /proc contains virtual files that's why it is called virtual file system. These virtual files have unique qualities. Most of them are listed as zero bytes in size. Virtual files such as /proc/interrupts, /proc/meminfo, /proc/mounts, and /proc/partitions provide an up-to-the-moment glimpse of the system's hardware. Others, like the /proc/filesystems file and the /proc/sys/ directory provide system configuration information and interfaces.

Q:22 - What is the use of sysctl command?
The /sbin/sysctl command is used to view, set, and automate kernel settings in the /proc/sys/ directory.

Q:23 - /proc/ directory contains a number of directories with numerical names. What is that?
These directories are called process directories, as they are named after a program's process ID and contain information specific to that process.

Q:24 - What is SWAP Space?
Swap space in Linux is used when the amount of physical memory (RAM) is full. If the system needs more memory resources and the RAM is full, inactive pages in memory are moved to the swap space. While swap space can help machines with a small amount of RAM, it should not be considered a replacement for more RAM. Swap space is located on hard drives, which have a slower access time than physical memory.

Q:25 - What are the steps to create SWAP files or Partition?
- Create swap partition or file
- Write special signature using "mkswap"
- Activate swap space by "swapon –a" command
- Add swap entry into /etc/fstab file

Q:26 - How you will create swap file of size 4 GB and explain swap file entry in /etc/fstab file?

Create partition of 4Gb
mkswap /SWAPFILE
swapon –a
Entry into /etc/fstab file.
/SWAPFILE swap swap defaults 0 0

Q:27 - Tell me the steps to remove the swap file?
Firstly disable the swap file by “swapoff” command.
Remove Swap file entry from /etc/fstab file.
Now remove the swap file by “rm” command.

Q:28 - What can we do with “parted” command or utility?
- View the existing partition table
- Add partitions from free space or additional hard drives
- Change the size of existing partitions

Q:29 - How we will check free space on drive /dev/sda with parted command?
#parted /dev/sda
print free

Q:30 - Can we resize the size of a partition?
Yes, we can resize the size of partition by “parted” command.
#parted /dev/sda
print
To resize the partition, use the resize command followed by the minor number for the partition, the starting place in megabytes, and the end place in megabytes. For example:
resize 3 1024 2048
After resizing the partition, use the print command to confirm that the partition has been resized correctly, is the correct partition type, and is the correct file system type.

Q:31 - What is LVM?
LVM stands for Logical Volume Manager. LVM, is a storage management solution that allows administrators to divide hard drive space into physical volumes (PV), which can then be combined into logical volume groups (VG), which are then divided into logical volumes (LV) on which the filesystem and mount point are created.

Q:32 - What are the steps to create LVM?

- Create physical volumes by “pvcreate” command
#pvcreate /dev/sda2
- Add physical volume to volume group by “vgcreate” command
#vgcreate VLG0 /dev/sda2
- Create logical volume from volume group by “lvcreate” command.
#lvcreate -L 1G -n LVM1 VLG0
Now create file system on /dev/sda2 partition by “mke2fs” command.
#mke2fs -j /dev/VLG0/LVM1

Q:33 - What is the difference between LVM and RAID?
RAID provides redundancy but LVM doesn’t provide Redundancy.

Q:34 - What are LVM1 and LVM2?
LVM1 and LVM2 are the versions of LVM.
LVM2 uses device mapper driver contained in 2.6 kernel version.
LVM 1 was included in the 2.4 series kernels.

Q:35 - What is Volume group (VG)?
The Volume Group is the highest level abstraction used within the LVM. It gathers together a collection of Logical Volumes and Physical Volumes into one administrative unit.

Q:36 - What is physical extent (PE)?
Each physical volume is divided chunks of data, known as physical extents; these extents have the same size as the logical extents for the volume group.

Q:37 - What is logical extent (LE)?
Each logical volume is split into chunks of data, known as logical extents. The extent size is the same for all logical volumes in the volume group.

Q:38 - Explain LVM snapshot?
LVM snapshots allow the administrator to create a new block device which presents an exact copy of a logical volume, frozen at some point in time.

Q:39 - How you will check on Your server or system device-mapper is installed or not?

Check the following file.
#cat /proc/misc
if this file contains "device-mapper" term it means device mapper is installed on your system.

Q:40 - How are snapshots in LVM2 different from LVM1?
In LVM2 snapshots are read/write by default, whereas in LVM1, snapshots were read only.

Q:41 - What is the maximum size of a single LV?
For 2.4 based kernels, the maximum LV size is 2TB.
For 32-bit CPUs on 2.6 kernels, the maximum LV size is 16TB.
For 64-bit CPUs on 2.6 kernels, the maximum LV size is 8EB.

Q:42 - If a volume group named as VG0 already exists but i need to extend this volume group up to 4GB.Explain all steps?
Firstly create Physical volume (/dev/sda7) of size 4GB.
Now run following command.
vgextend VG0 /dev/sda7

Q:43 - If a volume group VG0 have 3 PV's (/dev/sda6, /dev/sda7, /dev/sda8) but i want to remove /dev/sda7 pv from this VG0?
vgreduce VG0 /dev/sda7

Q:44 - Which command is used to extend a logical volume?
lvextend --size + /dev//
resize2fs /dev//

Q:45 - Tell me all steps to remove a LVM?
To remove a logical volume from a volume group, first unmount it with the umount command:
umount /dev//
and then use the lvremove command:
lvremove /dev//

Q:46 - Which command is used to create LVM Snapshot?
vcreate --size -s -n
The lvcreate command is used to create a new logical volume, meaning there must be free physical extents in the logical volume group to create a snapshot. The -s option means that the LV is a snapshot, is the name of the new LV created, and
is the name of the LV from which to create the snapshot.

Q:47 - What is the location of "network" file and what does this contains?
location :- /etc/sysconfig/network
This file contains following fields
NETWORKING=yes
NETWORKING_IPV6=no
HOSTNAME=localhost.localdomain

Q:48 - Which deamon is required to start Network services?
network
/etc/init.d/network start

Q:49 - What is the role of /etc/resolv.conf file?
In this file we sets the DNS servers (using their IP addresses) and the search domain. The values of the DNS servers are often added when the network is activated because the data can be provided by DHCP or a similar service.

Q:50 - What is YUM?
YUM stands for Yellow dog Updater, Modified because it is based on YUP, the Yellow dog Updater. Where does the name Yellow dog come from? Yellow Dog is a version of Linux for the Power Architecture hardware and is RPM-based, just like Red Hat Enterprise Linux and Fedora. YUP, and later YUM, were written by the Linux community as a way to maintain an RPM-based system.

Q:51 - What are the advantages of YUM?
- Automatic resolution of software dependencies.
- Multiple software locations at one time.
- Ability to specify particular software versions or architectures.

Q:52 - How you will install software by YUM?

yum install

Q:53 - Which option is required to assume the answer "yes" to any questions asked during installation of package dependencies for YUM?
The "-y" option is used to assume the answer "yes".
For Example
yum -y install squid

Q:54 - How to remove a software by YUM?
yum remove

Q:55 - How Many Run Levels present in Linux?
There are 7 run levels, with each having its own properties.
- 0: Halt the system
- 1: Single-user mode
- 2: Not used
- 3: Multi-user mode with text login
- 4: Not used
- 5: Multi-user mode with graphical login
- 6: Reboot

Q:56 - Which configuration file is required to change the Run Level of Server or system?
/etc/inittab
To change the default run level, modify this line.
id:5:initdefault:

Q:57 - How to install Linux software’s by RPM?
rpm -ivh test-1.0-1.i386.rpm

Q:58 - If a file associated with test-1.0-1.i386.rpm deleted, than How we will recover that file?
We can reinstall this rpm again.

Q:59 - If you are getting error "package is already installed" but you have to install

package any how. what option you will use?
rpm -ivh test-1.0-1.i386.rpm
Preparing... ### [100%] package test-1.0-1 is already installed
In this case you can use "--replacepkgs" option.
rpm -ivh –replacepkgs test-1.0-1.i386.rpm

Q:60 - Which options are required to upgrade a RPM?
Upgrading a package is similar to installing one. Type the following command at a shell prompt:
rpm -Uvh test-2.0-1.i386.rpm

Q:61 - In which directory RPM database stored?
/var/lib/rpm

Q:62 - Explain the command "rpm -qa"?
It will queries all currently installed packages.

Q:63 - Explain the command "rpm -qf "?
it queries the RPM database for which package owns . When specifying a file, specify the absolute path of the file.

Q:64 - How to verify all installed packages?
rpm -Va

Q:65 - How to verify the signature of an rpm?
rpm -K test-1.0-1.i386.rpm

Q:66 - How to View ACLs for a file(test_file)?
getfacl test_file

Q:67 - What is “iptable”?
iptable is the default firewall in a Linux machine. Sometimes this question is also asked as “what is the name of the default firewall in a Linux machine”. Questions are also

asked on the input and output chain policy so prepare good concepts on iptables.

Q:68 - What do you know about job scheduling?
Job scheduling is an important job when your are going to be a Linux admin. How job scheduling is done in Linux? The answer is using cron tool.

Q:68 - Default file and directory permission?
the default file permission in Linux is 644 and the default directory permission is 755.

Q:69 - Every command in Linux is a?
executable program

Q:70 - How long can a filename in Linux be?
Correct answer: 255 character

Q:71 - What is the shortcut to the login directory?
Correct answer: cd + enter key

Q:72 - The hierarchy of a series of directories branching in a user system starts from
Correct answer: /home

Q:73 - Which directory contains configuration files that stores system and application setting?
Correct answer: /etc

Q:74 - The advantage of using NFS rather than Samba for file sharing in Linux is
Correct answer: compatibility with Windows file sharing

Q:75 - Which of the following commands can be run to remove all the rules in an iptables table?
Correct answer: iptables -F

Q:76 - Which of the following is the BEST way to set up SSH(Secure Shell) for communicating between Systems without needing passwords?
Correct answer: Use ssh-keygen for generating public-private keys.

Q:77 - Which of the following allows to secure remote command line access?
Correct answer: SSH(Secure Shell)

Q:78 - Which Linux command will successfully mounts a USB drive?
Correct answer: mount /dev/sda1 /mnt/usb

Q:79 - _____ is a common tool for determining services and ports running on a remote Linux.
Correct answer: nmap

Q:80 - Which command is used to find what is in your home directory?
Correct answer: % ls

Q:81 - Which command is used to clear the screen?
Correct Answer: Clear

Q:82 - The head command writes the first _____ lines of a file to the screen.

answer: ten

Q:83 - What is used to search files for specified words or patterns?
answer: grep

Q:84 - > symbol is used to redirect the output of a command
answer: True

Q:85 - Pipe symbol is represented by
answer: |

Q:86 - Which command is used to see the online manual?
answer: man

Q:87 - A process is identified by a unique
answer: pid

Q:88 - Which command reduces the size of a file?
answer: gzip , bzip2

Q:89 - What is the content of /etc directory?
answer: it contains all configuration file

Q:90 - mount –r is used to mount a file in read only mode
answer: True

Q:91 - Cal is used to display calendar. If no arguments are supplied, what is displayed?
answer: The current month is displayed

Q:92 - Which of the following command is used to test a network connection?
answer: ping

Q:93 - types of shell?
answer: /bin/sh
/bin/bash
/sbin/nologin
/bin/tcsh
/bin/csh
/bin/mksh
/bin/ksh
/bin/zsh

Q:94 - Which file contains all the information of users on your system
Answer: /etc/passwd

Q:95 - Which directory is used to write messages when kernel is loading?
answer: /var/log/messages

Q:96 - When Linux is installed, which account is created by default?
answer: Root

Q:97 - Using CHMOD if we want to give ALL permissions to a user, which mode is used?

answer: 777

Q:98 - What is the default UID when we are creating first user.(useradd)?
answer: The first user created by root will always have a UID 500.
User ID=uid. The uid of root is 0.
UID from 1 to 499 is reserved for system services such as tha user apache,nagios,etc.

Q:99 - How many users are created by default.
anwser: Maximum users=60,000 by default.This could be increased.

Q:100 - Fields in password and shadow file.
A: Passwd file
Root:x:0:0:0:root:/root:/bin/bash
(username: encrypted form of password: uid: gid: personal info: home dir:shell)

Q:101 - When user is created which are the files it is updated.
answer: /etc/passwd – contains various pieces of information for each user account
/etc/shadow – contains the encrypted password information for user's accounts and optional the password aging information.
/etc/gshadow – group shadow file (contains the encrypted password for group)
/home –All users data is stored here.
/etc/login.defs---Shadow password suite configuration.