1. what are the different run level in linux?
Ans) 0 - Shutdown or Halt
1 - Single User Mode
2 - Multi User Mode without NFS (Network FileSystem Sharing)
3 - Multi User Mode with NFS
4 - Undefined
5 - Multi User Mode with X-windows.
6 - Reboot

2. how to check your box runlevel?
Ans) who -r and runlevel

3. where we define default runlevel?
Ans) /etc/inittab file

4. How to recover MBR sector?
Ans) Boot the system in rescue mode and run /sbin/grub-install /dev/sda1 command

5. How to recover root password?
Ans) Boot up the system in single user mode and type passwd command

How can you boot the system in single user mode if you don't have the root password.
Ans) connect to console powercycle the system

How can you connect to the console
Ans) HP servers ILO(Integrited Light Out) and Dell Server DRAC (Dell Remote Access Controller)

6. booting process of the linux system?
Ans)
1. BIOS Initialization happens
2. Bios passes control to First Stage of the bootloader which resides in MBR (Master Boot Record)
3. First Stage of the bootloader passes control to Second stage of the bootloader which resides in the /boot partition.
4. Second Stage of bootloader intialize the kernel,
5. kernel detect all devices, intialize the drivers, Mount the root filesystem into read-only mode and kick of the init process
6. Init process reads /etc/inittab file to boot up the system in default runlevel
7. /etc/rc.d/rc.sysinit script is executed,
8. system initialization script configure udev devices, hostnames, IP's, selinux, and remount the / (root) filesystem into read-write mode
9. System V services starts based on run-level

7. What is the purpose of the default gateway?
Ans) default gateway is the IP address of the router,
it's a entry point of the network to communicate with the other network.

8. How to check the default gateway?
Ans) netstat -r or route

9. How to configure the default gateway?

Ans) Define GATEWAY Parameter in /etc/sysconfig/network or /etc/sysconfig/network-scripts/ifcfg-<interface name>

10. How to check the network errors?
Ans) netstat -i and ethtool -S <interface card mname>
example: ethtool -S eth011.

How to differentiate Virtual IP and Non Virtual IP?
Ans) for Virtual IP address device name has ":" and Non Virtual without ":"

12. What are the difference between TCP and UDP?
ANs TCP : Connection oriented UDP : Connectionless
TCP : Slow UDP: Faster

12. How the TCP 3 way hand shake happen?
Ans) syn, syn+ack, and ack

How the TCP connection terminates
fin, fin+ack and ack

13. How to check different network ports listening in the system?
Ans) netstat -anp|grep LISTEN

14. What are different types of links? what are the difference between them?
Ans) Soft and Hard links
soft links have different Inode number
hard links have same inode numbers

15. How can we find associated hard link file?
Ans) ls -l <filename> (to check how many links file have)
ls -i <filename> (find inode number)
find / -inum <inode number> (hard links have same Inode number search same inode files)

16. What is inode? what information contains?
Ans) inode is a table on the disk which contains the information related to file.

What Information inode table contains?

Ans) Owner of the file
Group to which owner belongs
Type of the file
file access permission (rwx)
Date and time of last access
Date and time of last modification
Number of links to the file
Size of the file
Addresses of blocks where the file is physically present.

17. How to identify new disk in the system?
Ans) fdisk -l or parted -l

18. What are the standard different types of RAID?
Ans) RAID 0 - Striping
RAID 1 - Mirroring

RAID 5 - Striping with Parity

19. how to configure httpd service persistent with reboot?
Ans) chkconfig --level 3 httpd on

what does chkconfig command do?
Ans) Create the symbolics link in runlevel directory (/etc/rc.d/rc3.d)
start with

'S' for start service

'K' for kill service

20. What is the DNS client configuration file?
Ans) /etc/resolv.conf

21. What is the DNS package name and version?
Ans) Bind and 9.8

22. What is the main DNS configuration file?
Ans) /etc/named.conf

23. What are the different types of DNS records?
Ans) A, PTR, TXT, MX and CNAME

PTR: reverse lookup record - using the ipaddress you can get the hostname of the server
MX: Mail Exchange - this is mail server responsibility
CNAME: Conominical Name record - maps alias to true name or cononical name
A: Alias - maps the domain name to the ipaddress of the host
txt: text record maps to human readable names

24. How the DNS zone files get transfered from Master to slave?
Ans) Ater modification of zone file serial number need to change.

25. Location of rpm database?
Ans) /var/lib/rpm

26. How to check file belong to which rpm package?
Ans) rpm -qf <filename>

27. What are the advantages of yum over rpm?
Ans) centrally managed rpm's and resolve dependency issue.

28. What is the significance of sicky bit?
Ans) If the Directory has sticky bit set, in that directory only owner of the files and root user can delete the files.

29. What is the significance of set UID and GID?
Ans) UID inherits the owner (root) permissions when executing a file (example: ping, passwd, sudo files have set UID bit set)

chmod 4775

GID: All files that created in the directory with set GID belong to the group to which directory belongs.
Not to the group to which creating process belongs

chmod 2775
chmod g+s

30. which file keep the information about system user passwords?
Ans) /etc/shadow

31. How do we change system authentication type and host resolution?
Ans) /etc/nsswitch.conf

32. What is the system initialization script name?
Ans) /etc/rc.d/rc.sysinit

33. Using LVM how the disk available in the system?
Ans) fdisk -l (identify the disk)
pvcreate disk
ex: pvcreate /dev/sdb
vgcreate <volumegroup name> disk
ex: vgcreate vg1 /dev/sdb
lvcreate -L <size> -n <logical volume name> <volume group>
ex: lvcreate -L 20g -n lv1 vg1

34. How to Migrate or move data from one physical disk to another physical disk using LVM?
Ans) add the disk into the volume group first
pvcreate
vgextend
pvmove

35. How add new disk into LVM and extend the existing logical volume?
Ans) fdisk -l (identify new disk)
pvcreate
vgextend
lvextend
resize2fs

36. How do you check if the system is up?

Ans) ping <ipaddress or hostname>

Ping uses ICMP and its a network layer protocol

37) How do you check for remote box port is open

Ans) nc -v ipaddress port#

38. What is the port number for email MX
record

Ans) SMTP port #25, IMAP uses #143 and POP3 uses #110
we have multiple mx record in dns

resolve mail to the ipaddress

39. what will happen if there is no MX record

Ans) it will try to send email to domain IP

40. What is local DNS resolver file
Ans) /etc/hosts

41. What is DNS port number

Ans) DNS port is 53 and it is UPD, but there is chance it can be TCP. IT will switch to TCP when it has big record to resolve.

42. Trouble shoot slower performance issue of the box

Ans) Troubleshoot performance for CPU, Memory and high disk i/o(input/ output)

43. How do you check running process in memory
Ans) use top command

ps -ef

44) What is the system kernel parameter file name?
Ans) /etc/sysctl.conf

45) what is the commmand to load kernel parameters in the memory without rebooting the system?
Ans) sysctl -p

46) What is the command to check all kernel parameters in the system?
Ans) sysctl -a

47) How to check what are the modules loaded in the memory?
Ans) lsmod

48) How to load the module into the memory?
Ans) modprobe <module name>

49) How to unload the module from the memory?

Ans) modprobe -r <module name>

50) How the pxe kick installation works?
Ans)
1. The Client Machine boots to PXE which request for DHCP Address
2. The DHCP server responds with an IP address for the client machine along with the address of TFTP server and a file to load from that server.
3. The client then downloads pxelinux.0 from the specified TFTP server and executes it.
4. pxelinux.0 then searches the pxelinux.cfg directory on the server for a configuration file that matches the IP address of the machine.
5. If no matches are found, it will attempt to load the file called default.
6. the configuration file default loaded by pxelinux.0 will have instructions on what to do next.
7. some choices include boot to local hard drive, boot to an image file or load vmlinuz and initrd.img file.

51) what is name of DNS daemon?
Ans) named

52) What are the different modes of selinux?
Ans) disabled, permissive and enforcing

53) How to change enforcing to permissive?
Ans) setenforce 0

54) How to change permissive to enforcing?
Ans) setenforce 1

55) How can you permanently disabled the selinux?
Ans) Change selinux parameter to disabled in /etc/sysconfig/selinux file and reboot the box

56) How to change selinux context to default?
Ans) restorecon -R /<directory)>

57) How to check default selinux context of specific file or directory?
Ans) semanage fcontext -l|grep "file or directory"

58) what is the selinux log file name?
Ans) /var/log/audit/audit.log

59) What is IPTABLES?
Ans) iptables is the name of the firewall in LINUX, use to restrict system and application access.

60) what are the diffrent types of the CHAINS in IPTABLES?
Ans) INPUT, OUTPUT and FORWORD.

61) Suppose if you were trying to unmount any mounted directory, giving message mount is busy. How to check who access it? and kill the user whoever access it?
Ans) fuser </mount Point/> (this command will show you PID for who access the mount)

How can you kill the users who access the mount without seeing pid's

Ans) fuser -k </mount>

62) Suppose file consuming lot of disk space, You deleted the file, but still you didn't see deleted file space didn't re-claimed back, How to check what's wrong with it and how can you fix it?
Ans)

LSOF
1. open file descriptor in the memory holding the file delete process.
2. to check open file descriptor run lsof command and grep for deleted file.

63) What is the difference between hard mount and soft mount?
Ans) The NFS mount can be mount as a "soft mount" or as a "hard mount" these mount option define the how the NFS client should be handle NFS crash/failure. we will see the difference hard mount and soft mount.

Soft Mount:-> Suppose you have mounted the NFS by using "soft mount" when a program request a file from nfs server. NFS Daemon will try to retrieve the data from the NFS server. if it doesn't get any response from NFS server due to some failure or crash on the nfs server. then nfs client report an error to the process on the client machine requesting the file access the
Advantage: "fast response" it doesn't wait for the NFS server to respond. the Main disadvantage of this method is data corruption or loss of data so this is not the recommended option to use.

Hard Mounting;-> if you have mounted the nfs by "hard mount". it will repeatly try to connect to the server. Once the server is back online the program will continue to execute undistrubed the state where it was during the crash. we can use the mount option "intr" which allows nfs request to interrupt if the server goes down or cannot be accessable.

64) How to check top 4 disk consuming directories in "/"?
ans) du -sk /*|sort -n -r|head -4

65) How to check top 10 disk consuming files in the system?
ans) find / -type f -printf '%s %p\n' |sort -n -r |head -10