101-500

Number: 101-500
Passing Score: 800
Time Limit: 120 min
File Version: 1

101-500

Exam A

QUESTION 1
Which type of file system is created by `mkfs` when it is executed with the block device name only and without any additional parameters?

A. XFS
B. VFAT
C. ext2
D. ext3
E. ext4

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 2
Which of the following commands changes the number of days before the ext3 filesystem on /dev/sda1 has to run through a full filesystem check while booting?

A. tune2fs –d 200 /dev/sda1
B. tune2fs –i 200 /dev/sda1
C. tune2fs –c 200 /dev/sda1
D. tune2fs –n 200 /dev/sda1
E. tune2fs --days 200 /dev/sda1

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 3
Which is the default percentage of reserved space for the root user on new ext4 filesystems?

A. 10%
B. 3%
C. 15%
D. 0%
E. 5%

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 4
Which of the following is true when a file system, which is neither listed in `/etc/fstab` nor known to system, is mounted manually?

A. systemd ignores any manual mounts which are not done using the `systemctl mount` command
B. The command `systemctl mountsync` can be used to create a mount unit based on the existing mount
C. systemd automatically generates a mount unit and monitors the mount point without changing it
D. Unless a systemd mount unit is created, systemd unmounts the file system after a short period of time
E. `systemctl unmount` must be used to remove the mount because system opens a file descriptor on the mount point

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 5
Consider the following output from the command ls –i:

```
525385 -rw-rw-r-- 2 1000 1000 0 Feb 12 19:44 a.txt
526255 lrwxrwxrwx 1 1000 1000 5 Feb 12 19:44 b.txt -> a.txt
```

How would a new file named `c.txt` be created with the same inode number as `a.txt` (Inode 525385)?

A. `ln -h a.txt c.txt`
B. `ln c.txt a.txt`
C. `ln a.txt c.txt`
D. `ln -f c.txt a.txt`
E. `ln -i 525385 c.txt`

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 6
When considering the use of hard links, what are valid reasons not to use hard links?

A. Hard links are not available on all Linux systems because traditional filesystems, such as ext4, do not support them
B. Each hard link has individual ownership, permissions and ACLs which can lead to unintended disclosure of file content
C. Hard links are specific to one filesystem and cannot point to files on another filesystem
D. If users other than `root` should be able to create hard links, `suln` has to be installed and configured
E. When a hard linked file is changed, a copy of the file is created and consumes additional space

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 7
In compliance with the FHS, in which of the directories are man pages found?

A. `/opt/man/`
B. `/usr/doc/`

C. `/usr/share/man/`
D. `/var/pkg/man`
E. `/var/man/`

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 8
What is the process ID number of the `init` process on a System V init based system?

A. -1
B. 0
C. 1
D. It is different with each reboot
E. It is set to the current run level

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 9
Which daemon handles power management events on a Linux system?

A. `acpid`
B. `batteryd`
C. `pwrmgntd`
D. `psd`
E. `inetd`

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 10
Which of the following statements are true about the boot sequence of a PC using a BIOS? (Choose two.)

A. Some parts of the boot process can be configured from the BIOS
B. Linux does not require the assistance of the BIOS to boot a computer
C. The BIOS boot process starts only if secondary storage, such as the hard disk, is functional
D. The BIOS initiates the boot process after turning the computer on
E. The BIOS is started by loading hardware drivers from secondary storage, such as the hard disk

Correct Answer: AD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 11
What is true regarding UEFI firmware? (Choose two.)

A. It can read and interpret partition tables
B. It can use and read certain file systems
C. It stores its entire configuration on the /boot/ partition
D. It is stored in a special area within the GPT metadata
E. It is loaded from a fixed boot disk position

Correct Answer: BD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 12
A faulty kernel module is causing issues with a network interface card. Which of the following actions ensures that this module is not loaded automatically when the system boots?

A. Using `lsmod --remove --autoclean` without specifying the name of a specific module

B. Using `modinfo -k` followed by the name of the offending module

C. Using `modprobe -r` followed by the name of the offending module

D. Adding a `blacklist` line including the name of the offending module to the file `/etc/modprobe.d/blacklist.conf`

E. Deleting the kernel module's directory from the file system and recompiling the kernel, including its modules

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 13
What is the first program the Linux kernel starts at boot time when using System V init?

A. `/lib/init.so`

B. `/proc/sys/kernel/init`

C. `/etc/rc.d/rcinit`

D. `/sbin/init`

E. `/boot/init`

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 14
A Debian package creates several files during its installation. Which of the following commands searches for packages owning the file `/etc/debian_version`?

A. `apt-get search /etc/debian_version`

B. `apt -r /etc/debian_version`

C. `find /etc/debian_version -dpkg`

D. `dpkg -S /etc/debian_version`

E. `apt-file /etc/debian_version`

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 15
Which of the following files exist in a standard GRUB 2 installation? (Choose two.)

A. /boot/grub/stages/stage0
B. /boot/grub/i386-pc/lvm.mod
C. /boot/grub/fstab
D. /boot/grub/grub.cfg
E. /boot/grub/linux/vmlinuz

Correct Answer: BD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 16
Which of the following commands installs all packages with a name ending with the string `foo`?

A. `zypper get "*foo"`
B. `zypper update "foo?"`
C. `zypper force "foo*"`
D. `zypper install "*foo"`
E. `zypper add ".*foo"`

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 17
Which of the following properties of a Linux system should be changed when a virtual machine is cloned? (Choose two.)

A. The partitioning scheme
B. The file system
C. The D-Bus Machine ID
D. The permissions of `/root/`
E. The SSH host keys

Correct Answer: CE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 18
Which of the following commands installs GRUB 2 into the master boot record on the third hard disk?

A. `grub2 install /dev/sdc`
B. `grub-mkrescue /dev/sdc`
C. `grub-mbrinstall /dev/sdc`
D. `grub-setup /dev/sdc`
E. `grub-install /dev/sdc`

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 19
What is true regarding the configuration of yum? (Choose two.)

A. Changes to the repository configuration become active after running `yum confupdate`
B. Changes to the yum configuration become active after restarting the `yumd` service
C. The configuration of package repositories can be divided into multiple files
D. Repository configurations can include variables such as `$basearch` or `$releasever`

E. In case `/etc/yum.repos.d/` contains files, `/etc/yum.conf` is ignored

Correct Answer: CD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 20
Which of the following `apt-get` subcommands installs the newest versions of all currently installed packages?

A. `auto-update`
B. `dist-upgrade`
C. `full-upgrade`
D. `install`
E. `update`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 21
Which command uninstalls a package but keeps its configuration files in case the package is re-installed?

A. `dpkg -s pkgname`
B. `dpkg -L pkgname`
C. `dpkg -P pkgname`
D. `dpkg -v pkgname`
E. `dpkg -r pkgname`

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 22
Which of the following commands lists the dependencies of the RPM package file `foo.rpm`?

A. `rpm –qpR foo.rpm`
B. `rpm –dep foo`
C. `rpm –ld foo.rpm`
D. `rpm –R foo.rpm`
E. `rpm –pD foo`

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 23
What is the maximum niceness value that a regular user can assign to a process with the nice command when executing a new process?

A. 9
B. 15
C. 19
D. 49
E. 99

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 24
Which of the following commands list all files and directories within the `/tmp/` directory and its subdirectories which are owned by the user root? (Choose two.)

A. `find /tmp –user root -print`
B. `find –path /tmp –uid root`

C. `find /tmp –uid root –print`
D. `find /tmp –user root`
E. `find –path /tmp –user root –print`

Correct Answer: AD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 25
Which of the following vi commands deletes two lines, the current and the following line?

A. d2
B. 2d
C. 2dd
D. dd2
E. de12

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 26
From a Bash shell, which of the following commands directly execute the instructions from the file `/usr/local/bin/runme.sh` without starting a subshell?
(Choose two.)

A. `source /usr/local/bin/runme.sh`
B. `/usr/local/bin/runme.sh`
C. `/bin/bash /usr/local/bin/runme.sh`
D. `. /usr/local/bin/runme.sh`
E. `run /usr/local/bin/runme.sh`

Correct Answer: AD
Section: (none)

Explanation

Explanation/Reference:

QUESTION 27
Immediately after deleting 3 lines of text in vi and moving the cursor to a different line, which single character command will insert the deleted content below the current line?

A. i (lowercase)
B. p (lowercase)
C. P (uppercase)
D. U (uppercase)
E. u (lowercase)

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 28
Which of the following commands changes all CR-LF line breaks in the text file `userlist.txt` to Linux standard LF line breaks and stores the result in `newlist.txt`?

A. `tr –d '\r' < userlist.txt > newlist.txt`
B. `tr –c '\n\r' '' <newlist.txt> userlist.txt`
C. `tr '\r\n' '' <userlist.txt> newlist.txt`
D. `tr '\r' '\n' userlist.txt newlist.txt`
E. `tr –s '/^M/^J/' userlist.txt newlist.txt`

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 29
Given the following input stream:
```
txt1.txt
atxt.txt
txtB.txt
```
Which of the following regular expressions turns this input stream into the following output stream?
```
txt1.bak.txt
atxt.bak.txt
txtB.bak.txt
```

A. `s/^.txt/.bak/`
B. `s/txt/bak.txt/`
C. `s/txt$/bak.txt/`
D. `s/^txt$/.bak^/`
E. `s/[.txt]/.bak$1/`

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 30
Which command must be entered before exiting vi to save the current file as `filea.txt`?

A. `%s filea.txt`
B. `%w filea.txt`
C. `:save filea.txt`
D. `:w filea.txt`
E. `:s filea.txt`

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 31

Which of the following signals is sent to a process when the key combination Ctrl+C is pressed on the keyboard?

A. SIGTERM
B. SIGCONT
C. SIGSTOP
D. SIGKILL
E. SIGINT

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 32
Which of the following commands displays the output of the `foo` command on the screen and also writes it to a file called `/tmp/foodata`?

A. `foo | less /tmp/foodata`
B. `foo | cp /tmp/foodata`
C. `foo > /tmp/foodata`
D. `foo | tee /tmp/foodata`
E. `foo > stdout >> /tmp/foodata`

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 33
Which of the following commands displays the path to the executable file that would be executed when the command `foo` is invoked?

A. `lsattr foo`
B. `apropos foo`
C. `locate foo`
D. `whatis foo`

E. `which foo`

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 34
What is true regarding the command
`ls > files`
if `files` does not exist?

A. The output of `ls` is printed to the terminal

B. `files` is created and contains the output of `ls`

C. An error message is shown and `ls` is not executed

D. The command `files` is executed and receives the output of `ls`

E. Any output of `ls` is discarded

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 35
Which of the following commands displays the contents of a gzip compressed tar archive?

A. `gzip archive.tgz | tar xvf -`
B. `tar -fzt archive.tgz`
C. `gzip -d archive.tgz | tar tvf -`
D. `tar cf archive.tgz`
E. `tar ztf archive.tgz`

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 36
Which of the following commands prints a list of usernames (first column) and their primary group (fourth column) from the `/etc/passwd` file?

A. `fmt –f 1,4 /etc/passwd`
B. `cut –d : -f 1,4 /etc/passwd`
C. `sort –t : -k 1,4 /etc/passwd`
D. `paste –f 1,4 /etc/passwd`
E. `split –c 1,4 /etc/passwd`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 37
Given a log file `loga.log` with timestamps of the format `DD/MM/YYYY:hh:mm:ss`, which command filters out all log entries in the time period between 8:00 am and 8:59 am?

A. `grep –E ':08:[09]+:[09]+' loga.log`
B. `grep –E ':08:[00]+' loga.log`
C. `grep –E loga.log ':08:[0-9]+:[0-9]+'`
D. `grep loga.log ':08:[0-9]:[0-9]'`
E. `grep –E ':08:[0-9]+:[0-9]+' loga.log`

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 38
Instead of supplying an explicit device in `/etc/fstab` for mounting, what other options may be used to identify the intended partition? (Choose two.)

A. LABEL
B. ID
C. FIND
D. NAME
E. UUID

Correct Answer: AE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 39
Which of the following commands installs the GRUB boot files into the currently active file systems and the boot loader into the first partition of the first disk?

A. `grub-install /dev/sda`
B. `grub-install /dev/sda1`
C. `grub-install current /dev/sda0`
D. `grub-install /dev/sda0`
E. `grub-install current /dev/sda1`

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 40
When removing a package on a system using dpkg package management, which `dpkg` option ensures configuration files are removed as well?

A. `--clean`
B. `--purge`
C. `--vacuum`
D. `--remove`
E. `--declare`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 41
Which of the following statements are correct when comparing Linux containers with traditional virtual machines (e.g. LXC vs. KVM)? (Choose three.)

A. Containers are a lightweight virtualization method where the kernel controls process isolation and resource management.
B. Fully virtualized machines can run any operating system for a specific hardware architecture within the virtual machine.
C. Containers are completely decoupled from the host system's physical hardware and can only use emulated virtual hardware devices.
D. The guest environment for fully virtualized machines is created by a hypervisor which provides virtual and emulated hardware devices.
E. Containers on the same host can use different operating systems, as the container hypervisor creates separate kernel execution.

Correct Answer: ABD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 42
Which of the following commands lists all currently installed packages when using RPM package management?

A. `yum --query --all`
B. `yum --list --installed`
C. `rpm --query --list`
D. `rpm --list --installed`
E. `rpm --query --all`

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 43
A backup software heavily uses hard links between files which have not been changed in between two backup runs. Which benefits are realized due to these hard links? (Choose two.)

A. The old backups can be moved to slow backup media, such as tapes, while still serving as hard link target in new backups.
B. The backup runs faster because hard links are asynchronous operations, postponing the copy operation to a later point in time.
C. The backup is guaranteed to be uncharged because a hard linked file cannot be modified after its creation.
D. The backup consumes less space because the hard links point to the same data on disk instead of storing redundant copies.
E. The backup runs faster because, instead of copying the data of each file, hard links only change file system meta data.

Correct Answer: AD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 44
How many fields are in a syntactically correct line of `/etc/fstab`?

A. 3
B. 4
C. 5
D. 6
E. 7

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 45
Which of the following commands can be used to display the inode number of a given file? (Choose two.)

A. `inode`
B. `ln`

C. `ls`
D. `cp`
E. `stat`

Correct Answer: CE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 46
After a power outage, the XFS file system of `/dev/sda3` is inconsistent. How can the existing file system errors be fixed?

A. By using `mount -f` to force a mount of the file system
B. By running `xfsck` on the file system
C. By mounting the file system with the option `xfs_repair`
D. By running `xfsadmin repair` on the file system
E. By running `xfs_repair` on the file system

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 47
Which of the following commands show how the shell handles a specific command?

A. `where`
B. `type`
C. `stat`
D. `case`
E. `fileinfo`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 48
When in Normal mode in `vi`, which character can be used to begin a reverse search of the text?

A. `r`
B. `/`
C. `F`
D. `?`
E. `s`

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 49
Which of the following commands displays the manual page `command` from section 1?

A. `man command(1)`
B. `man command@1`
C. `man 1 command`
D. `man 1.command`
E. `man -s 1 command`

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 50
Which of the following commands display the IDs of all processes owned by root? (Choose two.)

A. `pgrep -c root`
B. `pgrep -u root`
C. `pgrep -f root`
D. `pgrep -U 0`
E. `pgrep -c 0`

Correct Answer: BC
Section: (none)
Explanation

Explanation/Reference:

QUESTION 51
What is the effect of the `-v` option for the `grep` command?

A. It enables color to highlight matching parts.
B. It shows the command's version information.
C. It only outputs non-matching lines.
D. It changes the output order showing the last matching line first.
E. It outputs all lines and prefixes matching lines with a+.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 52
Which of the following signals is sent to a process when the key combination Ctrl+Z is pressed on the keyboard?

A. SIGTERM
B. SIGCONT
C. SIGSTOP
D. SIGKILL
E. SIGINT

Correct Answer: C

QUESTION 53
Which of the following commands print the current working directory when using a Bash shell? (Choose two.)

A. `echo "${PWD}"`
B. `echo "${WD}"`
C. `printwd`
D. `pwd`
E. `echo "${pwd}"`

Correct Answer: AD

QUESTION 54
Which of the following commands outputs `test` to the shell?

A.
```
cat <!EOT
test
EOT
```
B.
```
cat <|EOT
test
EOT
```
C.
```
cat !<EOT
test
EOT
```
D.
```
cat &<EOT
test
EOT
```
E.
```
cat <<EOT
test
EOT
```

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 55
What is the default nice level when a process is started using the `nice` command?

A. -10
B. 0
C. 10
D. 15
E. 20

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 56
A user accidentally created the subdirectory `\dir` in his home directory. Which of the following commands will remote that directory?

A. `rmdir ~/\\dir`
B. `rmdir "~/\dir"`
C. `rmdir ~/'dir'`
D. `rmdir ~/\dir`
E. `rmdir '~/\dir'`

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 57
Which of the following commands can perform searches on file contents using regular expressions?

A. `find`
B. `locate`
C. `grep`
D. `reggrep`
E. `pgrep`

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 58
In a nested directory structure, which `find` command line option would be used to restrict the command to searching down a particular number of subdirectories?

A. `-maxdepth`
B. `-dirmax`
C. `-maxlevels`
D. `-s`
E. `-n`

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 59
Which of the following commands generates a list of user names from `/etc/passwd` along with their login shell?

A. `column -s : 1,7 /etc/passwd`
B. `chop -c 1,7 /etc/passwd`
C. `colrm 1,7 /etc/passwd`

D. `sort -t: -k1,7 /etc/passwd`
E. `cut -d: -f1,7 /etc/passwd`

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:

QUESTION 60
If the gzip compressed tar archive `texts.tgz` contains the files `a.txt` and `b.txt`, which files will be present in the current directory after running `gunzip texts.tgz`?

A. Only `a.txt, b.txt,` and `texts.tgz`
B. Only `texts.tar` and `texts.tgz`
C. Only `a.txt.gz` and `b.txt.gz`
D. Only `a.txt` and `b.txt`
E. Only `texts.tar`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 61
Which of the following statements is correct for a command ending with an `&` character?

A. The command's output is redirected to `/dev/null`.
B. The command is run in background of the current shell.
C. The command's output is executed by the shell.
D. The command is run as a direct child of the `init` process.
E. The command's input is read from `/dev/null`.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 62
Which of the following commands reads a file and creates separate chunks of a given size from the file's contents?

A. `ar`
B. `cat`
C. `break`
D. `split`
E. `parted`

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 63
In Bash, inserting `1>&2` after a command redirects…

A. …standard error to standard input.
B. …standard output to standard error.
C. …standard input to standard error.
D. …standard error to standard output.
E. …standard output to standard input.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 64
Which of the following statements are correct about the initial RAM disk involved in the boot process of Linux? (Choose two.)

A. An initramfs is a compressed file system archive, which can be unpacked to examine its contents.

B. An initramfs file contains the MBR, the bootloader and the Linux kernel.

C. After a successful boot, the initramfs contents are available in `/run/initramfs/`.

D. The kernel uses the initramfs temporarily before accessing the real root file system.

E. An initramfs does not depend on a specific kernel version and is not changed after the initial installation.

Correct Answer: AC
Section: (none)
Explanation

Explanation/Reference:

QUESTION 65
What information can the `lspci` command display about the system hardware? (Choose three.)

A. System battery type

B. Device IRQ settings

C. PCI bus speed

D. Ethernet MAC address

E. Device vendor identification

Correct Answer: BCE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 66
Given the following two symbolic links in a System V init configuration:

```
/etc/rc1.d/K01apache2
/etc/rc2.d/S02apache2
```

When are the scripts executed that are referenced by these links? (Choose two.)

A. `S02apache2` is run when runlevel 2 is entered.

B. `S02apache2` is run when runlevel 2 is left.

C. `K01apache2` is never run because `K` indicates a deactivated service.

D. Both `S02apache2` and `K01apache2` are run during a system shutdown.

E. `K01apache2` is run when runlevel 1 is entered.

Correct Answer: AC
Section: (none)
Explanation

Explanation/Reference: