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**ExamCollection**

**101-500**

**LPIC-1 Exam 101**

**Version 2.1**

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## 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 umask value ensures that new directories can be read, written and listed by their owning user, read and listed by their owning group and are not accessible at all for everyone else?

- A. 0750
- B. 0027
- C. 0036
- D. 7640
- E. 0029

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 3

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 4

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 5

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 6

FILL BLANK

Which program updates the database that is used by the `locate` command? (Specify **ONLY** the command without any path or parameters).

**Correct Answer:** `updatedb`

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 7

What does the command `mount --bind` do?

- A. It makes the contents of one directory available in another directory
- B. It mounts all available filesystems to the current directory
- C. It mounts all user mountable filesystems to the user's home directory
- D. It mounts all file systems listed in `/etc/fstab` which have the option `userbind` set
- E. It permanently mounts a regular file to a directory

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 8

Consider the following output from the command `ls -li`:

```
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 9

Consider the following directory:

```
drwxrwxr-x 2 root sales 4096 Jan 1 15:21 sales
```

Which command ensures new files created within the directory `sales` are owned by the group `sales`? (Choose two.)

- A. `chmod g+s sales`
- B. `setpol -R newgroup=sales sales`
- C. `chgrp -p sales sales`
- D. `chown --persistent *.sales sales`
- E. `chmod 2775 sales`

**Correct Answer: AE**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### QUESTION 10

In order to display all currently mounted filesystems, which of the following commands could be used? (Choose two.)

- A. `cat /proc/self/mounts`
- B. `free`
- C. `lsmounts`
- D. `mount`
- E. `cat /proc/filesystems`

**Correct Answer: AD**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### QUESTION 11

FILL BLANK

Which command displays the current disk space usage for all mounted file systems? (Specify **ONLY** the command without any path or parameters.)

**Correct Answer:** df

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 12

Which chown command changes the ownership to dave and the group to staff on a file named data.txt?

- A. chown dave/staff data.txt
- B. chown -u dave -g staff data.txt
- C. chown --user dave --group staff data.txt
- D. chown dave+staff data.txt
- E. chown dave:staff data.txt

**Correct Answer:** E

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 13

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 14

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 15**

FILL BLANK

Which file in the /proc filesystem lists parameters passed from the bootloader to the kernel? (Specify the file name only **without any path**.)

**Correct Answer:** cmdline

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 16**

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 17**

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 18**

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 19**

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 20**

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 21**

When is the content of the kernel ring buffer reset? (Choose two.)

- A. When the ring buffer is explicitly reset using the command `dmesg --clear`
- B. When the ring buffer is read using `dmesg` without any additional parameters
- C. When a configurable amount of time, 15 minutes by default, has passed
- D. When the kernel loads a previously unloaded kernel module
- E. When the system is shut down or rebooted

**Correct Answer:** AE

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 22**

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 23

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 24

What is contained on the EFI System Partition?

- A. The Linux root file system
- B. The first stage boot loader
- C. The default swap space file
- D. The Linux default shell binaries
- E. The user home directories

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 25

Which of the following directories on a 64 bit Linux system typically contain shared libraries? (Choose two.)

- A. `~/lib64/`
- B. `/usr/lib64/`
- C. `/var/lib64/`
- D. `/lib64/`
- E. `/opt/lib64/`

**Correct Answer:** BD

**Section:** (none)

**Explanation**

**Explanation/Reference:**



**QUESTION 26**

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 27**

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 28**

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 29**

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 30

Which of the following partition types is used for Linux swap spaces when partitioning hard disk drives?

- A. 7
- B. 82
- C. 83
- D. 8e
- E. fd

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 31

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 `yum` 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 32

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 33

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 34

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 35

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 36

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 37

Which of the following are valid stream redirection operators within Bash? (Choose two.)

- A. <
- B. #>
- C. %>
- D. >>>
- E. 2>&1

**Correct Answer:** AE

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 38

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 39

The command `dbmaint &` was used to run `dbmaint` in the background. However, `dbmaint` is terminated after logging out of the system. Which alternative `dbmaint` invocation lets `dbmaint` continue to run even when the user running the program logs out?

- A. `job -b dbmaint`
- B. `dbmaint &>/dev/pts/null`
- C. `nohup dbmaint &`
- D. `bg dbmaint`
- E. `wait dbmaint`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 40

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 41

FILL BLANK

Which program runs a command in specific intervals and refreshes the display of the program's output? (Specify **ONLY** the command without any path or parameters.)

**Correct Answer:** watch

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 42

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 43

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 44**

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 45**

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 46**

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 47**

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 48

What output will be displayed when the user `fred` executes the following command?

```
echo `fred $USER`
```

- A. `fred fred`
- B. `fred /home/fred/`
- C. ``fred $USER``
- D. `fred $USER`
- E. ``fred fred``

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 49

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 50

When redirecting the output of `find` to the `xargs` command, what option to `find` is useful if the filenames contain spaces?

- A. `-rep-space`
- B. `-prntnul`
- C. `-nospace`
- D. `-ignore-space`

E. `-print0`

**Correct Answer:** E

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 51

Which of the following commands can be used to determine how long the system has been running?  
(Choose two.)

- A. `uptime`
- B. `up`
- C. `time --up`
- D. `uname -u`
- E. `top`

**Correct Answer:** AE

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 52

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 53

Which of the following files, located in a user's home directory, contains the Bash history?

- A. `.bashrc_history`
- B. `.bash_histfile`
- C. `.history`
- D. `.bash_history`
- E. `.history_bash`

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**



**QUESTION 54**

Which wildcards will match the following filenames? (Choose two.)

ttyS0

ttyS1

ttyS2

- A. ttyS[1-5]
- B. tty?[0-5]
- C. tty\*2
- D. tty[A-Z][012]
- E. tty[Ss][02]

**Correct Answer:** BD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 55**

Which of the following commands redirects the output of `ls` to standard error?

- A. `ls >-1`
- B. `ls <<ERR`
- C. `ls >&2`
- D. `ls >>2`
- E. `ls |error`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 56**

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 57**

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 58

Which of the following regular expressions represents a single upper-case letter?

- A. `:UPPER:`
- B. `[A-Z]`
- C. `!a-z`
- D. `%C`
- E. `{AZ}`

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 59

FILL BLANK

Which command is used to start another command with a given nice level? (Specify **ONLY** the command without any path or parameters.)

**Correct Answer:** nice

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 60

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 61

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 62

A yum repository can declare sets of related packages. Which `yum` command installs all packages belonging to the group `admintools`?

- A. `yum pkgset --install admintools`
- B. `yum install admintools/*`
- C. `yum groupinstall admintools`
- D. `yum taskinstall admintools`
- E. `yum collection install admintools`

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 63

FILL BLANK

What directory contains configuration files for additional yum repositories? (Specify the **full path** to the directory.)

**Correct Answer:** `/etc/yum.conf`

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 64

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 65**

Which of the following files are found in the `/boot/` file system? (Choose two.)

- A. Linux kernel images
- B. Bash shell binaries
- C. systemd target and service units
- D. Initial ramdisk images
- E. fsck binaries

**Correct Answer:** AC

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 66**

Which file defines the network locations from where the Debian package manager downloads software packages?

- A. `/etc/dpkg/dpkg.cfg`
- B. `/etc/apt/apt.conf.d`
- C. `/etc/apt/apt.conf`
- D. `/etc/dpkg/dselect.cfg`
- E. `/etc/apt/sources.list`

**Correct Answer:** E

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 67**

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 68**

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 69

The installation of a local Debian package failed due to unsatisfied dependencies. Which of the following commands installs missing dependencies and completes the interrupted package installation?

- A. `dpkg --fix --all`
- B. `apt-get autoinstall`
- C. `dpkg-reconfigure --all`
- D. `apt-get all`
- E. `apt-get install -f`

**Correct Answer:** E

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 70

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 71

Which of the following commands are valid in the GRUB 2 configuration file? (Choose two.)

- A. `menuentry`
- B. `uefi`
- C. `pxe-efi`
- D. `insmod`
- E. `kpartx`

**Correct Answer:** AD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 72**

What is the purpose of the `ldd` command?

- A. It lists which shared libraries a binary needs to run.
- B. It installs and updates installed shared libraries.
- C. It turns a dynamically linked binary into a static binary.
- D. It defines which version of a library should be used by default.
- E. It runs a binary with an alternate library search path.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 73**

What can the Logical Volume Manager (LVM) be used for? (Choose three.)

- A. To create snapshots.
- B. To dynamically change the size of logical volumes.
- C. To dynamically create or delete logical volumes.
- D. To create RAID 9 arrays.
- E. To encrypt logical volumes.

**Correct Answer:** ABC

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 74**

What are the main differences between GPT and MBR partition tables regarding maximum number and size of partitions? (Choose two.)

- A. MBR can handle partition sizes up to 4 TB, whereas GPT supports partition sizes up to 128 ZB.
- B. By default, GPT can manage up to 128 partitions while MBR only supports four primary partitions.
- C. By default, GPT can manage up to 64 partitions while MBR only supports 16 primary partitions.
- D. MBR can handle partition sizes up to 2.2 TB, whereas GPT supports sizes up to 9.4 ZB.
- E. Both GPT and MBR support up to four primary partitions, each with up to 4096 TB.

**Correct Answer:** BD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 75**

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 unchanged 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 76

FILL BLANK

Which file from the `/proc/` file system contains a list of all currently mounted devices? (Specify the full name of the file, **including path**.)

**Correct Answer:** `/proc/mounts`

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 77

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 78

Running `chmod 640 filea.txt` as a regular user doesn't update `filea.txt`'s permission. What might be a reason why `chmod` cannot modify the permissions? (Choose two.)

- A. `filea.txt` is owned by another user and a regular user cannot change the permissions of another user's file.
- B. `filea.txt` is a symbolic link whose permissions are a fixed value which cannot be changed.
- C. `filea.txt` has the sticky bit set and a regular user cannot remove this permission.
- D. `filea.txt` is a hard link whose permissions are inherited from the target and cannot be set directly.
- E. `filea.txt` has the SetUID bit set which imposes the restriction that only the `root` user can make changes to the file.

**Correct Answer:** AB

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 79**

Which of the following Linux filesystems preallocate a fixed number of inodes when creating a new filesystem instead of generating them as needed? (Choose two.)

- A. JFS
- B. ext3
- C. XFS
- D. ext2
- E. procfs

**Correct Answer:** BD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 80**

Which of the following commands sets the SetUID permission on the executable `/bin/foo`?

- A. `chmod 4755 /bin/foo`
- B. `chmod 1755 /bin/foo`
- C. `chmod u-s /bin/foo`
- D. `chmod 755+s /bin/foo`
- E. `chmod 2755 /bin/foo`

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 81**

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 82**

Which of the following settings for `umask` ensures that new files have the default permissions `-rw-r-----`?

- A. 0017
- B. 0640



- C. 0038
- D. 0227
- E. 0027

**Correct Answer:** E

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 83

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 84

Which of the following properties of an existing file changes when a hard link pointing to that file is created?

- A. File size
- B. Link count
- C. Modify timestamp
- D. Inode number
- E. Permissions

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 85

FILL BLANK

Following the Filesystem Hierarchy Standard (FHS), where should binaries that have been compiled by the system administrator be placed in order to be made available to all users on the system? (Specify the full path to the directory.)

**Correct Answer:** `/usr/local/bin/`

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 86

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 87

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 88

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 89

Which of the following commands creates or, in case it already exists, overwrites a file called `data` with the output of `ls`?

- A. `ls 3> data`
- B. `ls >& data`
- C. `ls > data`
- D. `ls >> data`
- E. `ls >>> data`

**Correct Answer:** C

**Section:** (none)

## Explanation

### Explanation/Reference:

#### QUESTION 90

Which of the following commands is used to change options and positional parameters within a running Bash shell?

- A. `history`
- B. `setsh`
- C. `bashconf`
- D. `set`
- E. `envsetup`

**Correct Answer:** D

**Section:** (none)

## Explanation

### Explanation/Reference:

#### QUESTION 91

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 92

Which of the following sequences in the vi editor saves the opened document and exits the editor? (Choose two.)

- A. `Ctrl XX`
- B. `Ctrl :W`
- C. `Esc zz`
- D. `Esc :wq`
- E. `Esc ZZ`

**Correct Answer:** DE

**Section:** (none)

## Explanation

### Explanation/Reference:

#### QUESTION 93

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 94

Which of the following tools can show the complete path of an executable file that the current shell would execute when starting a command without specifying its complete path? (Choose two.)

- A. find
- B. pwd
- C. which
- D. locate
- E. type

**Correct Answer:** CE

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 95

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

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 96

What is the output when the regular expression `s/[ABC] [abc]/xx/` is applied to the following string?  
ABCabc

- A. ABxxbc
- B. xxCxxc
- C. xxxxxx
- D. ABCabc
- E. Axxaxx

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 97**

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

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 98**

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 99**

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 100**

A user accidentally created the subdirectory `\dir` in his home directory. Which of the following commands will remove 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 101**

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 102**

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 103**

Which of the following commands determines a file's format by using a definition database file which contains information about all common file types?

- A. `type`
- B. `file`

- C. `magic`
- D. `pmagic`
- E. `hash`

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 104

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 105

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

- A. Only `a.txt`, `b.txt`, and `texts.tar.gz`
- B. Only `texts.tar` and `texts.tar.gz`
- 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 106

In the vi editor, how can commands such as moving the cursor or copying lines into the buffer be issued multiple times or applied to multiple rows?

- A. By using the command `:repeat` followed by the number and the command
- B. By specifying the number right in front of a command such as `4l` or `2yj`.
- C. By selecting all affected lines using the shift and cursor keys before applying the command.
- D. By issuing a command such as `:set repetition=4` with repeats every subsequent command 4 times.
- E. By specifying the number after a command such as `14` or `yj2` followed by escape.

**Correct Answer:** B

**Section:** (none)

## Explanation

## Explanation/Reference:

### QUESTION 107

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 108

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 109

What is the purpose of the `xargs` command?

- A. It passes arguments to an X server.
- B. It repeats the execution of a command using different parameters for each invocation.
- C. It reads standard input and builds up commands to execute.
- D. It asks a question, graphically, and returns the answer to the shell.
- E. It allows specifying long options (like `--help`) for commands that normally only accept short options (like `-h`)

**Correct Answer:** C

**Section:** (none)

## Explanation

## Explanation/Reference:

### QUESTION 110

FILL BLANK

Which command displays a list of all background tasks running in the current shell? (Specify **ONLY** the



command without any path or parameters.)

**Correct Answer:** jobs

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 111

FILL BLANK

Which command is used to change the priority of an already running process? (Specify **ONLY** the command without any path or parameters.)

**Correct Answer:** renice

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 112

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 113

When booting from the hard disk, a computer successfully loads the Linux kernel and initramfs but hangs during the subsequent startup tasks. The system is booted using a Linux based rescue CD to investigate the problem. Which of the following methods helps to identify the root cause of the problem?

- A. Using the `dmesg` command from the rescue CD's shell to view the original system's boot logs.
- B. Investigating the file `/proc/kmsg` on the computer's hard disk for possible errors.
- C. Investigating the file `/var/log` on the computer's hard disk for possible errors.
- D. Using `chroot` to switch to the file system on the hard disk and use `dmesg` to view the logs.
- E. Rebooting again from the hard drive since the system successfully booted from the rescue CD.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 114

Where is the bootloader stored on the hard disk of a UEFI system?

- A. In the EFI Boot Record (EBR).

- B. In the Master Boot Record (MBR).
- C. On the EFI System Partition (ESP).
- D. On the partition labeled `boot`.
- E. On the partition number 127.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 115

What is the correct way to set the default systemd boot target to `multi-user`?

- A. `systemctl isolate multi-user.target`
- B. `systemctl set-runlevel multi-user.target`
- C. `systemctl set-boot multi-user.target`
- D. `systemctl set-default multi-user.target`
- E. `systemctl boot -p multi-user.target`

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 116

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 117

Which of the following commands loads a kernel module along with any required dependency modules?

- A. `depmod`
- B. `modprobe`
- C. `module_install`
- D. `insmod`
- E. `loadmod`

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 118**

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 119**

FILL BLANK

Which System V init configuration file is commonly used to set the default run level? (Specify the full name of the file, **including path**.)

**Correct Answer:** `/etc/inittab`

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 120**

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:**