LPI 117-101

LPI 101 General Linux, Part I

Q&A with explanations

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Topic 1, (101) Hardware & Architecture (55 Questions)

Section 1, (1.101.1) Configure Fundamental BIOS Settings (8 Questions)

Description: Candidates should be able to configure fundamental system hardware by making the correct settings in the system BIOS. This objective includes a proper understanding of BIOS configuration issues such as the use of LBA on IDE hard disks larger than 1024 cylinders, enabling or disabling integrated peripherals, as well as configuring systems with (or without) external peripherals such as keyboards. It also includes the correct setting for IRQ, DMA and I/O addresses for all BIOS administrated ports and settings for error handling.

Key files, terms, and utilitiesinclude:

/proc/ioports
/proc/interrupts
/proc/dma
/proc/pci

QUESTION NO: 1 CORRECT TEXT

Which file holds information about the IRQ channels in use:

Answer: /proc/interrupts

Explanation: /proc/interrupts holds IRQ channels. /proc/ioports holds I/O memory addresses.

/proc/dma holds DMA channels.

QUESTION NO: 2 CORRECT TEXT

Which file holds information about the I/O addresses in use:

Answer: /proc/ioports

Explanation: /proc/interrupts holds IRQ channels. /proc/ioports holds I/O memory addresses.

/proc/dma holds DMA channels.

QUESTION NO: 3 CORRECT TEXT
What is the IO Address of the second serial port
-

Answer: 02f8
Answer: 02F8
Answer: 02F8h
Answer: 02f8h
Answer: 2f8
Answer: 2F8
Answer: 2f8h
Answer: 2F8h

QUESTION NO: 4
COM2 normally uses what I/O port and IRQ combination?

A. 03F8 4
B. 02F8 3
C. 03E8 4
D. 02E8 3

Answer: B
Explanation: COM 1 uses an IRQ of 4 and a memory address of 03F8. COM 2 is assigned to IRQ 3 and a memory address of 02F8.

QUESTION NO: 5CORRECT TEXT
What is the IRQ of COM2?

Answer: 3
Explanation: COM 1 uses an IRQ of 4 and a memory address of 03F8. COM 2 is assigned to IRQ 3 and a memory address of 02F8.

QUESTION NO: 6
You suspect that a new ethernet card might be conflicting with another device. Which file should you check within the /proc tree to learn which IRQs are being used by which kernel drives?

Answer: /proc/interrupts

Explanation:
The Linux /proc Directory is a Virtual Filesystem provided by linux kernel. /proc contains files and directories that let system administrators and programmers access system information.
The file /proc/interrupts file contains information on interrupts and IRQs. First Ethernet card device name is eth0, second Ethernet card device name is eth1 ..., to identify that dev will conflict or not , see the contains of file. Already eth0 is appeared or not ?

Here is the output of /proc/interrupts
CPU0
0: 380893 XT-PIC timer
1: 843 XT-PIC i8042
2: 0 XT-PIC cascade
5: 0 XT-PIC uhci_hcd
8: 1 XT-PIC rtc
11: 48 XT-PIC Intel 82801AA-ICH, eth0
14: 6086 XT-PIC ide0
NMI: 0
ERR: 0

For a multi-processor machine, this _le may look slightly different:

```
CPU0 CPU1
0: 1366814704 0 XT-PIC timer
1: 128 340 IO-APIC-edge keyboard
2: 0 0 XT-PIC cascade
8: 0 1 IO-APIC-edge rtc
12: 5323 5793 IO-APIC-edge PS/2 Mouse
13: 1 0 XT-PIC fpu
16: 11184294 15940594 IO-APIC-level Intel EtherExpress Pro
10/100 Ethernet
20: 8450043 11120093 IO-APIC-level megaraid
30: 10432 10722 IO-APIC-level aic7xxx
31: 23 22 IO-APIC-level aic7xxx
NMI: 0
```

```
ERR: 0
```

Appeared Number of CPU, Number of Ethernet card.

QUESTION NO: 7
The command cat /proc/dma will show you what?

A. Whether DMA is enabled
B. Which DMA channels are in use
C. Which DMA mode is in use
D. General information about DMA on the machine

Answer: A
Explanation:
/proc/dma

This file contains a list of the registered ISA direct memory access (DMA) channels in use. A sample
/proc/dma files looks like the following:

4: cascade
It shows whether DMA is enabled or not.

QUESTION NO: 8
In the BIOS, what setting should you disable so that your devices have the best chance of being recognized on boot-up?

A. AGP Fast Write
B. PnPOS
C. ACPI Support
D. Power Management/APM

Answer: C
Explanation:

ACPI (Advanced Configuration and Power Interface) is an open industry specification co-developed by Hewlett-Packard, Intel, Microsoft, Phoenix, and Toshiba. ACPI establishes industry-standard interfaces enabling OS-directed configuration, power management, and thermal management of mobile, desktop, and server platforms.

Section 2, (1.101.3) Configure Modem and Sound cards (18 Questions)

Description: Ensure devices meet compatibility requirements (particularly that the modem is NOT a win-modem), verify that both the modem and sound card are using unique and correct IRQ's, I/O, and DMA addresses, if the sound card is PnP install and run sndconfig and isapnp, configure modem for outbound dial-up, configure modem for outbound PPP | SLIP | CSLIP connection, set serial port for 115.2 Kbps

QUESTION NO: 1
To set up a connection to your ISP via your modem, what should you do (choose all that apply):

A. configure the dialer
B. configure the PPP settings
C. configure the pppd daemon
D. configure the PPTP settings

Answer: A,B,C
Explanation: As described in Debian's support document, there are actually two parts to setting up a connection to your ISP. You have to configure the dialer (the chat program), and the PPP (Point-to-Point Protocol) settings (the pppd daemon). PPP is the protocol that modems use to communicate over a serial link. (PPP is a powerful protocol that is also often used when connecting distant routers over dedicated leased lines.)

QUESTION NO: 2
The modem speed setting of _____ may be too high only if your computer doesn't have a 16550 UART chip.

A. 115200

B. 56700
C. 38400
D. 28800

Answer: A
Explanation: As described in Debian's support document, the speed setting of 115200 may be too high only if you have a 486 computer that doesn't have a 16550 UART chip. If you're using a 486 and not sure of the UART, play it safe and set the speed to 56700 instead. Exit the ee editor saving the file.

QUESTION NO: 3CORRECT TEXT
You wish to configure your soundcard. Type in the name of the Red Hat text/gui application that allows you to set/autodetect the sound card?

Answer: sndconfig
Explanation: Sndconfig is a text based tool which sets up the configuration files you'll need to use a sound card with a Red Hat Linux system. Sndconfig can be used to set the proper sound type for programs which use the /dev/dsp, /dev/audio and /dev/mixer devices. The sound settings are saved by the aumix and sysV runlevel scripts. Install sndconfig if you need to configure your sound card.

QUESTION NO: 4
For isapnp to successfully detect your sound card, your system must:

A. have a kernel with the OSS sound modules ready
B. have a sound card chip with the OSS sound modules ready
C. have the on board sound module disabled
D. None of the choices.

Answer: A
Explanation: Sndconfig uses isapnp to detect common soundcards and writes a isapnp configuration to and module control lines for use with your sound card. It requires a kernel with OSS sound modules to be present.

QUESTION NO: 5
What is used by Sndconfig to detect common soundcards (choose all that apply):

A. isapnp
B. pcipnp
C. usbpnp
D. None of the choices.

Answer: A
Explanation: Sndconfig uses isapnp to detect common soundcards and writes a isapnp configuration to and module control lines for use with your sound card. It requires a kernel with OSS sound modules to be present.

QUESTION NO: 6
What Linux utility allows you to easily configure your Sound Blaster card on Linux?

A. Sndconfig
B. SoundConf
C. Usrconf
D. Sysconf

Answer: A
Explanation: Sndconfig is a utility that lets you configure your soundcard easily. It was written originally for RedHat Linux, but now it is available for Debian GNU/Linux, too.

QUESTION NO: 7
Sndconfig was written originally for which Linux distribution?

A. RedHat
B. SuSE
C. Debian
D. Corel

Answer: A
Explanation: Sndconfig is a utility that lets you configure your soundcard easily. It was written originally for RedHat Linux, but now it is available for Debian GNU/Linux, too.

QUESTION NO: 8
Which of the following modems cannot be used on linux systems

A. ISDN TA
B. Cable modems
C. Analogue modems
D. PCI modems
E. Win modems

Answer: E
Explanation: Winmodems do not automatically work with Linux, but there is various groups on the internet that works towards making winmodems work with Linux. Linmodems.org is one worth mentioning.

QUESTION NO: 9
You have an old computer that you have set up to connect to the Internet with an external 56K modem but are unable to establish a connection of greater than 9600bps.
What is the most likely source of the problem?

A. Winnmodems are not supported in Linux.
B. The UART is not capable of handling more than 9600bps.
C. The serial port is not recognized by the kernel.
D. The modem is not configured to use the correct IRQ.

Answer: B
Explanation: With the old UART 8250, 8450 and 16450 you had a maximum speed of 9600 bps, with the new UART 16550 you could gain speeds > 38400 bps

QUESTION NO: 10CORRECT TEXT
The _____ daemon is needed to establish a PPP link to another computer?

Answer: pppd

Explanation: On Linux, PPP functionality is split into two parts: a kernel component that handles the low-level protocols (HDLC, IPCP, IPXCP, etc.) and the user space pppd daemon that handles the various higher-level protocols, such as PAP and CHAP. The current release of the PPP software for Linux contains the PPP daemon pppd and a program named chat that automates the dialing of the remote system.

QUESTION NO: 11
Which of the following is the ppp configuration file?

A. /etc/ppp/peers/provider
B. /etc/ppp/ provider
C. /etc/peers/ppp
D. /ppp/peers/provider

Answer: A
Explanation: As described in Debian's support document, /etc/ppp/peers/provider is the ppp configuration file. You edit it by typing in:
cd /etc/ppp/peers<
ee provider

QUESTION NO: 12
Your system allows only two serial ports to be active. You want to setup an internal ISA modem. Currently the serial port 1 is used by a mouse. What should you do?

A. disable the second serial port in the BIOS and set the modem up to take its place.
B. enable the second serial port in the BIOS and set the modem up without a port.
C. disable the second serial port in the BIOS and set the modem up to run as port 3.
D. None of the choices.

Answer: A
Explanation: As described in Debian's support document, newer systems will come with either one or two serial ports which are built into the motherboard. These are typically 9-pin male connectors on the back of the PC. You can simply connect an external modem to one of these. If you add an internal modem to the system it has to be set up as the next serial port (for example number 3 in a system that has two of them built in). Or, if you system BIOS allows it, you could disable the second serial port and set the modem up to take its place.

QUESTION NO: 13
Which of the following modems are not supported by Linux (choose all that apply):

A. winmodem
B. 28.8K modem
C. 33.6K modem
D. 56K modem

Answer: A
Explanation: As described in Debian's support document, make sure your modem is not a "winmodem" (a stripped-down modem that's controlled through a Windows software driver). Second, if at all possible get yourself an external modem. An external non-winmodem modem presents a lot less headaches trying to set up. Internal modems basically have three problems. They either; are winmodems, are likely going to be PCI bus modems (which present driver issues), or they have to be set up via software - software which is usually only available for Windows.

QUESTION NO: 14CORRECT TEXT
What command should you use to find out the version of the pppd daemon you're using (fill in the blank):

Answer: pppd -v

Explanation: PPP is the protocol used for establishing internet links over dial-up Modems, DSL connections, and many other types of point-to-point links. The pppd daemon works together with the kernel PPP driver to establish and maintain a PPP link with another system (called the peer) and to negotiate Internet Protocol (IP) addresses for each end of the link. Pppd can also authenticate the peer and/or supply authentication information to the peer. PPP can be used with other network protocols besides IP, but such use is becoming increasingly rare.

QUESTION NO: 15CORRECT TEXT
What is the name of the point to point protocol daemon that is used when connecting with a modem?

Answer: pppd

Explanation: On Linux, PPP functionality is split into two parts: a kernel component that handles the low-level protocols (HDLC, IPCP, IPXCP, etc.) and the user space pppd daemon that handles the various higher-level protocols, such as PAP and CHAP. The current release of the PPP software for Linux contains the PPP daemon pppd and a program named chat that automates the dialing of the remote system.

QUESTION NO: 16
What program is needed to establish a PPP link to another computer?

A. pppd
B. wvdial
C. papd
D. kppp

Answer: B
Explanation: wvdial - PPP dialer with built-in intelligence. wvdial is an intelligent PPP dialer, which means that it dials a modem and starts PPP in order to connect to the Internet. It is something like the chat(8) program, except that it uses heuristics to guess how to dial and log into your server rather than forcing you to write a login script.

QUESTION NO: 17
A typical I/O address for a sound card is:

A. IRQ 7
B. 0x220
C. 27210
D. COM2
E. 0xd800

Answer: B
Exlpanation: Only B and E is hexadecimal I/O addresses and of these two the 0x220 is normally used by a soundcard.

QUESTION NO: 18
You need to install a fax server. Which type of fax/modem should you install to ensure Linux compatibility?

A. External Serial Fax/modem
B. External USB Fax/modem
C. Internal ISA Fax/modem
D. Internal PCI Fax/modem

Answer: D
Explanation: An internal PCI Plug and Play Fax/modem will be the easiest to install and configure.

Section 3, (1.101.4) Setup SCSI Devices (9 Questions)

Description: Candidates should be able to configure SCSI devices using the SCSI BIOS as well as the necessary Linux tools. They also should be able to differentiate between the various types of SCSI. This objective includes manipulating the SCSI BIOS to detect used and available SCSI IDs and setting the correct ID number for different devices especially the boot device. It also includes managing the settings in the computer's BIOS to determine the desired boot sequence if both SCSI and IDE drives are used.

Key files, terms, and utilitiesinclude:
SCSI ID
/proc/scsi/
scsi_info

QUESTION NO: 1
How many devices excluding the controller can be on an 8 bit SCSI card?

A. 6
B. 8
C. 9
D. 16
E. 7

Answer: E
Exlpanation:

Terms	Bus Speed (MB/sec)	Bus Width (Bits)	Max Cable Length (Meters)			Devices supported
			SE 2	HVD 3	LVD 4	
SCSI-1	5	8	6	25	-	8
SCSI-2	10	8	6	25	-	8

The controller is counted as one device.

QUESTION NO: 2
How many devices can be installed on a 16 bit SCSI excluding the controller?

A. 8
B. 10
C. 12
D. 16
E. 15

Answer: E
Explanation:

Terms	Bus Speed (MB/sec)	Bus Width (Bits)	Max Cable Length (Meters)			Devices supported
			SE 2	HVD 3	LVD 4	
SCSI-3	20	16	6	25	-	16
SCSI-3 UW	40	16	-	25	-	16

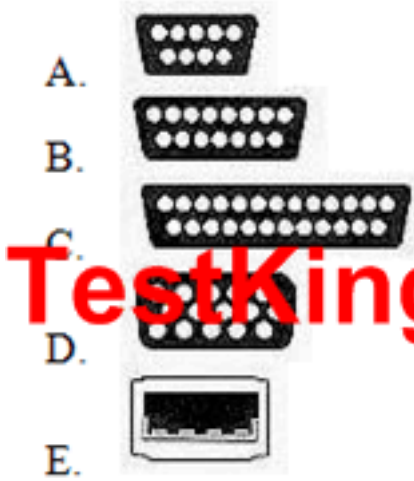
The controller is counted as one device.

QUESTION NO: 3
You have a SCSI system with five SCSI hard disks. You add another SCSI har disk to your system and the system no longer boot, nor is the bootloader loaded.
What is the most likely cause of this problem?

A. There are too many devices on the chain.
B. The boot disk needs a different SCSI ID,
C. The new disk is conflicting with the SCSI adapter.
D. The new SCSI drive is conflicting with the IDE boot drive.
E. The new SCSI drive needs a different SCSI ID.

Answer: E
Explanation: Probably there is a scsi id conflict caused by the new drive having the same scsi id as an existing drive already had. Change the SCSI ID on the new drive to solve the problem.

QUESTION NO: 4
Exhibit:



Which of the following most likely represents a SCSI connector?

A. A
B. B
C. C
D. D
E. E

Answer: C
Explanation: A is a 9-pin serial connector, B is a 25-pin serial connector, D is a VGA connector and E looks to be an USB connector.

QUESTION NO: 5
Which of the following opens the specified SCSI device file and retrieves its actual SCSI address parameters?

A. Scsi_info
B. Scsi_dev
C. Scsiinfo
D. Scsi_conf

Answer: A
Explanation: Scsi_info opens the specified SCSI device file, and retrieves its actual SCSI address parameters. It also looks up the device in /proc/scsi/scsi and retrieves the device's vendor information, if available. Its output is a pair of Bourne-style shell commands to define the SCSI_ID and MODEL variables based on this information. The SCSI_ID variable has three comma-separated fields: the SCSI channel number, the device ID, and the logical unit number. In most cases, the channel and logical unit will be 0.

QUESTION NO: 6
Scsi_info looks up the device in which file?

A. /proc/scsi/scsi
B. /proc/scsi/scsi_info
C. /proc/scsi_info/scsi
D. /scsi/scsi

Answer: A
Explanation: Scsi_info opens the specified SCSI device file, and retrieves its actual SCSI address parameters. It also looks up the device in /proc/scsi/scsi and retrieves the device's vendor information, if available. Its output is a pair of Bourne-style shell commands to define the SCSI_ID and MODEL variables based on this information. The SCSI_ID variable has three comma-separated fields: the SCSI channel number, the device ID, and the logical unit number. In most cases, the channel and logical unit will be 0.

QUESTION NO: 7
How many SCSI ids for peripherals can SCSI-1 support?

A. 5
B. 6
C. 7
D. 8

Answer: C
Explanation:

SCSI-1 support total 7 peripherals. There are several different types of SCSI devices. The original SCSI specification is commonly referred to as SCSI-1. The newer specification, SCSI-2, offers increased speed and performance, as well as new commands. Fast SCSI increases throughput to more than 10MB per second. Fast-Wide SCSI provides a wider data path and throughput of up to 40MB per second and up to 15 devices. There there are Ultra-SCSI and Ultra-Wide-SCSI

QUESTION NO: 8
If Linux detects an ACPI BIOS on bootup, what does it automatically deactivate?

A. PnP
B. PCI
C. ATA
D. APM

Answer: D
Explanation: The advanced power management (APM) daemon and works in conjunction with the APM BIOS driver in the kernel. It can execute a command when certain events are reported by the driver. PnP (Plug and Play) has nothing to do with ACPI and neither does PCI (Peripheral Component Interconnect). ATA is an ansi-standard for connecting harddrives to computers (changed to PATA in 2003 to distinguish from SATA)

QUESTION NO: 9
You run out of space and added an eighth disk to your SCSI-1 system. When you try to start, the system no longer boots. What is most likely the cause of this problem?

A. SCSI-1 supports only 8 devices including the adaptor.
B. SCSI-1 supports only 6 disks per adaptor.
C. There is a SCSI-ID conflict that causes that problem.
D. You forgot to set the SCSI-ID #8 for the new disk.

Answer: A
Explanation:

Terms	Bus Speed (MB/sec)	Bus Width (Bits)	Max Cable Length (Meters)			Devices supported
			SE 2	HVD 3	LVD 4	
SCSI-1	5	8	6	25	-	8
SCSI-2	10	8	6	25	-	8

The controller is counted as one device.

Section 4, (1.101.5) Setup different PC expansion cards (9 Questions)

Description: Candidates should be able to configure various cards for the various expansion slots. They should know the differences between ISA and PCI cards with respect to configuration issues. This objective includes the correct settings of IRQs, DMAs and I/O Ports of the cards, especially to avoid conflicts between devices. It also includes using isapnp if the card is an ISA PnP device.

Key files, terms, and utilitiesinclude:

/proc/dma
/proc/interrupts
/proc/ioports
/proc/pci
pnpdump(8)
isapnp(8)
lspci(8)

QUESTION NO: 1

Which of the following commands may be used to view PCI devices seen by the Linux kernel? (Choose two)

A. less lspci
B. less /dev/pci
C. less /proc/pci
D. less /proc/devices/pci
E. lspci | less

Answer: C, E

Explanation:
lspci is a utility for displaying information about all PCI buses in the system and all devices connected to them.

QUESTION NO: 2
The lspci command can display information about devices except the following:

A. Card bus speed (e.g. 66Mhz)
B. Card IRQ settings
C. Card vendor identification
D. Card AGP rate (e.g. 1x, 2x, 4x)
E. Card Ethernet MAC address

Answer: E
Explanation:
lspci is a utility for displaying information about all PCI buses in the system and all devices connected to them. To display the MAC address of Ethernet, we use the ifconfig command.

QUESTION NO: 3CORRECT TEXT
What is the device file and full path for the LPT1 port?

Answer: /dev/lp0

Explanation: LPT1 port usually used to connect the printer having parallel port and the device name is /dev/lp0. If you have printer with USB port then device name will be /dev/usb/lp0.

QUESTION NO: 4
Which IRQ is normally dedicated to the second printer port on a PC?

A. LPT1
B. LPT2
C. IRQ5
D. IRQ11
E. DMA 330

Answer: C
Explanation:
IRQ 0 - System timer. Reserved for the system. Cannot be changed by a user.
IRQ 1 - Keyboard. Reserved for the system. Cannot be altered even if no keyboard is present or needed.
IRQ 2 - Cascaded to 9
IRQ 3 - COM 2(Default) COM 4(User)
IRQ 4 - COM 1(Default) COM 3(User)
IRQ 5 - Sound card (Sound Blaster Pro or later) or LPT2(User)
IRQ 6 - Floppy disk controller
IRQ 7 - LPT1(Parallel port) or sound card (8-bit Sound Blaster and compatibles)
IRQ 8 - Real time clock
IRQ 9 - Cascaded to 2
IRQ 10 - Free / Open interrupt / Available / SCSI
IRQ 11 - Free / Open interrupt / Available / SCSI
IRQ 12 - PS/2 connector Mouse / If no PS/2 connector mouse is used, this can be used for other peripherals
IRQ 13 - ISA / Math Co-Processor
IRQ 14 - Primary IDE. If no Primary IDE this can be changed
IRQ 15 - Secondary IDE

QUESTION NO: 5CORRECT TEXT
Type in just the numeral of the IRQ most likely to conflict on a system that has both a sound card and second LPT port.

Answer: 5
Explanation:
IRQ 0 - System timer. Reserved for the system. Cannot be changed by a user.
IRQ 1 - Keyboard. Reserved for the system. Cannot be altered even if no keyboard is present or needed.
IRQ 2 - Cascaded to 9
IRQ 3 - COM 2(Default) COM 4(User)
IRQ 4 - COM 1(Default) COM 3(User)
IRQ 5 - Sound card (Sound Blaster Pro or later) or LPT2(User)
IRQ 6 - Floppy disk controller
IRQ 7 - LPT1(Parallel port) or sound card (8-bit Sound Blaster and compatibles)
IRQ 8 - Real time clock

IRQ 9 - Cascaded to 2
IRQ 10 - Free / Open interrupt / Available / SCSI
IRQ 11 - Free / Open interrupt / Available / SCSI
IRQ 12 - PS/2 connector Mouse / If no PS/2 connector mouse is used, this can be used for other peripherals
IRQ 13 - ISA / Math Co-Processor
IRQ 14 - Primary IDE. If no Primary IDE this can be changed
IRQ 15 - Secondary IDE

QUESTION NO: 6
The first com port on your PC is represented by:

A. /dev/ttyS0
B. /dev/ttyS1
C. /dev/ttySa
D. /dev/ttySA

Answer: A

Explanation:
Serial devices are usually called something like/dev/ttyS1 under Linux. The utility stty will allow you to interactively view or set the settings for a serial port; setserial will allow you to control a few extended attributes and configure IRQs and I/O addresses for non-standard ports..

QUESTION NO: 7 CORRECT TEXT
What is the full path and filename of the LPT2 port?

Answer: /dev/lp1
Explanation: LPT1 port usually used to connect the printer having parallel port and the device name is /dev/lp0. If you have printer with USB port then device name will be /dev/usb/lp0. Convention is like, /dev/lp0 LPT1, /dev/lp1 LPT2.

QUESTION NO: 8
What is the typical name for the first serial port, (com1)?

A. /dev/com0
B. /dev/com1
C. /dev/ttySO
D. /dev/ttyS1
E. none of the above

Answer: C
Explanation: Serial devices are usually called something like /dev/ttyS1 under Linux. The utility stty will allow you to interactively view or set the settings for a serial port; setserial will allow you to control a few extended attributes and configure IRQs and I/O addresses for non-standard ports.
Device name for first Serial Port is /dev/ttyS0.

QUESTION NO: 9 CORRECT TEXT
The _____ command displays ISA plug-and-play devices resource information.

Answer: pnpdump
Explanation: pnpdump will scan all the ISA PnP cards, dumping their resource data to stdout. The resource data is supposed to be a description of the resources (IO ports, interrupts, DMA channels) that the card would like, or needs, to use to work. It is stored in a small ROM on the card, which can be read as part of the Plug and Play configuration process.

Section 5, (1.101.6) Configure Communication Devices (9 Questions)

Description: Candidates should be able to install and configure different internal and external communication devices like modems, ISDN adapters, and DSL switches. This objective includes verification of compatibility requirements (especially important if that modem is a winmodem), necessary hardware settings for internal devices (IRQs, DMAs, I/O ports), and loading and configuring suitable device drivers. It also includes communication device and interface configuration requirements, such as the right serial port for 115.2 Kbps, and the correct modem settings for outbound PPP connection(s).
Key files, terms, and utilitiesinclude:
/proc/dma
/proc/interrupts

/proc/ioports
setserial(8)

QUESTION NO: 1
DNS provides _____ to IP address mappings.

A. NETBIOS name
B. host name
C. MAC address

Answer: B
Explanation: DNS is used to map the Hostname to IP address called forward lookup, IP to hostname called reverse lookup and allows to logically grouped the network.

QUESTION NO: 2
Which of the following Linux packages can be used for web caching?

A. qmail
B. squid
C. apache
D. samba

Answer: B
Explanation: proxy caching server. squid is a high-performance proxy caching server for web clients, sup-porting FTP, gopher, and HTTP data objects. Unlike traditional caching software, squid handles all requests in a single, non-blocking, I/O-driven process.
squid keeps meta data and especially hot objects cached in RAM, caches DNS lookups, supports non-blocking DNS lookups, and implements negative caching of failed requests. squid supports SSL, extensive access controls, and full request logging. By using the lightweight Internet Cache Protocol, squid caches can be arranged in a hierarchy or mesh for additional bandwidth savings. Squid program belongs to squid package. To install squid package. In redhat: rpm -ivh squid-version to install the squid.

QUESTION NO: 3
You just added another supported PCI Network Interface Card (NIC) to your PC, but are not able to activate it in Linux. Using tools available in Linux operating systems, you notice that the NIC is not seen by the kernel. What is most likely to be the source of the problem?

A. The NIC is not seen within /proc/pci.
B. Resource conflicts are not allowing NIC be initialized.
C. You have not made the appropriate entries to /proc/interrupts and /proc/ioports
D. You did not turn off "PnP OS" in the PC BIOS.
E. The NIC is conflicting with the video adapter.

Answer: B
Explanation: Devices such as NICs and sound cards often have IRQ conflicts. You need to ensure that the proper IRQ, memory address, and I/O port are allocated.

QUESTION NO: 4
The following are all true about the setserial command except:

A. setserial can display the IRQ of a serial port
B. setserial can configure the IRQ of a hardware device
C. setserial can configure the IRQ of a software driver
D. setserial can display the UART type of the serial device
E. setserial can "autoconfig" serial ports

Answer: B
Explanation:
setserial - get/set Linux serial port information. setserial is a program designed to set and/or report the configuration information associated with a serial port. This information includes what I/O port and IRQ a particular serial port is using, and whether or not the break key should be interpreted as the Secure Attention Key, and so on.
During the normal bootup process, only COM ports 1-4 are initialized, using the default I/O ports and IRQ values, as listed below. In order to initialize any additional serial ports, or to change the COM 1-4 ports to a nonstadard configuration, the setserial program should be used. Typically it is called from an rc.serial script, which is usually run out of /etc/rc.local.

QUESTION NO: 5 CORRECT TEXT

What is the variable name that holds the terminal capabilities variable, which is usually set to vt100? Type the variable exactly as it would be used at the command line.

Answer: $TERM
Explanation: The environment variable TERM should normally contain the type name of the terminal, console or display-device type you are using. This information is critical for all screen-oriented programs, including your editor and mailer.

QUESTION NO: 6 CORRECT TEXT
Type in the device file including path for the second serial port.

Answer: /dev/ttyS1
Explanation: Serial devices are usually called something like/dev/ttyS1 under Linux. The utility stty will allow you to interactively view or set the settings for a serial port; setserial will allow you to control a few extended attributes and configure IRQs and I/O addresses for non-standard ports..
First Serial Port: /dev/ttyS0
Second Serial Port: /dev/ttyS1

QUESTION NO: 7 CORRECT TEXT
Type in the device file and full path to first serial port.

Answer: /dev/ttyS0

Explanation: Serial devices are usually called something like/dev/ttyS1 under Linux. The utility stty will allow you to interactively view or set the settings for a serial port; setserial will allow you to control a few extended attributes and configure IRQs and I/O addresses for non-standard ports..
First Serial Port: /dev/ttyS0
Second Serial Port: /dev/ttyS1

QUESTION NO: 8 CORRECT TEXT

Type in the IO address of device /dev/ttyS3

Answer: 02e8
Answer: 02e8h
Answer: 02E8h
Answer: 02E8
Answer: 2e8
Answer: 2E8

Explanation:

COM 1	3F8	4
COM 2	2F8	3
COM 3	3E8	4
COM 4	2E8	3

QUESTION NO: 9 CORRECT TEXT
The_____command allows you to view or change serial port configuration.

Answer: setserial
Explanation: setserial command helps to set or get the Linux Serial Port Information. setserial is a program designed to set and/or report the configuration information associated with a serial port. This information includes what I/O port and IRQ a particular serial port is using, and whether or not the break key should be interpreted as the Secure Attention Key, and so on.

Section 6 (1.101.7), Configure USB devices (3 Questions)

Description: Candidates should be able to activate USB support, use and configure different USB devices. This objective includes the correct selection of the USB chipset and the corresponding module. It also includes the knowledge of the basic architecture of the layer model of USB as well as the different modules used in the different layers.
Key files, terms, and utilitiesinclude:
lspci(8)

usb-uhci.o
usb-ohci.o
/etc/usbmgr/
usbmodules
/etc/hotplug
/proc/

QUESTION NO: 1
You have a USB storage device that you cannot get working. You have enabled all appropriate USB options in the latest 2.2 kernel but still cannot get your device working.
What is the most likely cause of the problem?

A. You have not configured your usb.usermap properly.
B. You are using the wrong kernel for this type of device.
C. The USB device is not USB 2.O compliant.
D. There is a USB resource conflict.

Answer: B
Explanation: You'll need a 2.4.0 or in some cases a 2.2.18 kernel for USB to work.

QUESTION NO: 2
You are running Linux 2.0.36 and you need to add a USB mouse to your system.
Which of the following statements is true?

A. You need to rebuild the kernel.
B. You need to upgrade the kernel.
C. You need to load the USB modules for your existing modular kernel.
D. USB support is no available in Linux.

Answer: B
Explanation: You'll need a 2.4.0 or in some cases a 2.2.18 kernel for USB to work.

QUESTION NO: 3
Which of the following device files would represent a USB disk?

A. /dev/sda
B. /dev/scsia
C. /dev/hda
D. /dev/sd0
E. /dev/scsi0

Answer: A

Explanation: Linux Treat the USB disk as a SCSI. So, It's device name is sda, sdb....
To use USB Disk we should mount : mount /dev/sda /mnt/usb
Similarly IDE Harddisk will represent by :
Primary Master : /dev/hda
Primary Slave : /dev/hdb
Secondary Master : /dev/hdc
Secondary Slave : /dev/hdd
Floppy Disk represent by : /dev/fd0, fd1,...

Topic 2, (102) Linux Installation & Package Management (104) Questions)

Section 1, (1.102.1) Design hard disk layout (30 Questions)

Description: Candidates should be able to design a disk partitioning scheme for a Linux system. This objective includes allocating filesystems or swap space to separate partitions or disks, and tailoring the design to the intended use of the system. It also includes placing /boot on a partition that conforms with the BIOS' requirements for booting.
Key files, terms, and utilitiesinclude:
/ (root) filesystem
/var filesystem
/home filesystem
swap space
mount points
partitions
cylinder 1024

QUESTION NO: 1CORRECT TEXT
The _____ partition is used for virtual memory.

Answer: swap
Explanation: Swap space in Linux is used when the amount of physical memory (RAM) is full. If the system needsmore 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. Swap space can be a dedicated swap partition (recommended), a swap file, or a combination of swap partitions and swap files. The size of your swap should be equal to twice your computer's physical RAM for up to 2 GB of physical RAM. For physical RAM above 2 GB, the size of your swap should be equal to the amount of physical RAM above 2 GB. The size of your swap should never less than 32 MB. Using this basic formula, a system with 2 GB of physical RAM would have 4 GB of swap, while one with 3 GB of physical RAM would have 5 GB of swap.

QUESTION NO: 2 CORRECT TEXT
Type in the variable name that controls the size of the command line history. (Type the variable as it would be used on the command line.)

Answer: $HISTSIZE

Explanation:There are two types of variable, Shell and environmental variables. Shell Variables are available on particular shell, whether environmental variables available on all shells.
HISTSIZE is a environmental Variables containing the value to store number of commands on history.
You can assign different value to variable. HISTSIZE=0
Some Variable:
HISTFILE: Specifies the files in which history command are stored on logout.
HISTFILESIZE: Specifies the number of commands of history to be saved when the shell exits.
HISTSIZE: specifies the number of history commands to keep while operating interactively.

QUESTION NO: 3 CORRECT TEXT

Type in the Variable name of the variable that stores the location of the command line history file. (Type the variable as it would be used on the command line.)

Answer: $HISTFILE

Explanation: There are two types of variable, Shell and environmental variables. Shell Variables are available on particular shell, whether environmental variables available on all shells.
HISTSIZE is a environmental Variables containing the value to store number of commands on history.
You can assign different value to variable. HISTSIZE=0
Some Variable:
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HISTFILESIZE: Specifies the number of commands of history to be saved when the shell exits.
HISTSIZE: specifies the number of history commands to keep while operating interactively.

QUESTION NO: 3 CORRECT TEXT
You are building a system administration shell script and always want a particular line to read a file named testking1.txt that exists in the home directory of every user, regardless of who the user is. What would be the full path including the filename for this file, for the current user?

Answer: ~/testking1.txt
Answer: $HOME/testking1.txt

Explanation: The ~ Symbol represent the user's home directory. As well as in linux system, there is a environmental variable HOME, representing the user's home directory.
So, we can use ~ symbol or $HOME variable.

QUESTION NO: 4
Type in the file name and full path of the configuration file where you would set the variable HISTSIZE for all users of the system.

Answer: /etc/profile

Explanation: /etc/profile is the global login scripts, parsed by all users with Borune-style shells including bash and sh. Usually used to set the default path, values assign on variable, startup program execution.

Sample /etc/profile Configuration

```
# /etc/profile

# System wide environment and startup programs, for login setup
# Functions and aliases go in /etc/bashrc

pathmunge () {
 if ! echo $PATH | /bin/egrep -q "(^|:)$1($|:)" ; then
 if [ "$2" = "after" ] ; then
 PATH=$PATH:$1
 else
 PATH=$1:$PATH
 fi
 fi
}

# Path manipulation
if [ `id -u` = 0 ]; then
 pathmunge /sbin
 pathmunge /usr/sbin
 pathmunge /usr/local/sbin
fi

pathmunge /usr/X11R6/bin after
# No core files by default
ulimit -S -c 0 > /dev/null 2>&1

USER="`id -un`"
LOGNAME=$USER
MAIL="/var/spool/mail/$USER"

HOSTNAME=`/bin/hostname`
HISTSIZE=1000

if [ -z "$INPUTRC" -a ! -f "$HOME/.inputrc" ]; then
 INPUTRC=/etc/inputrc
fi
```

```
export PATH USER LOGNAME MAIL HOSTNAME HISTSIZE INPUTRC

for i in /etc/profile.d/*.sh ; do
 if [ -r "$i" ]; then
 . $i
 fi
done
unset i
unset pathmunge
```

QUESTION NO: 5
Type only the name of the file or utility that will show you the last system bootup messages.

Answer: dmesg

Explanation: dmesg command helps users to print out their bootup messages.

QUESTION NO: 6
What does the Filesystem Hierarchy Standard enable? (Select TWO answers)

A. Software to predict the location of installed files and directories
B. Software to predict the ownership and access rights of installed files and directories
C. Users to predict the location of installed files and directories.
D. Users to predict how the filesystem should be formatted according to need.

Answer: A, C
Explanation:
This standard enables:
1. Software to predict the location of installed files and directories, and
2. Users to predict the location of installed files and directories.
This is done by:
1. Specifying guiding principles for each area of the filesystem,
2. Specifying the minimum files and directories required,
3. Enumerating exceptions to the principles, and
4. Enumerating specific cases where there has been historical conflict.

QUESTION NO: 7
You have a machine which serves 100 users. You don't want to include their data in the location database. Where would you specify excluded directories for locate?

A. /etc/locate.conf
B. .locaterc
C. /etc/updatedb.conf
D. /etc/exclude_dir

Answer: D

QUESTION NO: 8
Identify the proper device for the third partition, on the second hard disk, on the first IDE controller on a PC system.

A. /dev/hdb3
B. /dev/hd1b3
C. /dev/hdc1b3
D. /dev/hdc1d2p3

Answer: A

Explanation:
Harddisk Recognization
Primary Master /dev/hda
Primary Slave /dev/hdb
Secondary Master /dev/hdc
Secondary Slave /dev/hdd
According To question, Device name is /dev/hdb and paratition number is 3.
/dev/hdb3

QUESTION NO: 9

You want to limit the amount of disk space ordinary users can have to 5 MB per user in /var/spool/mail and 10MB per user in /home, using quota. What steps do you need to take when partitioning the hard drive?

A. Make a partition for /var/spool/mail and another one for /home.
B. Use qfdisk instead of fdisk to create the partitions and activate quotas.
C. No special steps are required. /var/spool/mail and /home can be a part of the / partition.
D. Make one partition for both /home, then later on add a symlink for /var/spool/mail that points to that partition.
E. Use fdisk to make partitions for /var/spool/mail and /home, then use the "u" option to turn on per-user quotas

Answer: A
Explanation: You must use different partitions to do that.

QUESTION NO: 10
You have just upgraded your PC to a 60 gigabyte IDE drive. While partitioning the drive, you notice that only 32 gigabytes are available. Which of the following will most likely allow you to use the entire drive?

A. Create two smaller partitions of 30 gigabytes each.
B. Set the PC BIOS to use LBA mode.
C. Create a partition that resides entirely below the first 1024 cylinders.
D. Use GRUB or the latest version of LILO as a bootloader.
E. Upgrade the PC BIOS to the latest version available.

Answer: E
Explanation: Not being able to use new, big harddrives is usually connected to the BIOS in the computer.

QUESTION NO: 11
On an ext2 partition, what portion is reserved for the root user?

A. 100 cylinders
B. No less than 500 blocks
C. None

D. 5%
E. 1/32nd of the total space

Answer: D

Explanation: Specify the percentage of the filesystem blocks reserved for the super-user. This value defaults to 5%. If you want to change the percentage for super user:

mke2fs -m percentage partition

QUESTION NO: 12
You have a Linux system with a 100GB ext2 partition containing large amounts of data. To minimize the boot time, you decide to convert it to a journaling filesystem. Which journaling file system would be easiest to convert the partition to (without destroying existing data)?

A. resiserfs
B. vfat
C. ext3
D. xfs

Answer: C
Explanation:
What are the advantages of ext3?Why do you want to migrate from ext2 to ext3? Four main reasons: availability, data integrity, speed, and easy transition.
Availability
After an unclean system shutdown (unexpected power failure, system crash), each ext2 file system cannot be mounted until its consistency has been checked by the e2fsck program. The amount of time that the e2fsck program takes is determined primarily by the size of the file system, and for today's relatively large (many tens of gigabytes) file systems, this takes a long time. Also, the more files you have on the file system, the longer the consistency check takes. File systems that are several hundreds of gigabytes in size may take an hour or more to check. This severely limits availability.

By contrast, ext3 does not require a file system check, even after an unclean system shutdown, except for certain rare hardware failure cases (e.g. hard drive failures). This is because the data is written to disk in such a way that the file system is always consistent. The time to recover an ext3 file system after an unclean system shutdown does not depend on the size of the file system or the number of files; rather, it depends on the size of the "journal" used to maintain consistency. The default journal size takes about a second to recover (depending on the speed of the hardware).

Data Integrity

Using the ext3 file system can provide stronger guarantees about data integrity in case of an unclean system shutdown. You choose the type and level of protection that your data receives. You can choose to keep the file system consistent, but allow for damage to data on the file system in the case of unclean system shutdown; this can give a modest speed up under some but not all circumstances. Alternatively, you can choose to ensure that the data is consistent with the state of the file system; this means that you will never see garbage data in recently-written files after a crash. The safe choice, keeping the data consistent with the state of the file system, is the default.

Speed

Despite writing some data more than once, ext3 is often faster (higher throughput) than ext2 because ext3's journaling optimizes hard drive head motion. You can choose from three journaling modes to optimize speed, optionally choosing to trade off some data integrity.

1. One mode, data=writeback, limits the data integrity guarantees, allowing old data to show up in files after a crash, for a potential increase in speed under some circumstances. (This mode, which is the default journaling mode for most journaling file systems, essentially provides the more limited data integrity guarantees of the ext2 file system and merely avoids the long file system check at boot time.)
2. The second mode, data=ordered (the default mode), guarantees that the data is consistent with the file system; recently-written files will never show up with garbage contents after a crash.
3. The last mode, data=journal, requires a larger journal for reasonable speed in most cases and therefore takes longer to recover in case of unclean shutdown, but is sometimes faster for certain database operations.

The default mode is recommended for general-purpose computing needs. To change the mode, add the data=something option to the mount options for that file system in the /etc/fstab file, as documented in the mount man page (man mount).

Easy Transition

It is easy to change from ext2 to ext3 and gain the benefits of a robust journaling file system, without reformatting. That's right, there is no need to do a long, tedious, and error-prone backup-reformat-restore operation in order to experience the advantages of ext3. There are two ways to perform the transition:

1. The Red Hat Linux installation program offers to transition your file systems when you upgrade your system. All you have to do is select one checkbox per file system.

2. The tune2fs program can add a journal to an existing ext2 file system. If the file system is already mounted while it is being transitioned, the journal will be visible as the file .journal in the root directory of the file system. If the file system is not mounted, the journal will be hidden and will not appear in the file system. Just run tune2fs -j /dev/hda1 (or whatever device holds the file system you are transitioning) and change ext2 to ext3 on the matching lines in /etc/fstab. If you are transitioning your root file system, you will have to use an initrd to boot. Run the mkinitrd program as described in the manual and make sure that your LILO or GRUB configuration loads the initrd. (If you fail to make that change, the system will still boot, but the root file system will be mounted as ext2 instead of ext3 - you can tell this by looking at the output of the command cat /proc/mounts.) More information on tune2fs can be found in the tune2fs man page (man tune2fs).

QUESTION NO: 13
Tamika is planning the partition table for her new workstation. Assuming she will give each of the following directories its own partition, which partition should be the largest?

A. /usr
B. /lib
C. /root
D. /bin

Answer: A

Explanation:
When we install, most of the user's commands, administrative commands and applications are installed on /usr by creating sub directories ie /usr/bin, /usr/sbin. So we required more space then other partitions.

QUESTION NO: 14
You have run out of disk space on a partition. Which of the following would be an easy way to move data to a new partition without reconfiguring the path to the data in existing applications?

A. Run ext2fs ACL.
B. Use a hard link.
C. Use a symbolic link.

D. Use the loopback device.
E. Create a block device offset.

Answer: C
Explanation: A Symbolic link points to another file and the contents of link file is referenced file. So, symbolic linked file occupied the very less space the original file.

QUESTION NO: 15
To build a fresh new Linux system, how much free space should you reserve for the Linux partition?

A. 100 - 200MB
B. 200 - 300MB
C. 300 - 400MB
D. 700 - 800MB

Answer: D
Explanation: According to the technical information available at Linux From Scratch Ver 3.0, Before we can build our new Linux system, we need to have an empty Linux partition on which we can build our new system. I recommend a partition size of at least 750 MB. This gives enough space to store all the tarballs and to compile all packages without worrying about running out of the necessary temporary disk space. But you probably want more space than that if you plan to use the LFS system as your primary Linux system.

QUESTION NO: 16
Which directory is used to store undelivered user email by default?

A. /var/spool/sendmail/usermail
B. /var/spool/mail
C. /var/spool/mailqueue
D. /var/spool/sendmail/username
E. /var/mail/sendmail/username

Answer: B

Explanation: The /var/spool/mail directory contains the spooling mail. Under /var/mail/spool file with same as username are here, which contains the user's spooling mail.

QUESTION NO: 17 CORRECT TEXT
What would be the device name of the 2nd SCSI disk on your system? Include the full path to the device file

Answer: /dev/sdb
Explanation: First SCSI disk device is filename is /dev/sda and second /dev/sdb.

QUESTION NO: 18 CORRECT TEXT
What is the device file for the first logical drive in the extended partition of the Secondary Master IDE drive? Include the full path and filename.

Answer: /dev/hdc5

Explanation:
Harddisk Recognization
Primary Master /dev/hda
Primary Slave /dev/hdb
Secondary Master /dev/hdc
Secondary Slave /dev/hdd
According To question, drive is secondary master, then device name is /dev/hdc and Logical partition start from 5.
So /dev/hdc5

QUESTION NO: 19
Which of the following directories would be the least likely to need backing up? Choose Two.

A. /usr
B. /etc
C. /home
D. /tmp

E. /swap

Answer: D, E

Explanation: Backup and Restore depends on the importance of data, the /usr, /etc, /home contains the importance data then /tmp and /swap. /usr/bin, /bin contains all user commands, /usr/sbin, /sbin contains the administrative commands, /etc/ contains the configuration files. So these directory contains the important files.

QUESTION NO: 20
With a Linux 2.2 Kernel-based machine configuration of 133 MHZ, 32 MB RAM and a 1 GB HD, how much swap should be configured?

A. 512MB
B. 256MB
C. 128MB
D. 64MB
E. 32MB

Answer: D

Explanation: Swap also called the virtual memory, we should give the swap space as double of RAM size.

QUESTION NO: 21
Which of the following file system types causes the least impact when upgrading an Ext2 file system?

A. Ext3
B. ReiserFS
C. JFS
D. XFS
E. VFS

Answer: A
Explanation:

What are the advantages of ext3?
Why do you want to migrate from ext2 to ext3? Four main reasons: availability, data integrity, speed, and easy transition.
Availability
After an unclean system shutdown (unexpected power failure, system crash), each ext2 file system cannot be mounted until its consistency has been checked by the e2fsck program. The amount of time that the e2fsck program takes is determined primarily by the size of the file system, and for today's relatively large (many tens of gigabytes) file systems, this takes a long time. Also, the more files you have on the file system, the longer the consistency check takes. File systems that are several hundreds of gigabytes in size may take an hour or more to check. This severely limits availability.
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QUESTION NO: 22

According to the Filesystem Heirarchy Standard, what directory trees are considered optional on a system's root filesystem? Choose all that apply.

A. /mnt
B. /root
C. /usr
D. /var
E. /opt

Answer: C, D, E

Explanation:

Optional root filesystem means these filesystem can be separate from the root. Like /var, /usr, /opt, /home, /tmp etc filesystem can create in separate partaions but some filesystem can't separate from the / (root) filesysteme eg, /lib, /dev/, /etc/, /sbin, /bin and /.

QUESTION NO: 23
When partitioning a disk with more than 1024 cylinders, which of the following could affect the systems ability to boot?

A. Location of LILO on disk
B. Location of /boot on disk
C. Location /var on disk
D. Disk transfer rate
E. Disk seek time

Answer: B
Explanation: If size to boot partitions assigns after the 1024 cylinder then, lilo boot loader unable to load the kernel so it effects to boot partaiton. If you are using the LILO boot loader boot partitions should be within 1024 cylinder.

QUESTION NO: 24
Which of the following is a typical rule for allocating swap space for a Linux installation?

A. Use 25% of available drive space for a swap partition.
B. Use 10% of available drive space for a swap partition.
C. Use 50% of total RAM for the size of a swap partition.
D. Use 200% of total RAM for the size of a swap partition.
E. Use 128MB on each hard disk in the system for swap.

Answer: D
Explanation: The Convention for swap partition is Double of Physical RAM size.

QUESTION NO: 25

You are building a server that will undergo many hardware and operating system upgrades. The server is the file server for all users on your 100 user network. Which directory should have its own mountpoint and/or hard drive?

A. /boot
B. /sbin
C. /home
D. /etc

Answer: C
Explanation: /home is called typical user's home directory. All user's home directory will be created on /home. So, it should own mount point.

QUESTION NO: 26
You are formatting a single hard disk for a Linux install. What is the maximum number of primary partitions you can create?

A. 0
B. 1
C. 2
D. 3
E. 4
F. 5

Answer: E
Explanation: Generally in one System we can connect four Physical Harddisks. As a Primary Master, Primary Slave, Secondary Master, Secondary Slave.
In One System: Either four Primary partitions or 1 Primary or 2 Primary or 3 Primary + 1 extended and all logical partitions will be create under extended partations.
Hardisk device recognized as follows
Primary Master : /dev/hda
Primary Slave : /dev/hdb
Secondary Master : /dev/hdc
Secondary Slave : /dev/hdd

Suppose you have only single harddisk and going to install Linux, Maximum you can create 4 primary partitions. If you create four primary partitions you can't create extended partitions that mean no logical partitions can create.

QUESTION NO: 27
In GRUB's configuration file you find the line
root (hd1, 4)
What is corresponding device name on a Linux system?

A. /dev/hda4
B. /dev/hda5
C. /dev/hdb4
D. /dev/hdb5

Answer: D
Explanation:
hd0 à Primary Master hda
hd1à Primary Slave hdb
hd2 à Secondary Master hdc
hd3 àSecondary Slave hdd
Similarly partition number starts from 0 like array index in programming.

QUESTION NO: 28
When you are looking for brief information about a program in your PATH with its associated man pages, you would use ...

A. which
B. whereis
C. locate
D. where

Answer: B
Explanation:Whereis - locate the binary, source, and manual page files for a command

```
Syntax: whereis [options] command
Options:
 -b à Search only for binaries
 -m à Search only for manual section
 -s à Search only for sources.
```

QUESTION NO: 29
Select the default $PATH set by the init command

A. /bin:/sbin:/usr/local/bin:/etc:/usr/etc
B. /usr/local/bin:/usr/local/sbin:/opt/bin:/bin:/sbin
C. /usr/local/sbin:/sbin:/bin:/usr/sbin:/usr/bin
D. /bin:/usr/bin:/usr/local/bin:/sbin:/usr/sbin

Answer: C
Explanation: To display the default set path use echo $PATH command.

QUESTION NO: 30
Which TWO commands will find the path for the binary vim?

A. man vim
B. whereis vim
C. apropos vim
D. which vim

Answer: B, D
Explanation: which and whereis command displays the executable path of commands. Example: which clearàShows actually where clear is stored similarly whereis clear.

Section 2, (1.102.2) Install a boot manager (12 Questions)

Description: Candidate should be able to select, install, and configure a boot manager. This objective includes providing alternative boot locations and backup boot options (for example, using a boot floppy).
Key files, terms, and utilitiesinclude:
/etc/lilo.conf
/boot/grub/grub.conf
lilo
grub-install
MBR
superblock
first stage boot loader

QUESTION NO: 1
You want to uninstall lilo. Which of the following would you do to accomplish this?

A. lilo -u
B. remove lilo
C. uninstall lilo
D. lilo -r

Answer: A
Explanation: Using lilo command we can install the lilo boot loader on MBR. To uninstall lilo bootloader from MBR use the lilo -u command.

QUESTION NO: 2
You want to set a 30 second delay before your system boots to the default kernel. Which of the following command lines would do this?

A. lilo -t 30
B. lilo -d 30
C. lilo delay 30
D. lilo 30

Answer: B
Explanation: -d delay
If you have specified several kernels, and press Shift at boot time, the boot loader will present you with a choice of which system to boot. After a timeout period the first kernel in the list is booted. This option specifies the timeout delay in deciseconds.

Sample Configuration of /etc/lilo.conf
prompt
timeout=20
default=linux
boot=/dev/hda
map=/boot/map
install=/boot/boot.b
message=/boot/message
linear

image=/boot/vmlinuz-2.6.9-5.EL
label=linux
initrd=/boot/initrd-2.6.9-5.EL.img

read-only
append="rhgb quiet root=LABEL=/"

QUESTION NO: 3
Which lilo.conf parameter will specify the amount of time the system will wait before booting to the default image?

A. wait
B. delay
C. pause
D. default

Answer: B
Explanation: -d delay
If you have specified several kernels, and press Shift at boot time, the boot loader will present you with a choice of which system to boot. After a timeout period the first kernel in the list is booted. This option specifies the timeout delay in deciseconds.
Example: lilo -d 50

QUESTION NO: 4
What lilo option will list the name and location of available kernels?

A. -q
B. -k
C. -v
D. -l

Answer: A
Explanation:
-q List the currently mapped files. lilo maintains a file, by default /boot/map, containing the name and location of the kernel(s) to boot. This option will list the names therein.
Example: lilo -q

QUESTION NO: 5
What lilo.conf parameter is used to specify vga text mode?

A. vgatext
B. svga
C. vga
D. vtm

Answer: C
Explanation
vga=mode
This specifies the VGA text mode that should be selected when booting. The following values are recognized (case is ignored):
normal: select normal 80x25 text mode.
extended (or ext): select 80x50 text mode.
ask: stop and ask for user input (at boot time).
<number>: use the corresponding text mode. A list of available modes can be obtained by booting with vga=ask and pressing [Enter].

QUESTION NO: 6
You want to set a script to run when your Linux system reboots. What lilo option should you use?

A. -R
B. -S
C. -T
D. -L

Answer: A
Explanation:
-R command line
This option sets the default command for the boot loader the next time it executes. The boot loader will then erase this line: this is a once-only command. It is typically used in reboot scripts, just before calling shutdown -ra.

QUESTION NO: 7

You have a system that uses LILO from the Master Boot Record. You have just recompiled a new kernel. You already have a backup kernel setup to boot from LILO so you overwrite your existing kernel with new kernel image using the same name and location. When you reboot, you find the system does not boot.
What is likely to be the problem?

A. The new kernel image is above the 1024 cylinder and therefore cannot be loaded.
B. You did not update your /etc/lilo.conf file to boot the new kernel.
C. You need to boot the new kernel with a boot floppy to restore the old kernel.
D. You reboot before re-installing LILO in the Master Boot Record.

Answer: A

Explanation:
Lilo boot loader can't load the OS installed above 1024 cylinder so we can use linear option in /etc/lilo.conf file.

QUESTION NO: 8
Where can lilo place boot code?

A. The boot ROM
B. The boot RAM
C. The /boot partition
D. The MBR on a hard drive

Answer: D

Explanation:
lilo command installs the bootloader on MBR (Master Boot Record) and activated on next boot time.

QUESTION NO: 9 CORRECT TEXT
From the LILO: or Boot: prompt you wish to start the kernel named linux and set the machine at run level 1. Type the command line to do this?

Answer: linux 1
Answer: linux s
Answer: linux S

Answer: linux single

Explanation:

Standard Runlevel

0 - halt
1 or s or single or S- Single user mode
2 - Multiuser, without NFS (The same as 3, if you do not have networking)
3 - Full multiuser mode
4 - unused
5 - X11
6 - reboot (Do NOT set initdefault to this)

To boot the kernel parameter from lilo bootloader, press ctrl+x and then kernel name runlevel.
Example to boot linux system on runlevel 3: linux 3

QUESTION NO: 10
What lilo.conf parameter will cause the root file system to be mounted read only?

A. no-write
B. read
C. no-right
D. read-only

Answer: D
Explanation:
Here is the sample Configuration
prompt
timeout=20
default=linux
boot=/dev/hda
map=/boot/map
install=/boot/boot.b
message=/boot/message
linear

image=/boot/vmlinuz-2.6.9-5.EL
label=linux

initrd=/boot/initrd-2.6.9-5.EL.img
read-only à Mounts the root filesystem on read only mode
append="rhgb quiet root=LABEL=/"

QUESTION NO: 11
What lilo.conf parameter is used to specify what device should be mounted as root by default?

A. root
B. drive
C. mntroot
D. mount

Answer: A

Explanation:
Here is the sample Configuration
prompt
timeout=20
default=linux
boot=/dev/hda
map=/boot/map
install=/boot/boot.b
message=/boot/message
linear

image=/boot/vmlinuz-2.6.9-5.EL
label=linux
initrd=/boot/initrd-2.6.9-5.EL.img
read-only
append="rhgb quiet root=LABEL=/" à Here specifying the root partation

QUESTION NO: 12
While troubleshooting a boot issue you wish to know exactly what parameters are passed to the kernel from your bootloader. One way to do this is to execute cat /proc/_____

Answer: /proc/cmdline
Explanation:
The Linux /proc Directory is a Virtual Filesystem provided by linux kernel. /proc contains files and directories that let system administrators and programmers access system information.

If you misconfigured the bootloader, you can't load the Linux. We have different Boot loader like lilo, grub etc. If you try to load the Linux using misconfigured bootloader you will get kernel panic, no init found or Kernel Panic - Not Suyncing: Attempt to kill init etc Error. At this time you can boot the system by passing different parameters from the bootloader. If you are using LILO bootloader press ctrl+x, If you are using grub, press a or e and edit or pass the different parameter.

Before passing kernel parameter, you should know what to pass, the file /proc/cmdline contains the parameter can pass from bootloader.

For Grub
Contains of /proc/cmdline
ro root=LABEL=/ rhgb queit

or
`/proc/cmdline`
ro root=/dev/hda2
This file shows the parameters passed to the kernel at the time it is started.This tells us that the kernel is mounted read-only (signi_ed by (ro)) off of the second partition on the first IDE device (/dev/hda2).
For LILO
```
BOOT_IMAGE=linux ro BOOT_FILE=/boot/vmlinuz-2.6.9-5.EL rhgb quiet
root=LABEL=/1
```

Subsection 1, Run Level (10 Questions)

QUESTION NO: 1
What run level represents basic multi-user?

A. 2
B. 0
C. 1
D. 5

Answer: A

Exaplanation:
0 - halt (Do NOT set initdefault to this)
1 - Single user mode
2 - Multiuser, without NFS (The same as 3, if you do not have networking)
3 - Full multiuser mode
4 - unused
5 - X11
6 - reboot (Do NOT set initdefault to this)
Runlevel 2 is called the multi user without NFS (Not Networking services available).

QUESTION NO: 2
What command be used to find the systems previous run level?

A. runlevel
B. level
C. rlevel previous
D. show level previous

Answer: A

Explanation:
runlevel -- find the current and previous system runlevel.
Example of output

N 3 à It means currently system running on runlevel 3 and not switched to any runlevel.

QUESTION NO: 3
What run level represents multi-user?

A. 3
B. 0
C. 1
D. 5

Answer: A

Exaplanation:
0 - halt (Do NOT set initdefault to this)
1 - Single user mode
2 - Multiuser, without NFS (The same as 3, if you do not have networking)
3 - Full multiuser mode
4 - unused
5 - X11
6 - reboot (Do NOT set initdefault to this)
Runlevel 3 is called full multi user and Runelvel 5 is called X Window System

QUESTION NO: 4
Which of the following can be used to switch your system to run level 3?

A. init 3
B. rlevel 3
C. level 3
D. inittab 3

Answer: A
Explanation:
System boots in Default Runlevel defined in /etc/inittab file.
id:3:initdefault:
After booting the system we can switch from one runlevel to another by using the init runlevel command.

QUESTION NO: 5
What run level represents a system reboot?

A. 6
B. 1
C. 2
D. 5

Answer: A
Explanation:
Runlevel 6 is called reboot.
To switch runlevel 6:
init 6

QUESTION NO: 6
What run level represents a power down?

A. 5
B. 0
C. 1
D. 4

Answer: B

Explanation:
Runlevel 0 is called Halt
To switch runlevel 0:
init 0

QUESTION NO: 7
What run level represents administration mode?

A. 0
B. 1
C. 6
D. 5

Answer: B
Explanation: Single user mode is used for Troubleshooting and maintenance of System boot problem. So, s or S or single or 1 runlevel is called the administration mode.

QUESTION NO: 8
Which of the following can be used to switch your system to run level 1?

A. init 1
B. inittab 1
C. rlevel 1
D. level 1

Answer: A

Explanation:
System boots in Default Runlevel defined in /etc/inittab file.
id:3:initdefault:
After booting the system we can switch from one runlevel to another by using the init runlevel command.

QUESTION NO: 9
What command can be used to find the current run level?

A. runlevel
B. level
C. show level
D. rlevel

Answer: A
Explanation:
runlevel -- find the current and previous system runlevel.
Example of output

N 3 à It means currently system running on runlevel 3 and not switched to any runlevel.

QUESTION NO: 10
What line do you need to add to the /etc/inittab file to boot in runlevel 5?

Answer: id:5:initdefault:

Explanation: To boot the system in runlevel 5 we should specify the id:5:initdefault: in /etc/inittab file. By passing kernel arguments from boot loader we can override the specified runlevel in /etc/inittab. If default runlevel is not specified, system boots on runlevel 9(unknown runlevel).

Section 3, (1.102.3) Make and install programs from source (25 Questions)

Description: Candidates should be able to build and install an executable program from source. This objective includes being able to unpack a file of sources. Candidates should be able to make simple customizations to the Makefile, for example changing paths or adding extra include directories.
Key files, terms, and utilitiesinclude:

gunzip
gzip
bzip2
tar
configure
make

QUESTION NO: 1
Linux is a(n) _____ operating system, meaning the source code is freely available.

A. Open sourced
B. User licensed
C. Closed source
D. Open binary

Answer: A
Explanation: Open source software is that software, which is freely available to download from the Internet with source code and no restriction to modify, redistribute the software. So, Linux is the Open source OS.

QUESTION NO: 2
You have compiled a program from source successfully, but you are getting permission errors when you try to install the binaries.
What is most likely the problem?

A. Both rpm and dpkg need to be run as root.
B. You have the wrong permissions set on the /usr/bin directory.
C. The wrong prefix was used during the configuration or was not properly defined for the compile stage.
D. The binaries need to be installed into directories that need root privileges to write to them.

Answer: D
Explanation: when we install the binaries files, it creates the files, directories into the directory. To write the files or directories, there should be the write permission.

Before examine the Directory permission.
ls -ld directoryname
drwxr-xr-x

QUESTION NO: 3
Which utility would be used to verify the checksum of a downloaded archive file?

A. verify
B. chksum
C. md5sum
D. chkrpm
E. pkgchk

Answer: C
Explanation: md5sum - compute and check MD5 message digest.

QUESTION NO: 4
Which steps are necessary to compile and install a source code program? Choose the least amount possible.

A. Extract source
B. edit makefile
C. ./configure
D. make
E. make install

Answer: A, C, D, E

Explanation: Generally Source Code are in archive/compressed format, you should extract or uncompress first.
Suppose you got the file named test.tar.gz
- First uncompress using gunzip test.tar.gz
- Second Extract from archive : tar -xvf test.tar
- In the console (In Current Working Directory) type './configure' when completed check for any errors. If there are no errors you will want to type 'make'. Again check that there are no errors and then type 'make install'.
So installation Process is
i. Extract from compress/archived files

ii. Use ./configure to check errors
iii. Use make to make executables files
iv. Use make install to install the proper program on proper directories.

QUESTION NO: 5
Which command cannot normally be executed by a non-root user when compiling an application?

A. make
B. makefile
C. ./configure
D. make install

Answer: D
Explanation: make install command creates/writes the files or directory on different directory. To write or to create user required write permission to parent directory. Generally, normal users doesn't have write permission to system directory.

QUESTION NO: 6
Which of the following contains typical targets of a Makefile?

A. Prefix, exec_prefix, bindir, mandir
B. CFLAGS, CPPFLAGS, LIBS, LDFLAGS
C. PATHS, DESTDIR, MANPAGES, CONFIGFILES
D. clean, test, install, uninstall

Answer: B
Explanation: Se this example.

SHELL = @CONFIG_SHELL@CDPATH = ..SUFFIXES:@SET_MAKE@prefix = @prefix@exec_prefix = @exec_prefix@top_srcdir = @top_srcdir@srcdir = @srcdir@VPATH = $(srcdir)CC = @CC@CFLAGS = @CFLAGS@DEFS = @DEFS@CPPFLAGS = @CPPFLAGS@LINT = @LINT@x = @EXEEXT@o = .@OBJEXT@LIBS = @LIBS@INSTALL = @INSTALL@INSTALL_PROGRAM = @INSTALL_PROGRAM@INSTALL_DATA = @INSTALL_DATA@LN_S = @LN_S@MKINSTALLDIRS = @MKINSTALLDIRS@TAR = @TAR@TAR_UP = $(TAR) @TAR_UP_OPTIONS@ @TAR_PIPE_OPTIONS@TAR_DOWN = $(TAR) @TAR_DOWN_OPTIONS@ @TAR_PIPE_OPTIONS@

QUESTION NO: 7
The command for most applications to install compiled source via the Makefile is:

A. make
B. install
C. configure
D. make depend
E. make install

Answer: E
Explanation: make install command install the program on proper directory by reading the Makefile for program relationships.

QUESTION NO: 8
You are installing a program that is only available as source code. Which of the following commands would be best to add system specific configuration information such as the default installation directory?

A. ./make
B. ./install
C. ./makefile
D. ./configure

Answer: D

Explanation: . means current directory and .. means parent directory. ./ represents under the current directory. configure command is used to check the error, system specific configuration information.

QUESTION NO: 9
Which of the following is very important when installing from source code (Check TWO that apply)?

A. Read all documentation included with the source code.
B. Reboot after installing all programs.
C. Manually check to see if all dependencies are met.
D. Use rpm or dpkg go verify the installation.
E. Do not install binaries as the root user.

Answer: A, C
Explanation: Before start to installation, carefully reads all documentation of the specific source code, then check where dependencies are there ? dependencies are already installed or with there identify and install.

QUESTION NO: 10
The command for most applications to install compiled source via the Makefile is _____.

A. Makefile install
B. Make install
C. ./install
D. install makefile

Answer: B
Explanation: make install command install the program on proper directory by reading the Makefile for program relationships.

QUESTION NO: 11
Which of the following switches can be used with the tar command to find out the difference between two tar files?

A. -c
B. -v
C. -d
D. -t

Answer: C
Explanation: To find differences between archive and file system we can use -d or --diff or -compare option.
Sysntax: tar [option] archivefile1 archivefile2

QUESTION NO: 12
What operation of the make utility cannot normally be performed as a normal user?

A. mrproper
B. clean
C. dep
D. depends
E. install

Answer: E
Explanation: make install or install command creates/writes the files or directory on different directory. To write or to create user required write permission to parent directory. Generally, normal users doesn't have write permission to system directory.

QUESTION NO: 13 CORRECT TEXT
Type the simplest command with switches to unpack a compressed archive named file1.tar.gz?

Answer: tar -zxf file1.tar.gz
Answer: tar zxf file1.tar.gz
Answer: tar xzf file1.tar.gz
Answer: tar -xzf file1.tar.gz

Explanation:

Generally files will archive using tar command. To archive tar cvf tarfilename.tar source files
To extract from the tar archive file: tar xvf tarfilename.tar
In questions showing the file archived as well as compressed using gzip command.

We can archive as well as compress at one time using:
tar -czfv tarfilename.cgz
or
first create the archive file and then compress using gzip or gzip2 command.

To extract :
tar -zxf filename
or
uncompress the file : gunzip compressedfile
extract from the tar. tar xvf tarfile.

QUESTION NO: 14
You want to add files to a previously created tar file. You want to replace existing files with newer files, how can you do this?

A. Use the append command
B. Use the tar command with the -t switch
C. Use the add command
D. Use the tar command with the -u switch

Answer: D
Explanation: To append the newer or updated files only on existing tar file either use the -u or --update option on tar command
Example: tar -u tarfilename.tar sourcefile

QUESTION NO: 15
You want to add information to a previously created tar file. How would you do this?

A. Use the tar command with the -a switch
B. Use the append command
C. Use the add command
D. Use the tar command with the -r switch

Answer: D
Explanation: To append the new file at the end of existing tar file use either -r or --append option.
Example:
tar -r tarfilename.tar newfilename

QUESTION NO: 16
You want to find out what files are contained in a tar file. How would you do this?

A. Use the tar command with the -t switch
B. Use the tar command with the -r switch
C. Use the grep command
D. Use the find command

Answer: A
Explanation: To test the tar files by displaying the contents of tar file use the -t or --list option on tar command.
Example: tar -t tarfilename.tar

QUESTION NO: 17
Which of the following commands can be used to extract a tar file?

A. tar -vf
B. tar -xvf
C. tar -e
D. tar -v

Answer: B
Explanation: To extract the files from tar file: either -x or --extract or --get option.
Example: tar -xvf tarfile
Some Common Options:
càCreate a tar file
tàTest a tar file
xàExtract a tar file

vàVerbose
fàTar Filename

QUESTION NO: 18
Which of the following commands can be used to create a tar archive file in verbose mode?

A. tar -v
B. tar -cvf
C. tar -c
D. tar -vf

Answer: B
Explanation: To create a tar file with verbose mode
tar -cvf tarfilename sourcefiles
Some Common Options:
càCreate a tar file
tàTest a tar file
xàExtract a tar file
vàVerbose
fàTar Filename

QUESTION NO: 19 CORRECT TEXT
Type in the command line to upgrade a package using the apt-get command. The package name is package1.

Answer: apt-get upgrade package1

Explanation: Updating Information on Available Packages
To update information on available packages, issue the following command:
apt-get updateInstalling a PackageTo install a specified package, issue the following command:apt-get install packagewhere package specifies the name of the package to be installed.Upgrading Installed PackagesTo automatically upgrade all installed packages to the latest available version, issue the following command:apt-get upgrade package

QUESTION NO: 20 CORRECT TEXT
Type in the command to update the apt-get database with new or updated packages.

Answer: apt-get update
Explanation: Updating Information on Available Packages
To update information on available packages, issue the following command:
apt-get updateInstalling a PackageTo install a specified package, issue the following command:apt-get install packagewhere package specifies the name of the package to be installed.Upgrading Installed PackagesTo automatically upgrade all installed packages to the latest available version, issue the following command:apt-get upgrade package

QUESTION NO: 21 CORRECT TEXT
What is the location including the full path to where apt-get stores its downloaded packages?

Answer: /var/cache/apt/archives
Explanation: atp-get command stores the downloaded packages on /var/cache/atp/archives

QUESTION NO: 22
While installing an application from source code you don't see the configure script. What command can you run to compile the code?

A. make configure
B. install
C. install makefile
D. make

Answer: D
Explanation: The purpose of the make utility is to determine automatically which pieces of a large program need to be recompiled, and issue the commands to recompile them.

QUESTION NO: 23
User Joseph has successfully extracted and compiled a program from source code. Installing the binaries produces errors. What is the most likely reason?

A. The source code was complied for a different CPU.
B. The permissions set in the /usr/bin directory are wrong.
C. The binaries require root privileges to be installed.
D. The wrong prefix was used during configuration of the source code.

Answer: C
Explanation: The most likely reason would be to low privileges for the installation, although there might be a lot of other reasons. Best thing to do is to examine any logfiles realated to the installation attempt.

QUESTION NO: 24 CORRECT TEXT
You are compiling some software from source. After running ./configure with the appropriate arguments and no errors, what is the next command to run?

Answer: ./make

Explanation: The purpose of the make utility is to determine automatically which pieces of a large program need to be recompiled, and issue the commands to recompile them. example C programs, since they are most common, but you can use make with any programming language whose compiler can be run with a shell command. In fact, make is not limited to programs. You can use it to describe any task where some files must be updated automatically from others whenever the others change.

To prepare to use make, you must write a file called the makefile that describes the relationships among files in your program, and the states the commands for updating each file. In a program, typically the executable file is updated from object files, which are in turn
made by compiling source files.

QUESTION NO: 25
While installing from source code you don't see the configuration script. What command can you run to compile the code?

A. make configure
B. install
C. install makefile
D. make

Answer: D

Explanation: The purpose of the make utility is to determine automatically which pieces of a large program need to be recompiled, and issue the commands to recompile them. example C programs, since they are most common, but you can use make with any programming language whose compiler can be run with a shell command. In fact, make is not limited to programs. You can use it to describe any task where some files must be updated automatically from others whenever the others change.

To prepare to use make, you must write a file called the makefile that describes the relationships among files in your program, and the states the commands for updating each file. In a program,typically the executable file is updated from object files, which are in turn
made by compiling source files.

So, make command compile the source code.

Section 4, (1.102.4) Manage shared libraries (12 Questions)

Description: Candidates should be able to determine the shared libraries that executable programs depend on and install them when necessary. Candidates should be able to state where system libraries are kept.

Key files, terms, and utilitiesinclude:
ldd
ldconfig
/etc/ld.so.conf
LD_LIBRARY_PATH

QUESTION NO: 1
Which system administration command you can use to update ld.so.cache after the installation of new shared libraries?

A. ldconfig
B. ldd
C. libpath
D. newlibs

Answer: A

Explanation: ldconfig creates the necessary links and cache to the most recent shared libraries found in the directories specified on the command line, in the file /etc/ld.so.conf, and in the trusted directories (/lib and /usr/lib). The cache is used by the run-time linker, ld.so or ld-linux.so. ldconfig checks the header and file names of the libraries it encounters when determining which versions should have their links updated.

QUESTION NO: 2
Which utility can you call to find out what shared libraries a program is using?

A. ldd
B. ld.so
C. modprobe
D. ldconfig
E. ld-linux.so

Answer: A
Explanation: ldd command prints the shared libraries required by each program or shared library specified on the command line.
Example: ldd libdb.so.3
libc.so.6 => /lib/tls/libc.so.6 (0x00237000)
/lib/ld-linux.so.2 (0x0021e000)

QUESTION NO: 3 CORRECT TEXT
What is the full path including the filename of the configuration file that stores the locations of all library files on the system?

Answer: /etc/ld.so.conf
Explanation: ldconfig creates the necessary links and cache to the most recent shared libraries found in the directories specified on the command line, in the file /etc/ld.so.conf, and in the trusted directories (/lib and /usr/lib). The cache is used by the run-time linker, ld.so or ld-linux.so. ldconfig checks the header and file names of the libraries it encounters when determining which versions should have their links updated.
Some files:
/lib/ld.so run-time linker/loader

/etc/ld.so.conf File containing a list of colon, space, tab, newline, or comma spearated directories in which to search for libraries.
/etc/ld.so.cache File containing an ordered list of libraries found in the directories specified in /etc/ld.so.conf.

QUESTION NO: 4 CORRECT TEXT
On boot, your system shows messages that mention library file errors. What command should you type (command only) to attempt to fix the library errors?

Answer: ldconfig
Explanation: ldconfig command is used to configure dynamic linker run time bindings

QUESTION NO: 5 CORRECT TEXT
What command will display the needed libraries for the program myprog1 to run?

Answer: ldd myprog1
Explanation: ldd command prints the shared libraries required by each program or shared library specified on the command line.

QUESTION NO: 6
What file is read by the program ldconfig?

A. /lib/ld.so
B. /etc/ld.so.conf
C. /etc/ld.so.cache
D. /etc/modules.conf

Answer: B

Explanation:

ldconfig creates the necessary links and cache to the most recent shared libraries found in the directories specified on the command line, in the file /etc/ld.so.conf, and in the trusted directories (/lib and /usr/lib). The cache is used by the run-time linker, ld.so or ld-linux.so. ldconfig checks the header and file names of the libraries it encounters when determining which versions should have their links updated.
Some files:
/lib/ld.so run-time linker/loader
/etc/ld.so.conf File containing a list of colon, space, tab, newline, or comma spearated directories in which to search for libraries.
/etc/ld.so.cache File containing an ordered list of libraries found in the directories specified in /etc/ld.so.conf.

QUESTION NO: 7
What environment variable will set the path for added libraries?

A. LD_LIBRARY_PATH
B. LIBPATH
C. LPATH
D. LIB
E. None of the above

Answer: A
Explanation: the LD_LIBRARY_PATH environmental variable set the path for added libraries. You can display environmental varialble using env command.

QUESTION NO: 8
You are preparing a new set of shared libraries in /usr/local/applib and you have written and compiled some code that uses these libraries. You have already performed and ldconfig, however the system still cannot find the shared libraries. What is most likely the cause of this?

A. You used the wrong compiler.
B. Your did not update your PATH variable.
C. You compiled the code with wrong library.
D. You forgot to put the library path in ld.so.conf

Answer: D
Explanation:
/etc/ld.so.conf File containing a list of colon, space, tab, newline, or comma spearated directories in which to search for libraries. So you should specify the path the libraries in /etc/ld.so.conf file.

QUESTION NO: 9
What is filename including full path, of the file used to configure library path settings for a system?

A. /usr/lib/lib.so.1
B. /etc/lib.conf
C. /etc/ld.so.conf
D. /usr/lib/modules/modules.conf
E. None of the above

Answer: C
Explanation:
/etc/ld.so.conf File containing a list of colon, space, tab, newline, or comma spearated directories in which to search for libraries. So you should specify the full path the libraries in /etc/ld.so.conf file.

QUESTION NO: 10
What happens when ldconfig is executed?

A. The binary index file (cache) of library locations is rebuilt
B. The text index file of library locations is rebuilt
C. make is run to rebuild the libraries who's source code has changed
D. The disk is scanned for libraries to include in the index
E. Nothing, unless the libraries have been recompiled since ldconfig was last run.

Answer: A

Explanation: ldconfig creates the necessary links and cache to the most recent shared libraries found in the directories specified on the command line, in the file /etc/ld.so.conf, and in the trusted directories (/lib and /usr/lib). The cache is used by the run-time linker, ld.so or ld-linux.so. ldconfig checks the header and file names of the libraries it encounters when determining which versions should have their links updated.

QUESTION NO: 11
To what environment variable will you assign or append a value if you need to tell the dynamic linker to look in a build directory for some of a program's shared libraries?

A. LD_LOAD_PATH
B. LD_LIB_PATH
C. LD_LIBRARY_PATH
D. LD_SHARE_PATH
E. LD_RUN_PATH

Answer: C
Explanation: the LD_LIBRARY_PATH environmental variable set the path for added libraries. You can display environmental varialble using env command.

QUESTION NO: 12
What tool can you use to print shared library dependencies?

A. ldconfig
B. ldd
C. libdep
D. libpath
E. ldev

Answer: B
Explanation: ldd command prints the shared libraries required by each program or shared library specified on the command line.
Example: ldd libdb.so.3
libc.so.6 => /lib/tls/libc.so.6 (0x00237000)
/lib/ld-linux.so.2 (0x0021e000)

Section 5, (1.102.5) Use Debian package management (19 Questions)

Description: Candidates should be able to perform package management skills using the Debian package manager. This objective includes being able to use command-line and interactive tools to install, upgrade, or uninstall packages, as well as find packages containing specific files or software (such packages might or might not be installed). This objective also includes being able to obtain package information like version, content, dependencies, package integrity and installation status (whether or not the package is installed).
Key files, terms, and utilitiesinclude:
unpack
configure
/etc/dpkg/dpkg.cfg
/var/lib/dpkg/*
/etc/apt/apt.conf
/etc/apt/sources.list
dpkg
dselect
dpkg-reconfigure
apt-get
alien

QUESTION NO: 1 CORRECT TEXT
You wish to install a debian package using dpkg called debianpackage.deb. Give the simplest command line to do this.

Answer: dpkg -i debianpackage.deb
Answer: dpkg --install debianpackage.deb

Explanation:
There are two different options -i or -install. Convention is short option starts from - and long option starts from -- .
If you have a package file containing a package you want to install, the simplest way to install the package is to use the dpkg command:
dpkg --install packagefile

where packagefile stands for the name of the package file, which generally ends with the characters .deb. If all the prerequisite packages have already been installed and if the package does not conflict with any installed packages, the command will unpack the package files, move them to their proper locations, and execute the scripts necessary to configure the package.

QUESTION NO: 2 CORRECT TEXT
You have a package called debianpkg.deb and wish to convert it to an rpm.

Type the command line that will do this for you including switches.

Answer: alien -r debianpkg.deb
Answer: alien --to-rpm debianpkg.deb

Explanation: Debian Linux generally uses .deb format packages and Redhat uses .rpm format packages. There is a command named alien used to convert .deb to rpm. To convert the debian package to rpm (redhat package).
alien -r or -to-rpm debianpackage.

QUESTION NO: 3 CORRECT TEXT
Type the command line including switches to convert and install a Redhat package named package.rpm on a Debian system?

Answer: alien -i package.rpm
Answer: alien --install package.rpm
Explanation: Redhat packages are in .rpm format and debian packages are in .deb format. To convert or to install the .rpm packages on debian linux:
alien -i or --install package.rpm

QUESTION NO: 4
What is the correct syntax to remove testking entirely from a Debian System including configuration files?

A. dpkg -r testking
B. dpkg --remove testking

C. dpkg --kill testking
D. dpkg -R testking
E. dpkg --purge testking

Answer: E
Explanation:
To remove an installed package, use the command
dpkg --remove package à this command does not remove package configuration files, which may facilitate subsequent re-installation of the package. If you want to remove the configuration files as well, use the command:
dpkg --purge package

QUESTION NO: 5
What are the default permissions on the Debian /etc/passwd file?

A. 644
B. 640
C. 777
D. 700
E. 400

Answer: A
Explanation: The default permission of /etc/passwd file is:
-rw-r--r--
In Here read and write to owner user, read only to group member and others.
Numerical value of Read 4
Numerical value of Write 2
Numerical value of Execute 1

So default permission is 644

QUESTION NO: 6
What are the default permissions on the Debian /etc/shadow file?

A. 654
B. 640
C. 400

D. 644
E. 540

Answer: C
Explanation: The default permission of /etc/shadow file is:
-r--------
In Here read only to owner user and no permission to others.
Numerical value of Read 4
Numerical value of Write 2
Numerical value of Execute 1

So default permission is 400

QUESTION NO: 7
How do you use dpkg to verify the status of an installed package testkingpkg? Select two.
a) dpkg -s testkingpkg
b) dpkg -S testkingpkg
c) dpkg -stat testkingpkg
d) dpkg --stat testkingpkg
e) dpkg --status testkingpkg

Answer: A, E
Explanation: To verify the install packages on debian linux either -s or --status options is used.
Some common options:

`dpkg -i package.deb`	**installs** the specified package.
`dpkg --purge package`	**removes** the specified package along with its config files.
`dpkg -r package`	**removes** the specified package, but not its config files.
`dpkg-reconfigure package`	**reconfigures** the installed package.
`dpkg -C`	**checks** the system for any partially installed packages.
`dpkg -c package.deb`	**lists** the contents of the uninstalled package.
`dpkg -I package.deb`	**Shows** information about the uninstalled package.
`dpkg -l package-name-pattern`	**lists** installed packages matching the pattern.
`dpkg -s package`	**Shows** the status of the specified package.
`dpkg -L package`	**lists** the files installed on your machine from package.
`dpkg -S filename-search-pattern`	**searches** all installed packages for the owner of the specified file. Ex: `dpkg -S /bin/bash` would return the package **bash**.
`dpkg -p package`	**displays** the info about the installed package. Similiar to -I

QUESTION NO: 8
Which pair of dpkg options are equivalent and what do they do?

A. -C and --configure they reconfigure an unpackaged package
B. -C and --clear-avail they erase exisiting information about what packages are available
C. -A and --audit they update information about what packages are available
D. -C and --audit they provide resource consumption information on installed packages

E. -C and --audit they search for partially installed packages

Answer: E
Explanation: To check the partially installed packages: package -C or --audit packagename

`dpkg -i package.deb`	**installs** the specified package.
`dpkg --purge package`	**removes** the specified package along with its config files.
`dpkg -r package`	**removes** the specified package, but not its config files.
`dpkg-reconfigure package`	**reconfigures** the installed package.
`dpkg -C`	**checks** the system for any partially installed packages.
`dpkg -c package.deb`	**lists** the contents of the uninstalled package.
`dpkg -I package.deb`	**Shows** information about the uninstalled package.
`dpkg -l package-name-pattern`	**lists** installed packages matching the pattern.
`dpkg -s package`	**Shows** the status of the specified package.
`dpkg -L package`	**lists** the files installed on your machine from package.
`dpkg -S filename-search-pattern`	**searches** all installed packages for the owner of the specified file. Ex: `dpkg -S /bin/bash` would return the package **bash**.
`dpkg -p package`	**displays** the info about the installed package. Similiar to -I

QUESTION NO: 9 CORRECT TEXT

You wish to install a package named package.deb using the apt-get tool. Type the simplest command line to do this.

Answer: apt-get install package.deb

Explanation: To install the package using apt-get command

apt-get install package	installs the specified package and any dependancies

QUESTION NO: 10 CORRECT TEXT
What is the name and full path to the location of the dpkg database?

Answer: /var/lib/dpkg
Explanation: Local database is maintain in debian as well as in redhat. /var/lib/dpkg is the local package database for debian linux and /var/lib/rpm for redhat.

QUESTION NO: 11
Which TWO of the following commands allows you to manage .deb packages?

A. dpkg
B. deb
C. dselect
D. debselect

Answer: A,C
Explanation:
dselect - console Debian package handling frontend
dpkg - package manager for Debian

QUESTION NO: 12
How can you list files owned by a specific .deb package?

A. dpkg -L package
B. dpkg --dump package
C. dselect --dump package
D. dselect -L package

Answer: A
Explanation: To list the files installed from a specified package, issue the command:
dpkg --listfiles `package or dpkg -L package`

QUESTION NO: 13
You have not run apt-get, on a system for some time, but it has been run on the system before. What apt-get command would you run to download the latest list of packages, but not the packages themselves?

A. apt-get build-dep
B. apt-get mirror-select
C. apt-get update
D. apt-get upgrade
E. apt-get dist-upgrade

Answer: D
Explanation: To automatically upgrade all installed packages to the latest available version, issue the following command:
apt-get upgrade

QUESTION NO: 14
You want to install a new software package, but it is only available in RPM format and you are running Debian Linux. Which of the following would help you to install it on your system?

A. alien
B. apt-conf
C. dselect
D. cpio

Answer: A
Explanation: alien is a program that converts between Redhat rpm, Debian deb, Stampede slp, Slackware tgz, and Solaris pkg file formats. If you want to use a package from another linux distribution than the one you have installed on your system, you can use alien to convert it to your preferred package format and install it. It also supports LSB packages.

QUESTION NO: 15
What is a reasonable command to uninstall a Debian package from your system?

A. dpkg -Ra pkgname
B. dpkg -R pkgname
C. dpkg -r pkgname
D. dpkg -ra pkgname

Answer: C
Explanation: dpkg ?r | ??remove
Remove an installed package. ?r or ??remove remove everything except configuration files. This may avoid having to reconfigure the package if it is reinstalled later.

QUESTION NO: 16
What command will uninstall a package but leave its configuration Files in case a package is re-installed?

A. none, no command will do this
B. dpkg -s pkgname
C. dpkg -L pkgname
D. dpkg -P pkgname
E. dpkg -r pkgname

Answer: E

Explanation: To remove an installed package, use the command
dpkg --remove package or dpkg -r packageThis command does not remove package configuration files, which may facilitate subsequent re-installation of the package. If you want to remove the configuration files as well, use the command:dpkg --purge package

QUESTION NO: 17
How do you get a list of files that have been installed from a dpkg package?

A. dpkg -l pkgname
B. dpkg -C pkgname
C. dpkg -s pkgname
D. dpkg -S pkgname
E. dpkg -L pkgname

Answer: E
Explanation:
To list the files installed from a specified package, issue the command:
dpkg --listfiles `package or dpkg -L package`

QUESTION NO: 18
Which utility can be used to convert a .rpm package to .deb package format? (Without arguments)

Answer: alien
Explanation:
alien is a program that converts between Redhat rpm, Debian deb, Stampede slp, Slackware tgz, and Solaris pkg file formats. If you want to use a package from another linux distribution than the one you have installed on your system, you can use alien to convert it to your preferred package format and install it. It also supports LSB packages.

QUESTION NO: 19

What is the difference between the -remove and the -purge action with the dpkg command?

A. remove removes the program, -purge also removes the config files
B. remove only removes the program, -purge only removes the config files
C. remove removes a package, -purge also removes all packages dependent on it
D. remove removes only the package file itself, -purge removes all files related to the package

Answer: A
Explanation: ?r or ??remove remove everything except configuration files. This may avoid having to reconfigure the package if it is reinstalled later. (Configuration files are the files listed in the debian/conffiles control file). ?P or ??purge removes everything, including configuration files. If ?a or ??pending is given instead of a package name, then all packages unpacked, but marked to be removed or purged in file /var/lib/dpkg/status, are removed or purged, respectively.

Section 6, (1.102.6) Use Red Hat Package Manager (RPM) (26 Questions)

Description: Candidates should be able to perform package management under Linux distributions that use RPMs for package distribution. This objective includes being able to install, re-install, upgrade, and remove packages, as well as obtain status and version information on packages. This objective also includes obtaining package information such as version, status, dependencies, integrity, and signatures. Candidates should be able to determine what files a package provides, as well as find which package a specific file comes from.
Key files, terms, and utilitiesinclude:
/etc/rpmrc
/usr/lib/rpm/*
rpm
grep

QUESTION NO: 1 CORRECT TEXT
The _____ command is typically used to search files for a specified string.

Answer: grep
Explanation: grep command prints lines of files where pattern is matched.

Eg: grep root /etc/passwd à will display all lines from /etc/paswd matching the root pattern.

QUESTION NO: 2 CORRECT TEXT
You need to remove the package testking regardless of dependencies, type the command with switches that will do this?

Answer: rpm -e testking --nodeps
Answer: rpm -e --nodeps testking

Explanation: To remove the package we can use the -e or --erase option. To remove or install or upgrade the package without checking the dependencies -nodeps option is used.
So,
rpm -e --nodeps testking
rpm -erase nodeps testking

QUESTION NO: 3
What RPM command would show you detailed information for a package called openssh-3.6.i386.rpm?

A. rpm --showinformation openssh-3.6.i386.rpm
B. rpm -- showdetails openssh-3.6.i386.rpm
C. rpm -qi openssh-3.6.i386.rpm
D. rpm -- verify openssh-3.6.i386.rpm

Answer: C
Explanation: -qi option queried and display the information about the package.

QUESTION NO: 4
After a minor security incident you are instructed by your lead sys-admin to verify the RPM's installed on running system. Which command will create a complete report which you can analyze for changes which may be security related?

A. rpm -Va>report
B. rpm -Qavy > report
C. rpm -Vqt-- nomd5>report
D. rpm -checkfiles >report
E. rpm -Va-nofiles > report

Answer: A

Explanation: Verifying a package compares information about the installed files in the package with information about the files taken from the package metadata stored in the rpm database. Among other things, verifying compares the size, MD5 sum, permissions, type, owner and group of each file. Any discrepancies are displayed.
To verify the package:
rpm -Va or -verify -a packagename

QUESTION NO: 5
You need to know where all the configuration files for the installed package named "postfix" are located.
Assuming it was installed with rpm, which command will list this information for you?

A. `rpm -qc postfix`
B. `rpm -Vc postfix`
C. `prm --config postfix`
D. `rpm -listconfig postfix`
E. `prm -qa --config postfix`

Answer: A
Explanation: To list the configuration files of installed package: rpm -qc or -q --configfiles packagename. To list all belongs to installed package: rpm -ql or -q --list packagename

QUESTION NO: 6
You want to examine the changelog for the installed package "postfix".
Which command will display the changelog?

A. rpm -Vc postfix
B. rpm -qpil postfix
C. rpm --changelog postfix
D. rpm -q --changelog postfix
E. rpm -qa --changelog postfix

Answer: D
Explanation: To query the changelog of installed package:
rpm -q --changelog packagename

QUESTION NO: 7
What would the command "rpm --allmatches rpmname" do?

A. Remove all packages named allmatches
B. Remove all packages with the package name rpmname
C. Remove all packages regardless of name

Answer: B
Explanation: Remove all versions of the package which match PACKAGE_NAME.

QUESTION NO: 8
What will happen when the following command is issued?

```
rpm -Uvh file
```

A. The rpm file will be verified
B. The installed package will be upgraded with the package in file, with verbose output
C. The installed package may be upgraded with the package called file, giving verbose output and hash marks to show installation
D. An error will occur as a package specifier was not included in the command line

Answer: C
Explanation: This upgrades or installs the package currently installed to a newer version. It checks either old version is installed or not, if installed then it will upgrade to newer and install new if not installed.

QUESTION NO: 9
Which RPM command would produce the following output

```
Name : xwhois Relocations: (not relocatable)

Version : 0.3.7 Vendor: Tess King

Release : 1 Build Data: Fri 06 Aug 1999 09:29:07 AM EDT

Install date: (not installed) Build Host:
desktop.infohvy.com

Group : Application/Internet Source RPM: (none)

Size : 74057 License: GPL

Packager : Ryan Weaver <ryanv@testking.com>

URL : http://www.goatnet.ml.org/software.html

Summary : X Windows Whois Tool

Description: xwhois is a small and fast query tool for the
whois service. (rfc954)

xwhois-0.3.7.tar.gz

xwhois.spec
```

A. rpm -qpil xwhois-0.3.7-1.src-rpm
B. rpm-qx xwhois
C. rpm-Vf xwhois-0.3.7-1.src.rpm
D. rpm-verify xwhois-0.3.7-1.src.rpm
E. rpm-showheaders xwhois-0.3.7-1.src.rpm

Answer: A
Explanation: The output is information of xwhois package. To display the information about the package, we use the -qi option.

QUESTION NO: 10
After a minor security incident you are instructed by your lead sys-admin to verify the RPM's installed on a running system.
Which command will create a complete report which you can analyze for changes which may be security related?

A. `rpm -Va >report`
B. `rpm -Qavy >report`
C. `rpm -Vqt --nomd5 >report`
D. `rpm --checkfiles >report`
E. `rpm -Va --nofiles >report`

Answer: A
Explanation: Verifying a package compares information about the installed files in the package with information about the files taken from the package metadata stored in the rpm database. Among other things, verifying compares the size, MD5 sum, permissions, type, owner and group of each file. Any discrepancies are displayed.
To verify the package:
rpm -Va or -verify -a packagename

QUESTION NO: 11
You are about to install a new program on an RPM based Linux system.
Which of the following would be the best way to accomplish this?

A. Get the source code in a tarball and install from that source.
B. Get a source RPM and use rpm to install it.
C. Use rpm to install the program's binaries from an RPM package.
D. Use cpi to extract the binaries from a source RPM and use rpm to install those sources.

Answer: C
Explanation: rpm command is used to install, upgrade or uninstall the rpm format package.

QUESTION NO: 12
How can you update a package only if an earlier version is currently installed on the system?

A. rmp -- update rpmname
B. rpm -U rpmname
C. rpm -F rpmname
D. rpm -- force rpmname
E. rpm -u rpmname

Answer: C
Explanation: Upgrades, but only if the package installed.

QUESTION NO: 13 CORRECT TEXT
Type the shortest command including switches, to remove the installed Redhat Package named packagename from the system.

Answer: rpm -e packagename
Explanation: To Remove the package: rpm -e or --erase packagename

QUESTION NO: 14 CORRECT TEXT
Type the command line that will list information, and all file locations on the installed package mypackage?

Answer: rpm -qil mypackage
Answer: rpm -qli mypackage
Explanation: Some common options of rpm command
-i or --install à Install the New package
-U or --upgrade à Upgrade the Package
-e or --erase à Remove the package
-q or --query à Query the package
-qi à Query the information of package
-ql àQuery and list all files belongs to package.

Multiple options can be combined on single - and order can be different.

QUESTION NO: 15 CORRECT TEXT
Type the simplest RPM command to list where the package file testking.rpm will install its files

Answer: rpm -qpl testking.rpm
Answer: rpm -qlp testking.rpm
Explanation: Some common options of rpm command
-i or --install à Install the New package
-U or --upgrade à Upgrade the Package
-e or --erase à Remove the package
-q or --query à Query the package
-qi à Query the information of package
-ql àQuery and list all files belongs to package.

Multiple options can be combined on single - and order can be different.

QUESTION NO: 16 CORRECT TEXT
Type the command line to check the installed package mypackage for any configuration file changes since install?

Answer: rpm -V mypackage
Explanation: Verifying a package compares information about the installed files in the package with information about the files taken from the package metadata stored in the rpm database. Among other things, verifying compares the size, MD5 sum, permissions, type, owner and group of each file. Any discrepancies are displayed.
To verify the package:
rpm -Va or -verify -a packagename

QUESTION NO: 17 CORRECT TEXT
What command on an rpm-based system will upgrade any existing packages on a system, but not add any packages? Type just the command and switch(es).

Answer: rpm -F
Explanation: -U or -F both option is used to upgrade the package. -U option upgrade if lower version is installed otherwise install the new version package but -F option only upgrade if lower version package installed. As well as it doesn't add(install) any other packages.

QUESTION NO: 18 CORRECT TEXT
What command on an rpm-based system will upgrade any existing packages on a system, and add any packages needed? Type just the command and switch(es).

Answer: rpm -U
Explanation: -U or -F both option is used to upgrade the package. -U option upgrade if lower version is installed otherwise install the new version package but -F option only upgrade if lower version package installed. As well as it doesn't add(install) any other packages.

QUESTION NO: 19
Which command will allow you to find a specific installed package?

A. rpm -- list rpmname
B. rpm -qvl rpmname
C. rpm rpmname
D. rpm -qv rpmname
E. rpm -f rpmname

Answer: D

Explanation : To query the package whether, package is installed or not :
rpm -qv rpmname
example: rpm -qv ncurses à It shows rpm fullname, version if installed otherwise it will display package is not installed.
Installed package options:
rpm -qa à Lists all installed packages
rpm -qf filename à Shows owning package
rpm -qi rpmname à General Information of Package

rpm -ql rpmname à Shows all files owning by this package

QUESTION NO: 20
Which command will print to standard out only the lines that do not begin with # (pound symbol) in the file foobar?

A. /bin/grep ^# foobar
B. /bin/grep -v ^# foobar
C. /bin/grep #$ foobar
D. /bin/grep -v #$ foobar

Answer: B
Explanation: grep stands for general regular processor, used to prints all lines where pattern matched.
Achor symbol used by String Processor tools like sed, awk and grep
^ àLine begins with
$ à Line ends with
\<word begins with
\>word end with
-v option in grep is non matching.

QUESTION NO: 21
You have an updated RPM called screensaver-1.1.i386. rpm. You have version 1.0 installed. Using RPM, how do you view the changelog of this file to see if you should install the update?

A. rpm -qp --changelog screensaver-1.1.i386. rpm
B. rpm --changelog screensaver-1.1.i386. rpm
C. rpm -qc screensaver-1.1.i386. rpm
D. rpm -showchangelog screensaver-1.1.i386. rpm

Answer: B
Explanation: Syntax of rpm command
rpm [options] package

-i à Install
-U àUpgrade package if lower version is installed otherwise install the new package.
-F à Upgrade package if only lower version is installed.
-l à List all files belongs to package
-p à Package Name
-q à Query
--changelog à Display change information for the package.

QUESTION NO: 22
You want to preview where the package file, apache- xml.I386.rpm, will install its files before installing it. What command do you issue?

A. rpm -qp apache-xml.i386.rpm
B. rpm -qv apache-xml.i386.rpm
C. rpm -ql apache-xml.i386.rpm
D. rpm -qpl apache-xml.i386.rpm

Answer: D
Explanation: Syntax of rpm command
rpm [options]
package -i à Install
-U àUpgrade package if lower version is installed otherwise install the new package.
-F à Upgrade package if only lower version is installed.
-l à List all files belongs to package
-p à Package Name
-q à Query
To preview the package files location store after installation, rpm -qpl package.

QUESTION NO: 23
You see following output while trying to install an updated package: [root@example pub]# rpm -i gthumb-2.2.0.i386.rpm package gthumb-1.0.1.i386.rpm is already installed.
Which command will allow you to install the updated version?

A. rpm -i gthumb-2.2.0.i386.rpm
B. rpm -ivh gthumb-2.2.0.i386.rpm
C. rpm -U gthumb-2.2.0.i3S6.rpm
D. rpm -qu gthumb-2.2.0.i386.rpm
E. rpm -qiv gthumb-2.2.0.i386.rpm

Answer: C
Explanation: Syntax of rpm command
rpm [options] package
-i à Install
-U àUpgrade package if lower version is installed otherwise install the new package.
-F à Upgrade package if only lower version is installed.

QUESTION NO: 24
You have to test a new kernel version. Which of the following is the best way to add a new linux kernel in your system?

A. rpm -fvh kernel_package
B. rpm -Uvh kernel_package
C. rpm -u kernel_package
D. rpm -u kernel_package && make
E. rpm --conflicts kernel_package

Answer: B
Explanation: Syntax of rpm command
rpm [options] package
-i à Install
-U àUpgrade package if lower version is installed otherwise install the new package.
-F à Upgrade package if only lower version is installed.

QUESTION NO: 25
You want to search the file myfile for all occurrences of a string containing at least five characters, where character number 2 and 5 are "a" and character number 3 is NOT "b". Which command would you use?

A. grep a*^b*a myfile

B. grep .a[^b].a myfile
C. grep .[a].*.[a] myfile
D. grep .a*^b..a myfile

Answer: B
Explanation: String Processing Tools like grep, sed, awk uses wildcard characters.
. à Any Single character from the range
[abc] à Any Single Character from the set
[a-c] à Any Single Character from the Range
[^abc] à Any Single Character except from the set.
[^a-c] àAny Single Character except from the range.
According to Question, in 2nd and 5th position must be a and in 3rd position not b.
B. . means any single character in first postion., a means a must be in second postions, [^b] means b must not be in third postion, . means any single character in fourth position and a in fifth position.

QUESTION NO: 26
You installed a beta rpm package, but are experiencing some problems with it. How can you remove this package?

A. rpm -qe rpmname
B. rpm -V --remove rpmname
C. rpm -r rpmname
D. rpm -d rpmname
E. rpm -ev rpmname

Answer: D
Explanation: To uninstall the package, we use the rpm -ev rpmname or rpm --erase rpmname
To install package: rpm -ivh rpmname : where -I means install, -v means verbose, -h means display the Hash marks.
To Upgrade rpm: rpm -Uvh rpmname: where -U means Upgrade.
To Freshen Upgrade : rpm -Fvh rpmname

Topic 3, (103) GNU & Unix Commands (197 Questions)

Section 1, (1.103.1) Work on the command line (31 Questions)

Description: Candidates should be able to Interact with shells and commands using the command line. This includes typing valid commands and command sequences, defining, referencing and exporting environment variables, using command history and editing facilities, invoking commands in the path and outside the path, using command substitution, applying commands recursively through a directory tree and using man to find out about commands.

Key files, terms, and utilitiesinclude:

.

bash
echo
env
exec
export
man
pwd
set
unset

~/.bash_history
~/.profile

QUESTION NO: 1
What command can be used to show all variables?

A. set
B. varlist
C. show var
D. show

Answer: A
Explanation: Generally there are two types of variables are available in Linux. One is called the shell variable and another is called the Environmental Variable. Shell variable available in particular shell whether environmental variable available in all shells.
set : Displays all shell as well environmental variables.
env : Displays the environmental variables

QUESTION NO: 2CORRECT TEXT

You wish to set your shell options so that the output from a redirect will NOT overwrite an existing file. Type the command including switches.

Answer: set -o noclobber
Explanation: noclobber global option controls the file overwriting to an existing file.
set -o : Lists all options with on/off status
set -o noclobber : Set on the noclobber and restrict to use the redirect (>) symbol.
set +o noclobber : Set off the noclobber and allow to use the redirect (>) symbol.

QUESTION NO: 3CORRECT TEXT
You wish to turn off the shell option that stops you overwriting exisiting files. Type the command in that will do this including switches.

Answer: set +o noclobber
Explanation: noclobber global option controls the file overwriting to an existing file.
set -o : Lists all options with on/off status
set -o noclobber : Set on the noclobber and restrict to use the redirect (>) symbol.
set +o noclobber : Set off the noclobber and allow to use the redirect (>) symbol.

QUESTION NO: 4
You have just typed the following three commands and got the following output:

```
prompt> echo $PATH

/usr/bin:/usr/local/bin:usr/sbin:opt/kde/bin

prompt> pwd

/home/anna/games

promt> ls

game1 game2 game3
```

You want to run the program game1, but get the response that it is not found.
What did you forget to do?

A. To type ./game1 rather than game1.
B. To switch the directory /home/anna first.
C. To unset your PATH before running the program.
D. To set execution permissions for the program game1.

Answer: A
Explanation: /home/anna directory is not set on path. So to execute the program from the directory not set in path, should execute by givin full path or use the ./ .
If you are in /home/anna use ./ means under current directory.
To set the directory on path

PATH=$PATH:/home/anna/

QUESTION NO: 5 CORRECT TEXT
What is the name and full path of the file that contains the system wide Environment variables and Startup programs?

Answer: /etc/profile
Explanation: The /etc/profile shell scrpt is first startup script run when a login shell is started. It only runs for the login shells, non-login shells do not invoke this script.
This script will set a series of variables including PATH, USER, LOGNAME, MAIL, HOSTNAME, HISTSIZE, INPUTRC as well calls the startup programs to execute.

QUESTION NO: 6CORRECT TEXT
Type in just the name of the command that allows you to edit the command history, and will execute the contents of the buffer when exited.

Answer: fc
Explanation: fc command allows the history command to edit as well as when you exit from the edit mode, It will executes the command.

QUESTION NO: 7CORRECT TEXT
You wish to find out more information on a file e.g. Last accessed, Modified changed, Inode. What is the simplest command that would show this information for a file called tessking?

Answer: stat tessking
Explanation: stat command displays the meta information of file.

Example:
stat file1
File: file1
Size: 5 Blocks:8 IO Block: 409 regular file
Device: 30ch/780d Inode: 16217 Links: 2
Access: (0644/-rw-r-r--) Uid: (0/ root) Gid: (0/ root)
Acces: 2006-04-16 12:50:44.000000000
Mondify: 2006-04-16 12:50:44.000000000
Change: 2006-04-16 12:50:44.000000000

QUESTION NO: 8
Which command will output the exit status of the previous command (a 1 or a 0)?

A. echo $?
B. echo $1
C. echo $EXIT
D. exitstatus

Answer: A
Explanation: $? is used to displays to catch the return value. When command executes it returns 0 or other value. 0 means command is executed successfully and other value means executed with error.

Example:
function test1()
{
echo "From test1 function"

return 1
}
echo "Retrun Value is " $?

QUESTION NO: 9 CORRECT TEXT
What 3 letter command will show you the values set by the /etc/profile script file for the entire system?

Answer: env
Explanation: env command is used to display the all environmentall variables as well as values. Where /etc/profile file is used to set the value into the environmental variable.

QUESTION NO: 10 CORRECT TEXT
What 3 letter command will show you the values set by the /etc/bashrc script file for the entire system?

Answer: set
Explanation: set command is used to display the all shell as well as environmental variables as well as variables values. env command is used to display the all environmentall variables as well as values.

QUESTION NO: 11
Your Linux machine has 2 monitors. Your second monitor is configures as the second screen of the first display. If you want the "netscape" program to be displayed on your second monitor, what command should you use before starting netscape?

A. export set display=:10; netscape
B. export set DISPLAY=:0:0; netscape
C. export set DISPLAY=:0:1; netscape
D. export set DISPLAY=:1:0; netscape

Answer: C
Explanaton: Answer C is correct because:
export set DISPLAY=192.168.0.1:0 : means displays on first monitor of 192.168.0.1 host.
export set DISPLAY=192.168.0.1:1 : means on second monitor of 192.168.0.1 host.

QUESTION NO: 12
You have a dual-head workstation with two monitors. Your secondary monitor is defined as the second screen of the first display. You want to start Mozilla and display its window on the second display. Which command line would you use to achieve this?

A. export DISPLAY=:1.0; mozilla
B. export DISPLAY=:0.1; mozilla
C. export SECOND=1; mozilla
D. export SECOND=2; mozilla

Answer: A
Explanaton: Answer C is correct because:
export set DISPLAY=192.168.0.1:0 : means displays on first monitor of 192.168.0.1 host.
export set DISPLAY=192.168.0.1:1 : means on second monitor of 192.168.0.1 host.

QUESTION NO: 13
What two files are used to configure a user's environment that was created with the default options?

A. ~/.profile, ~/.bashrc
B. /etc/profile, /bashrc
C. ~/.bash_profile, ~/.bashrc
D. /etc/.login, ~/.login
E. None of the above

Answer: C
Explanation: /etc/profile: is the global file sets the value on environmental variable as well as executes the startup program.

/etc/bashrc : Global file sets the default permission, permanent aliases as well as permanent functions.
To set the user specific environment use
~/.bash_profile
~/.bashrc
~/.bash_logout

QUESTION NO: 14
Which of the following are executed ONLY during a Login session? Select all that apply.

A. /etc/profile
B. /etc/bashrc
C. ~/.bashrc
D. ~/.bash_profile
E. ~/.bash_logout

Answer: A, D,E
Explanation: Startup scripts: For Login shell
/etc/profile
/etc/profile.d
~/.bash_profile
~/.bashrc
/etc/bashrc
Non-Login Shell
~/.bashrc
/etc/bashrc
/etc/profile.d

/etc/profile, ~/.bash_profile file calls when login shell provided users logged in.
~/.bash_logout: File calls when user logout from the shells, useful for backup, clearing /tmp etc.

QUESTION NO: 15
Which of the following are executed during a non-login shell? Select three.

A. /etc/profile

B. /etc/bashrc
C. ~/.bash_profile
D. ~/.bashrc
E. ~/.bash_logout

Answer: B, D, E
Explanation: Startup scripts: For Login shell
/etc/profile
/etc/profile.d
~/.bash_profile
~/.bashrc
/etc/bashrc
Non-Login Shell
~/.bashrc
/etc/bashrc
/etc/profile.d

/etc/bashrc, ~/.bashrc file executes during a non-login shell.
~/.bash_logout: File calls when user logout from the shells, useful for backup, clearing /tmp etc.

QUESTION NO: 16
In which file are you likely to find the settings for umask, path, and ulimit on a per user basis?

A. /etc/profile
B. /etc/bashrc
C. ~/.bash_profile
D. ~/.bashrc

Answer: C
Explanation: ~/bash_profile and ~/bashrc file for user specific settings, common to place variable settings, aliases, commands that places output to the screen, such as date command, should go in .bash_profile not .bashrc.

QUESTION NO: 17

In Bash, inserting "1>&2" after a command redirects

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

Answer: C
Explanation:
Statndard Input use < symbol and 0 is the integer value
Standard Output use > symbol and 1 is the integer value
Standard Error use 2> symbol and 2 is the integer value
Example:
find / - name passwd >allresult 1>&2 : Redirects all standard output as well as standard error to allresult file. Where & is the logical operator.

QUESTION NO: 18 CORRECT TEXT
What three letter command in Bash will display all environment variables?

Answer: env
Explanation: env command displays all environmental variables as well as it's value. Where set is another command displays all shell variables.

QUESTION NO: 19 CORRECT TEXT
Type in just the name of the default file that the command line history is stored in for a logged in user.

Answer: .bash_history
Explanation: One environmental variable named HISTFILE carrying the name of file to store the history command. By default the history commands stores in ~/bash_histroy.
You can displays using the variable:
echo $HISTFILE

QUESTION NO: 20 CORRECT TEXT
Type just the name of the file in a normal user's home directory that will set their local user environment and startup programs on a default Linux system.

Answer: .bash_profile
Explanation: ~/bash_profile and ~/bashrc file for user specific settings, common to place variable settings, aliases, commands that places output to the screen, such as date command, should go in .bash_profile not .bashrc.

QUESTION NO: 21 CORRECT TEXT
On a default Linux system, what is the name of the file that sets users aliases and functions?

Answer: .bashrc
Explanation: ~/bash_profile and ~/bashrc file for user specific settings, common to place variable settings, aliases, commands that places output to the screen, such as date command, should go in .bash_profile not .bashrc.

QUESTION NO: 22 CORRECT TEXT
What is the name and full path of the file that contains the system wide aliases and functions for the default Linux shell?

Answer: /etc/bashrc
Exlanation: /etc/bashrc file sets the system wide aliases, functions as well as default permission umask value for root as well as non-root user.

QUESTION NO: 23 CORRECT TEXT
What is the name of the file that runs on user logout, usually set to clear the screen?

Answer: .bash_logout

Explanation: ~/bash_logout file execute when exiting a login shell, Useful for running programs automatically at logout ie, clear the screen, make backup files, delete temporary files, display date and time etc

QUESTION NO: 24 CORRECT TEXT
You are in your home directory. You have made changes to your .bash_profile and incorporated a modified PATH variable. Type in the command that will reread the .bash_profile and set the changes you have made.

Answer: source .bash_profile
Answer: .bash_profile
Explanation: ~/.bash_profile executes when loggin shell provided users login. So, to bring the changes made on ~/bash_login either user should re-login or manually executest the shell scripts file ~/.bash_profile.

QUESTION NO: 25
When a user executes the command "ps ax", what is shown on the console? Choose all that apply.

A. Process's user-related information
B. Processes without controlling terminals
C. Processes used by the XFree86 System
D. All regular processes
E. Processes on remote machines

Answer: B, D
Explanation: Process are running in two different methods: one is terminal dependent (means controlled by terminal) and second is terminal independent (terminal independent).
ps -a: All process not including not controlled by terminal
ps -x : All process including not controlled by terminal

QUESTION NO: 26
Which shell built-in command can be used to create a shortcut or

pseudonym for a longer command? Assume a modern bourne-like shell, such as bash.

A. shortcut
B. ln
C. sudo
D. link
E. alias

Answer: E
Explanation: Alias command is used to create like shortcut of long command.
Example: alias back="tar -cvf mytar.tar /root/*", here back will be the alias (shortcut) of complete "tar -cvf mytar.tar /root/*" command.

QUESTION NO: 27
Which of the following commands will send output from the program myapp to both standard output (stdout) and the file file1.log?

A. cat < myapp | cat > file1.log
B. myapp 0>&1 | cat > file1.log
C. myapp | cat > file1.log
D. myapp | tee > file1.log
E. tee myapp file1.log
F. All the other alternatives are incorrect.

Answer: F
Explanation: Answer should be like this: set | tee set.out àtee command helps to redirect the output to file while piping. Here output of set will display as well as output redirect to set.out file.

QUESTION NO: 28
You want to the command foo to take its input from the file foobar and send its output to the program bar. Which of the following command lines will do this?

A. foo < foobar | bar
B. foo < foobar > bar
C. foo | foobar > bar
D. foo | bar < foobar
E. foo > bar < foobar

Answer: B
Explanation:
Command> file à Redirect the standard Output to file.
Command>>file à Append the standard output to file.
Command<file à Takes input from the File.
Command 2>file à Redirect the standard error to file.
Command 2>>file àAppend the Standard Error to file.

In B foo taking the input from foobar using < symbol and redirecting the output to >bar file.

QUESTION NO: 29
In order to append the output of ls to a file called bazz, which of the following command lines would you use?

A. ls > bazz
B. ls >& bazz
C. ls &> bazz
D. ls >> bazz

Answer: D
Explanation:
Common Redirection Operator:
Command >file à Redirect the Standard Output of command into file.
Command >>file à Append the Standard Output of command into file.
Command <file à Command receives input from file.
Command 2>file à Redirect the error message to file.
Command 2>>file à Append the error message to file.

QUESTION NO: 30
You have two shell scripts, foo and bar. You wish to have bar execute if foo returns an exit status of 0. Select the correct command:

A. foo; bar
B. foo || bar
C. foo && bar
D. foo % bar

Answer: C
Explanation: && à Logical AND Operator
|| à Logical OR Operator
! à Logical NOT Operator
Correct Answer is C because first tried to execute foo. If foo executes without any error then executes bar. If any error occurs in foo then exit from command.

QUESTION NO: 31
Which command will print line numbers before each line in a file?

A. ln
B. nl
C. cat -n
D. numline

Answer: C
Explanation: cat command is used to display the contents of file in standard output.
Syntax: cat [option] filename.
Options: -n, -b à Display the line number before each line
-A à Show all characters including control characters.
-s à Squeeze multiple adjacent blank lines into one line

Subsection 1, Miscellaneous Commands (26 Questions)

QUESTION NO: 1
You want to repeat command number 3 in your history. How would you do this?

A. repeat 3
B. !3
C. show 3
D. #3

Answer: B
Explanation: bash shell stores the history commands later we can re-execute the commands from the history.
!! : To repeat the last entered command
!n : To execute the command from history having n numbered.
!-n : To execute the command entered n command back
!c : To execute the command started from history started by c character.

QUESTION NO: 2
What symbol can be placed at the end of a line to indicate that the command continues on the next line?

A. /
B. \
C. ;
D. |
E. :

Answer: B
Explanation: \ is use to kill the meaning of special character.
Example: echo "The rate is \$5": which kills the meaning of $ symbol so to kill the meaning of space/enter etc use the \ charater.

QUESTION NO: 3
What is the correct format for a proper command in the shell?

A. Option Argument Command
B. Command Argument Option
C. Command Option Argument

Answer: C
Explanation: Syntax of executing the command in shell is
command [options] argument
example: ls -l /etc : Where ls is command, -l is option and /etc/ is the parameter or argument for ls command.

QUESTION NO: 4
Which of the following will allow both the commands to execute, regardless of their individual exit status?

A. command1 | command2
B. command1 $ command2
C. command1 & command2
D. command1 ; command2
E. command1 ^ command2

Answer: D
Explanation: ; helps to execute the multiple commands in order.
example: clear;ls : First execute clear then ls.
&& is AND logical Operator
|| is OR logical operator
! is NOT logical Operator

QUESTION NO: 5
Which of the following will cause command2 not to execute if command1 fails?

A. command1 & command2
B. command1 && command2
C. command1 || command2
D. command1 | command2
E. command1 ; command2

Answer: B
Explanation: && is the Logical AND operator, whiche means second command executes if first command excuted successfully.

Example: cat a && ls : if cat a executes successfully then only ls command will execute other wise exit from the cat command.

QUESTION NO: 6
How can you execute two commands, the second one being executed only if the first returns a nonzero (program execution failed) exit status?

A. command1 || command2
B. command1 && command2
C. command1 $$ command2
D. command1 @@ command2

Answer: A
Explanation: || is called the Logical OR Operator, which means either in sense eiher first or second. If first command exited with error then only second executes.
Example: cat a || ls : if cat command return the error code then start to execut the ls command.
Remember that if command executes successfully then it returns zero value and if command executes with error it returns the error code.

QUESTION NO: 7
You want to repeat the last command you entered. How would you do this?

A. #
B. !!
C. #l
D. ##

Answer: B
Explanation: !! re-excutes the last entered command.
!n : executes the command from history n numbered in history list. You can use the history command to list all history commands.

QUESTION NO: 8

You want to view a listing of previously entered commands. What command would you use?

A. hist
B. histfile
C. showbuff
D. history

Answer: D
Explanation: history command lists all commands in history. All history commands stored in ~/.bash_history file.

QUESTION NO: 9
You wish to copy 3 lines down from your cursor position into the and append it to the b buffer. Type the key combination to do this.

Answer: B3yy

QUESTION NO: 10
You want to run three commands one after the other, but don't care what exit they had. What command line would do this?

A. cmd1 cmd2 cmd3
B. cmd1, cmd2, cmd3
C. cmd1: cmd2: cmd3
D. cmd1; cmd2; cmd3

Answer: D
Explanation: ; symbol helps to separate the multiple commands. It never checks the retrun value so not like the logical operator.
Example: cat a;ls;date : three commands are combined first executes cat command then ls and then date.

QUESTION NO: 11
Type in the command line that will execute cmd2 regardless of exit status of cmd1. Assume these commands are on the systems PATH and the command names are cmd1 and cmd2.

Answer: cmd1;cmd2
Alternative correct answers:
cmd1 ; cmd2
cmd1; cmd2
cmd1 ;cmd2

Explanation: ; symbol helps to separate the multiple commands. It never checks the retrun value so not like the logical operator.
Example: cat a;ls;date : three commands are combined first executes cat command then ls and then date.

QUESTION NO: 12
What command would execute cmd1 followed by cmd2, regardless of the exit status of cmd1?

A. cmd1 cmd2
B. cmd1 | cmd2
C. cmd1 ; cmd2
D. cmd1 && cmd2
E. cmd1 || cmd2

Answer: C
Explanation: ; symbol helps to separate the multiple commands. It never checks the retrun value so not like the logical operator.
Example: cat a;ls;date : three commands are combined first executes cat command then ls and then date.

QUESTION NO: 13

Which keystrokes will move the cursor 3 lines down and 4 characters to the right?

A. 3j4l
B. 3k4m
C. 3h4j
D. 3l4k
E. 3m4k

Answer: A
Explanation: Cursor Movement in vi editor:
h : Left
j : down
k : up
l : right
Example: when you press the h key it moves the cursor in left of one character.
3h: moves the cursor in 3 characters left

QUESTION NO: 14
You want to repeat a command that began with the letters 'ab'. How would you do this?

A. !ab
B. list ab
C. #ab
D. show ab

Answer: A
Explanation: bash shell stores the history commands later we can re-execute the commands from the history.
!! : To repeat the last entered command
!n : To execute the command from history having n numbered.
!-n : To execute the command entered n command back
!c : To execute the command started from history started by c character.

QUESTION NO: 15

What option is used with the useradd command to specify the user's home directory?

A. -d
B. -h
C. -u
D. -a

Answer: A
Explanation: useradd command is used to add the user in the system. By default it creates the user's home directory in /home if you want to specify the user's home directory in different location use the -d and name of directory with path.
Example:
useradd -d /var/user1 user1
useradd -s /bin/sh user1 : Sets the sh shell as default shell to user user1
After adding the user use the usermod command to change the user's home directory, login shell, account lock, account unlock etc.

QUESTION NO: 16
What switch is used with the usermod command to change a user's secondary groups?

A. -G
B. -group
C. -d
D. -U

Answer: A
Explanation: When we create the user, by default user belongs to it's private group as a primary group. After adding the user into the system, if you want to change:
usermod -g groupname username
To make user belongs to secondary group:
usermod -G groupname username

QUESTION NO: 17

You are adding a new user. You want to create the user's home directory only if the directory does not exist. Which of the following would accomplish this?

A. useradd -m
B. useradd -h -y
C. useradd -u
D. useradd -h

Answer: A
Explanation: When we issue the useradd command, it creates the user by creating the user's home directory into /home.
If you create the user's home directory into different location:
useradd -d directory username

If you want to check whether user's directory is already created or not :
useradd -m

QUESTION NO: 18
You want a user's account to expire in ten days. What option used with the useradd command will allow you to do this?

A. -e
B. -u
C. -d
D. -t

Answer: A
Explanation: To set the account expire date into the useradd command:
useradd -e "date" username
After creating the user also you can set the account expire date:
usermod -e "date" username
you can display the password aging policy as well as account expire date using the chage -l username

QUESTION NO: 19
What switch is used with the useradd command to specify a user's initial group?

A. -g

B. -i
C. -u
D. -ig

Answer: A
Explanation: When we create the user it creates the group same username and make user belongs to that group as a private group. If you want to chage the private group at user creating time:
useradd -g groupname username

QUESTION NO: 20
What option is used with the useradd command to specify the user's user id?

A. -u
B. -s
C. -ui
D. -id

Answer: A
Explanation: By default 0-499 user id reserved for system user and starts to assign from 500 to normal user. To set the user id at useradd command use the -u option.
Example:
useradd -u 1000 user1 : Which creates the user user1 having user id 1000.
You can display user id as well as group id using the id command

QUESTION NO: 21
What option is used with the useradd command to specify the user's login shell?

A. -s
B. -l
C. -u
D. -sh

Answer: A
Explanation: When we create the user it assign the bash shell to user, to assign the different shell use the -s option.

Example:
useradd -s /bin/sh user1 : which creates the user user1 by assigning the /bin/sh shell.
You can check the /etc/passwd file to check the user id, user's private group id, home directory and login shell.

QUESTION NO: 22
You want there to be 3 grace days after a password expires before an account becomes disabled. How would you do this?

A. Use the useradd command with the -f switch
B. Check the delay option in user admin
C. Edit the user's user.conf file
D. Use the useradd command with the -d switch

Answer: A
Explanation: useradd -f inactive_days username : The number of days after a password expires until the account is premanentaly disabled. A value of 0 disables the account as soon as the password has expired, and a value of -1 disables the feature.

QUESTION NO: 23
Which of the following can be used to change a user's home directory?

A. usermod -d
B. usermod -h
C. usermod -u
D. usermod -c

Answer: A
Explanation: To change the user's home directory use the -d option in usermod command.
Example:
usermod -d /var/user1 user1 : Which sets the home directory of user user1 into the /var/user1.
usermod -s /bin/sh user1 : Which sets the default shell of user user1 sh shell.
usermod -L user1 : Which locks the user account
usermod -U user1 : Which unlocks the user account

QUESTION NO: 24
You had a contractor come into your company. You originally set his account to expire after thirty days. You now need to change this. How can you do this?

A. usermod -e
B. usermod -a
C. usermod -x
D. usermod -d

Answer: A
Explanation: To set the account expire date:
usermod -e "date" username
Example: usermod -e "May 20 2006" user1

QUESTION NO: 25
You are logged in as user tux1, but now you want to switch users to tux2 with tux2's environment. How would you do this?

A. su tux2
B. su -e tux2
C. su - tux2
D. su -m tux2
E. su -f tux2

Answer: C
Explanation: su means switch user. To switch from one user to another user with another user's environment and home directory use - option. Here switching to tux2 , then su - tux2 is answer.

QUESTION NO: 26
You logged in as user linux1, but now you want to switch users to linux2 with linux's environment. How would you do this?

A. su linux2
B. su -e linux2
C. su - linux2

D. su -m linux2
E. su -f linux2

Answer: C
Explanation: su means switch user. To switch from one user to another user with another user's environment and home directory use - option. Here switching to linux2 , then su - linux2 is answer.

Section 2, (1.103.2) Process text streams using filters (34 Questions)
Description: Candidates should be able to apply filters to text streams. Tasks include sending text files and output streams through text utility filters to modify the output, and using standard UNIX commands found in the GNU textutils package.
Key files, terms, and utilitiesinclude:
cat
cut
expand
fmt
head
join
nl
od
paste
pr
sed
sort
split
tac
tail
tr
unexpand
uniq
wc

QUESTION NO: 1
Which of these commands would report how many total accounts (including special accounts) there are?

A. `count /etc/passwd`
B. `nl /etc/passwd | head`
C. `wc --users /etc/passwd`

D. `wc --lines /etc/passwd`
E. `expand --lines /etc/passwd`

Answer: D
Explanation: wc command displays the number of lines, words and characters.
wc filename : prints number of lines, words and characters.
wc -l or --lines filename : prints the number of lines in file.
wc -w or --words filename : prints the number of words in file.
wc -c filename : prints the number of characters in file.

QUESTION NO: 2
What does the following command do?
cat '$TEST'

A. Displays a bash syntax error message.
B. Displays the contents of the file named $TEST if it exists.
C. Waits for the user to enter text and then echos the text back.
D. Displays the contents of the file named inside the back quotes.
E. Displays the contents of the named by the environment variable TEST.

Answer: B
Explanation: Varaible is called the memory location containing the value. In linux we can read the value of variable starting by $ symbol at starting of variable name.
Example: FILENAME=test.txt
echo $FILENAME : Displays the value of variable FILENAME
cat $FILENAME : Displays the contents of file of $FILENAME

QUESTION NO: 3
file1 and file2 are text files in your local directory.
file1 contains this:

allan
bart
ceasar
file2 contains this:
alicia
beatrice

Cecilia

What would the output of the following command be?
tac file1 file2

A. allan/ bart/ ceasar/ alicia/ beatrice/ cecilia
B. alicia/ beatrice/ cecilia/ allan/ bart/ ceasar
C. alicia/ beatrice/ cecilia/ ceasar/ bart/ allan
D. cecilia/ beatrice/ alicia/ ceasar/ bart/ allan
E. ceasar/ bart/ allan/ cecilia/ beatrice/ alicia

Answer: E
Explanation: tac command concatenate and print files in reverse order.
Example:
file1 contains :
a
b
c
and file2 contains
1
2
3
if you use tac file1 file2
Output is like:
c
b
a
3
2
1

QUESTION NO: 4
Which of the following would copy the file file1.txt to tile2.txt?

A. cp file1.txt | file2.txt
B. cat file1.txt | file2.txt
C. cat file1.txt > file2.txt
D. copy file1.txt | file2.txt
E. cat | file1.txt |file2.txt

Answer: C
Explanation: We can redirect the standard output into the file using the redirect (>) symbol.
Example: ls -l >result : Redirects the standard output of ls -l command into the result file.
Similarly cat redirect the contents of one file into another.
cat file1 >file2 : cat reads the contents of file1 and creates the new file file2, which contains the text of file1.
Similarly you can append into the existing file using append (>>) symbol.

QUESTION NO: 5
What command would help you identify the I/O address range being used by the network card?

A. cat/proc/modules
B. cat/proc/devices
C. cat/proc/meminfo
D. cat/io/dma
E. cat /proc/ioports

Answer: E
Explanation: /proc is called the virtual file system, which contains the information about the running kernel.
/proc/ioports file contains the I/O address range being used by the network card.
When you read the file /proc/ioports :
d800-d8ff : 8139too : Where 8139too is the module of Realtek Ethernet card.

QUESTION NO: 6 CORRECT TEXT
Type the command will identify the io address range used by a NIC?

Answer: cat /proc/ioports
Explanation: /proc is called the virtual file system, which contains the information about the running kernel.
/proc/ioports file contains the I/O address range being used by the network card.

When you read the file /proc/ioports :
d800-d8ff : 8139too : Where 8139too is the module of Realtek Ethernet card.

QUESTION NO: 7
What is the result of the following command?

```
# cat 'echo "$TESTKING
```

a) A syntax error
b) The value of $TESTKING
c) cat followed by the value of $TESTKING
d) echo followed by the value of $TESTKING
e) echo followed by $TESTKING

Answer: A
Explanation: Varaible is called the memory location containing the value. In linux we can read the value of variable starting by $ symbol at starting of variable name.
Example: TESTKING=test.txt
echo $TESTKING : Displays the value of variable TESTKING
cat $TESTKING : Displays the contents of file of $TESTKING
In question ' is started which is incorrect syntax.

QUESTION NO: 8
To convert all uppercase letters in stream to lowercase, pipe the stream into which command:

A. tr A-Z a-z
B. tac A-Z a-z
C. sed /A-Z a-z
D. sed -tolower
E. conv [A-Z] [a-z]

Answer: A
Explanation: tr command translate the characters, that is given ranges of characters, any time a character in range 1 is found, it is translated into the equivalent character in range 2.
Example:

tr 'a-z' 'A-Z' <test.txt : Which translates all characters of test.txt file from lower to upper.

QUESTION NO: 9
Which of the following command would most likely be used to output a file in reverse? Choose TWO correct answers.

A. tac
B. pr
C. rev
D. sed
E. back

Answer: A, B
Explanation: tac command concatenate and print files in reverse order.
Example:
file1 contains :
a
b
c
and file2 contains
1
2
3
if you use tac file1 file2
Output is like:
c
b
a
3
2
1
pr command reformat the text for printing.

QUESTION NO: 10 CORRECT TEXT

You have a file with the following contents:

```
allan

bart

ceasar

alicia

beatrice

cecilia
```

What single command could you use to list the file contents in reverse order? (Include only the command without options or arguments)

Answer: tac
Explanation: tac command concatenate and print files in reverse order.
Example:
file1 contains :
a
b
c
and file2 contains
1
2
3
if you use tac file1 file2
Output is like:
c
b
a
3
2
1

QUESTION NO: 11 CORRECT TEXT
You have a file with the following contents:
allan
bart

ceasar
alicia
beatrice
Cecilia

What single command could you use to list the file contents in reverse order? Please include only the command without options or arguments.

Answer: tac
Explanation: tac command concatenate and print files in reverse order.
Example:
file1 contains :
a
b
c
and file2 contains
1
2
3
if you use tac file1 file2
Output is like:
c
b
a
3
2
1

QUESTION NO: 12
What command will easily convert tabs in files to spaces?

A. convert
B. expand
C. tr
D. sed
E. None of the above

Answer: B

Explanation: expand command convert the tabs into the spaces.
Example:
expand -t1 <a : Which converts the tab into one space of file a.

QUESTION NO: 13
Which of the following would do the same as the command cat < file1.txt > file2.txt?

A. cat < file1.txt file2.txt
B. cat file1.txt >file2.txt
C. cat <file1.txt | file2.txt
D. cat file 1.txt | file2.txt
E. cp file1.txt>file2.txt

Answer: B
Explanation: cat file1.txt >file2.txt cat command takes input from the file file1 and redirect the output into the file file2 which is similar to cat <file1.txt >file2.txt.

QUESTION NO: 14
Which of the commands will show you only the middle 10 lines of a 30 line text file named textfile?

A. head -n 11-20 textfile
B. head -n 20 textfile | tail
C. tail -n 11-20
D. cat textfile | pr -n 11-20
E. nl -n 11-30 textfile

Answer: B
Explanation: head command displays default 10 lines from the top of file and tail displays the default 10 lines from the bottom of file.
To display the custom number of lines:
head -n 20 filename

To displays the contents of file from middle:
head -n 20 a | tail : displays middle 10 lines

head -n 30 a | tail : displays middle 10 lines from 20-30.

QUESTION NO: 15
Which command will display in reverse order a file that is numbered from 1 to End of File?

A. cat file | nl | pr
B. cat file | nl | tac
C. cat file | tac | nl
D. cat file | pr -n | reverse
E. None of the above

Answer: B
Explanation: nl command number lines of files.
cat filename | n1 | tac : display in reverse order of file that is numbered from 1 to end of file.

QUESTION NO: 16
What command will show the first 10 lines of a file by default?

A. head
B. cat
C. tac
D. nl
E. tail

Answer: A
Explanation: head command by default displays 10 lines from the top of file and tail command by default display 10 lines from the bottom of file.
head -n or --lines 20 filename : Displays 20 lines from the top of file.

QUESTION NO: 17
What command will show the last 10 lines of a file by default?

A. tail
B. head
C. cat
D. prstat
E. ps

Answer: A
Explanation: head command by default displays 10 lines from the top of file and tail command by default display 10 lines from the bottom of file.
tail -n or --lines 20 filename : Displays 20 lines from the top of file.

QUESTION NO: 18
Your lead sysadmin has asked you to add a second NIC to a Linux machine.
Which of the following commands would be best to determine which interrupts are currently in use on this machine?

A. `cat /proc/ioports`
B. `cat /proc/interrupts`
C. `cat /proc/memoryinfo`
D. `which interrupts`
E. `tail /var/log/messages`

Answer: B
Explanation: The Linux /proc Directory is a Virtual Filesystem provided by linux kernel. /proc contains files and directories that let system administrators and programmers access system information.
The file /proc/interrupts file contains information on interrupts and IRQs. First Ethernet card device name is eth0, second Ethernet card device name is eth1 ..., to identify that dev will conflict or not , see the contains of file. Already eth0 is appeared or not ?

Here is the output of /proc/interrupts
CPU0
0: 380893 XT-PIC timer
1: 843 XT-PIC i8042
2: 0 XT-PIC cascade
5: 0 XT-PIC uhci_hcd
8: 1 XT-PIC rtc
11: 48 XT-PIC Intel 82801AA-ICH, eth0

14: 6086 XT-PIC ide0
NMI: 0
ERR: 0

For a multi-processor machine, this _le may look slightly different:

```
CPU0 CPU1
0: 1366814704 0 XT-PIC timer
1: 128 340 IO-APIC-edge keyboard
2: 0 0 XT-PIC cascade
8: 0 1 IO-APIC-edge rtc
12: 5323 5793 IO-APIC-edge PS/2 Mouse
13: 1 0 XT-PIC fpu
16: 11184294 15940594 IO-APIC-level Intel EtherExpress Pro
10/100 Ethernet
20: 8450043 11120093 IO-APIC-level megaraid
30: 10432 10722 IO-APIC-level aic7xxx
31: 23 22 IO-APIC-level aic7xxx
NMI: 0
ERR: 0
```

Appeared Number of CPU, Number of Ethernet card.

QUESTION NO: 19
Which of the following will copy file1.txt to file2.txt? Choose Two.

A. cat file1.txt > file2.txt
B. cat file1.txt | file2.txt
C. cp file1.txt > file2.txt
D. cp file1.txt file2.txt
E. cpio < file1.txt > file2.txt

Answer: A, D
Explanation: We can redirect the standard output into the file using the redirect (>) symbol.
Example: ls -l >result : Redirects the standard output of ls -l command into the result file.
Similarly cat redirect the contents of one file into another.
cat file1 >file2 : cat reads the contents of file1 and creates the new file file2, which contains the text of file1. cp (copy) command also copy the file.
Similarly you can append into the existing file using append (>>) symbol.

QUESTION NO: 20
What utility would use to remove/display columns from each line of a file?

A. pwd
B. col
C. cut
D. tail
E. extract

Answer: C
Explanation: cut command displays the specific column from the text file.
Example: cut -d: -f 1 /etc/passwd : Displays the first column from the file /etc/passwd where -d means delimeter and -f means field number.

QUESTION NO: 21
After executing the following command line, what will be the contents of the file `myout.txt`?

```
echo \"test king\" | cat > myout.txt
```

A. Test kinG
B. "test king"
C. test king cat
D. the file is empty

Answer: B
Explanation: The contents of myout.txt will be testking.
echo command displays into the standard output and cat command redirects the output of echo into the file myout.txt

QUESTION NO: 22 CORRECT TEXT
You wish to cut the 3rd and 7th fields from a colon (:) delimited text file called 'mytestking' and display them on the screen. Type the command that would do this?

-

Answer: cut -d : -f 3,7 mytestking
Answer: cut -d: -f3,7 mytestking
Answer: cut -f3,7 -d: mytestking
Answer: cut -f 3,7 -d : mytestking
Explanation: cut command displays the specific column from the text file.
Example: cut -d: -f 1 /etc/passwd : Displays the first column from the file /etc/passwd where -d means delimeter and -f means field number. To display the contents of multiple column, comma separator can use.

QUESTION NO: 23 CORRECT TEXT
What command returns the first few lines of a given file?

Answer: head
Explanation: head command displays the few lines from the top of file. By default displays 10 lines.
Example: head myfile
head -n or --lines 20 myfile

QUESTION NO: 24 CORRECT TEXT
What command is used to display a file in octal format?

Answer: od
Explanation: od command displays the contents of file into octal format.
Example: od filename

QUESTION NO: 25 CORRECT TEXT
You need to replace all instances of the word testking with TestKing in a file called file.txt, and send the output to a file named testking.txt. Type the simplest command string to accomplish this.

Answer: sed 's/testking/TestKing/g' file.txt > testking.txt
Explanation: sed also called the stream editor, generally use for find and replace. sed 's/testking/TestKing/g' file.txt >testking.txt means search the testking and replace into TestKing globally and redirects the replced output into testking.txt file.

QUESTION NO: 26 CORRECT TEXT
You want to redirect the last 30 lines of a file to another file.
What single command would best fit your needs?

Answer: tail
Explanation: tail command displays the few lines from the bottom of file. By default it displays the 10 lines.
Example
tail filename
tail -n 30 filename >anotherfilename : Redirects the last 30 lines into another file.

QUESTION NO: 27
Which line below would count the total number of lines with the word "testking" in `/var/log/maillog`?

A. `wc -l 'testking /var/log/maillog'`
B. `for "testking" in [maillog (count) +1]`
C. `wc -l /var/log/maillog | grep 'testking'`
D. `cat /var/log/maillog | grep 'testking' | wc -l`
E. `cat /var/log/mailog | grep 'testking' | wc -r`

Answer: D
Explanation: grep command displays the lines matching the criteria.
Example: grep root /etc/passwd : displays all lines having root pattern.
Wc command counts the lines, words and characters into the file.
Example: wc filename : displays number of lines, words and characters
wc -l filename : displays only the number of lines from the file.
Were Pipe symbol helps to combine the command, which sends the output of first command as input to second command.

Answer D is correct because cat reads the contents of /var/log/maillog and sends the standard output to grep command, g rep command filters the output only the lines having testking pattern sends to wc which counts the number of lines containing the testking pattern.

QUESTION NO: 28
To prevent a command run as root from sending both standard out (stdout) and standard error (stderr) to any terminal or other file or device, which of the following strings should be appended to the command?

A. >/dev/null
B. >/dev/null 1>&2
C. >/dev/null 2>&1
D. 1>&2 >/dev/null
E. 2>&1 >/dev/null

Answer: C
Explanation:
Command> file à Redirect the standard Output to file.
Command>>file à Append the standard output to file.
Command<file à Takes input from the File.
Command 2>file à Redirect the standard error to file.
Command 2>>file àAppend the Standard Error to file.

QUESTION NO: 29
Which of the following sed commands will replace all instances of the string foo with the string foobar changing the file file1.txt in place?

A. sed 's/foo/foobar/g' file1.txt
B. sed 's/foo/foobar/g' file1.txt > file1.txt
C. sed 's/foo/foobar/g' file1.txt | file1.txt
D. sed -i 's/foo/foobar/g' file1.txt
E. sed -i 's/foo/foobar/g' file1.txt > file1.txt

Answer: A
Explanation:

sed called Stream Editor, usually used to search and replace the string pattern in file.
Syntax: sed 's/whattofind/replacewith/globally' filename
Example: sed 's/cat/dog/g' test àIt will replace all cat occurance to dog fron test file.

QUESTION NO: 30
What command will print a list of usernames (first column) and their corresponding user id (uid, third column) from /etc/passwd?

A. cut -d: -f 1,3 /etc/passwd
B. chop -c 1,3 /etc/passwd
C. tac 1-3 /etc/passwd
D. fmt -u /etc/passwd

Answer: A
Explanation: Cut command helps to display certain fields value from file. In cut command -d option is used to specify the filed delimiter and -f specify the filed number.

QUESTION NO: 31
What command will remove duplicate lines from a sorted file?

A. filter
B. trim
C. uniq
D. wc

Answer: C
Explanation: uniq - remove duplicate lines from a sorted file

QUESTION NO: 32

You have a text file with tab-separated values, but your application needs them space-separated. What command would you use from the Bash shell to achieve this? Please fill in the command only, without any options.

Answer: expand
Explanation: The expand command is used to convert from tab to space.
Example: expand -t 2 test à It will convert the tab into two spaces.

QUESTION NO: 33
Which command is used to dump files in octal format?

A. od
B. octdump
C. dumpoct
D. cat -o

Answer: A
Explanation: Answer A is correct. od command dump files in octal and other formats. Example: od test it will display the all contents of file in octal format.

QUESTION NO: 34
You enter the command date +%M. Wat does the output show you?

A. the current year
B. the current month
C. the current hour
D. the current minute
E. the current second

Answer: D
Explanation: date command displays the current date and time information as well as we can set new date and time to system by supplying -s option.
To display time: date +%T
To display Minute: date +%M
To display Month : date +%m
```
%% a literal %
```

```
%a locale's abbreviated weekday name (Sun..Sat)

%A locale's full weekday name, variable length (Sunday..Saturday)

%b locale's abbreviated month name (Jan..Dec)

%B locale's full month name, variable length (January..December)

%c locale's date and time (Sat Nov 04 12:02:33 EST 1989)

%C century (year divided by 100 and truncated to an integer)
[00-99]

%d day of month (01..31)

%D date (mm/dd/yy)

%e day of month, blank padded ( 1..31)

%F same as %Y-%m-%d

%g the 2-digit year corresponding to the %V week number

%G the 4-digit year corresponding to the %V week number

%h same as %b

%H hour (00..23)

%I hour (01..12)

%j day of year (001..366)

%k hour ( 0..23)

%l hour ( 1..12)

%m month (01..12)

%M minute (00..59)
```

%n a newline

%N nanoseconds (000000000..999999999)

%p locale's upper case AM or PM indicator (blank in many locales)

%P locale's lower case am or pm indicator (blank in many locales)

%r time, 12-hour (hh:mm:ss [AP]M)

%R time, 24-hour (hh:mm)

%s seconds since â□□00:00:00 1970-01-01 UTCâ□□ (a GNU extension)

%S second (00..60); the 60 is necessary to accommodate a leap second

%t a horizontal tab

%T time, 24-hour (hh:mm:ss)

%u day of week (1..7); 1 represents Monday

%U week number of year with Sunday as first day of week (00..53)

%V week number of year with Monday as first day of week (01..53)

%w day of week (0..6); 0 represents Sunday

%W week number of year with Monday as first day of week (00..53)

%x locale's date representation (mm/dd/yy)

%X locale's time representation (%H:%M:%S)

%y last two digits of year (00..99)

%Y year (1970...)

%z RFC-2822 style numeric timezone (-0500) (a nonstandard extension)

```
%Z time zone (e.g., EDT), or nothing if no time zone is deter-
minable
```

Section 3, (1.103.3) Perform basic file management (16 Questions)

Description: Candidates should be able to use the basic UNIX commands to copy, move, and remove files and directories. Tasks include advanced file management operations such as copying multiple files recursively, removing directories recursively, and moving files that meet a wildcard pattern. This includes using simple and advanced wildcard specifications to refer to files, as well as using find to locate and act on files based on type, size, or time.

Key files, terms, and utilitiesinclude:

cp
find
mkdir
mv
ls
rm
rmdir
touch

file globbing

QUESTION NO: 1

Which of the following commands can you use to rename a file in Linux?

A. n
B. mv
C. new
D. rm

Answer: B

Explanation: mv command is used to move as well as to rename the file.

Example:
mv file1 file2 : Which renames the file1 to file2.
mv file1 /tmp : Which moves the file file1 into /tmp
mv file1 /tmp/file2 : Which moves as well as rename the file file1

QUESTION NO: 2

What dose the command cd~foo do?

A. It will take you to the ~foo directory.
B. It will create the foo directory and change to it
C. It will take you to the home directory of the user "foo"
D. It will change the directory to the system foo directory.
E. It will change to the foo directory in your home directory.

Answer: C
Explanation: ~ symbol represents the user's home directory.
Example: cat ~/test.txt : Which reads the file resident in user's home directory.
cd ~/foo : Which enters into the foo directory resident into the user's home directory.

QUESTION NO: 3
As root you have navigated to directory /B. You wish to move all of the files and directories from directory /A to directory /B. Which of the following options would be the most appropriate command line to execute this task?

A. cp /a/* .
B. mv -f /A/* .
C. mv -Rf /a/* .
D. cp -f /a/* ..
E. cp -rf /A/* /b/

Answer: B
Explanation: mv command is used to move as well as to rename the file.
Example:
mv file1 file2 : Which renames the file1 to file2.
mv file1 /tmp : Which moves the file file1 into /tmp
mv file1 /tmp/file2 : Which moves as well as rename the file file1
-f option of mv command is used for forcely move.

QUESTION NO: 4
One of the lines in the output from the command 'ls -l/home/pomes' is:
drwxrwsr-x 3 devel poms 1024 Oct 22 16:28 foo
The output from the command groups bubba is:

bubba : bubba poms acts

If user bubba executes the command touch/home/poms/foo/bar, which TWO of the following must be true?

A. The group for /home/poms/foo/bar will be poms.
B. The owner for /home/poms/foo/bar will be devel
C. The owner for /home/poms/foo/bar will be bubba.
D. The group for /home/poms/foo/bar will be bubba.
E. The permissions for /home/poms/foo/bar will allow group read.

Answer: A, C
Explanation: See carefully on output that, SGID bit is set on directory and group owner of that directory is poms. When SGID bit is set on directory, automatically all new creating files/directories group owner is same as parent directory means same as foo.
To set the SGID bit:
chmod g+s directory
To Remove the SGID bit:
chmod g-s directory

So, when bubba user executes the touch /home/poms/foo/bar the group owner automatically poms and owner user is that user who executed the command means bubba.

QUESTION NO: 5
Which command removes all subdirectories in `/tmp`, regardless of whether they are non-existent or in use?

A. del /tmp/*
B. m -rf /tmp
C. rm -Ra /tmp/*
D. rm -rf /tmp/*
E. delete /tmp/*,*

Answer: D
Explanation: rm command removes the files/directorires.
Syntax: rm [options] file/directory
-f : forcely
-r : Recursively

-i : Interactively.
rm -rf /tmp/* : Which removes all files as well as directories forcely from /tmp directory.

QUESTION NO: 6
A directory contains the following files:

```
#ls
ratas saran jacaw cabal cabin
```

You issue the command "ls | grep .a[^b]a.", what files are returned by the command? Choose all that apply.

A. ratas
B. jacaw
C. saran
D. cabal
E. cabin

Answer: A, B, C
Explanation: Remember the wildcard Character in string processing
* : Zero or more character
. : Any Single Character
[a-z] : Any single Character from the range
[^a-z] : Any single Character except from the range
ls | grep .a[^b]a. means that word having five characters, starting with any character but a should be in second position, third position shouldn't be b and fourth character should be a and any single character in fifth position.
grep command is use to process the string with different pattern.

QUESTION NO: 7
You need to display all files in the current directory that start with a "a" and end with a "v", regardless of their length or use of delimiters. Choose the best answer.

A. ls a*v
B. ls a.v

C. ls a-v
D. ls [a-v]

Answer: A
Explanation: Wildcard characters :

* Zero or more character
? Any Single Character
[a-z] Any Single Character from the range
[^a-z] Any Single Character except from the range
ls a*v means list all files/directories starting with a character and ended with v character.

QUESTION NO: 8
You want to move all files in /dir1 to /dir2 that begin with a and end with v. What is the correct command to do this?

A. mv /dir1/a*v /dir2
B. mv -r /dir1/a.v /dir2
C. move /dir1/a?v /dir2
D. ls a*v | cp /dir2
E. mv /dir1/[a-v] /dir2

Answer: A
Explanation: Wildcard characters :

* Zero or more character
? Any Single Character
[a-z] Any Single Character from the range
[^a-z] Any Single Character except from the range
mv /dir1/a*v /dir2 means all the contents of /dir1 starting name with a character and ended with v character will move into the /dir2 directory.

QUESTION NO: 9 CORRECT TEXT

You wish to copy the full contents of the /home/tess directory and all subdirectories to the /home/king directory.

Type in the simplest command to do this.

Answer: cp -r /home/tess/* /home/king
Explanation: cp command copies files/directorires.
Syntax: rm [options] file/directory
-f : forcely
-r : Recursively
-i : Interactively.
cp -r /home/tess/* /home/king : Which copy all the contents of /home/tess into the /home/king.

QUESTION NO: 10 CORRECT TEXT
You wish to move all files and directories from within /home/john to the directory /home/tessking.

Type in the command line that would do this?

Answer: mv /home/john/* /home/tessking
Answer: mv /home/john/* /home/tessking/
Explanation: mv command is used to move as well as to rename the file.
Example:
mv file1 file2 : Which renames the file1 to file2.
mv file1 /tmp : Which moves the file file1 into /tmp
mv file1 /tmp/file2 : Which moves as well as rename the file file1
mv /home/john/* /home/tessking : Moves all the contents of /home/john into /home/tessking.

QUESTION NO: 11 CORRECT TEXT
What command will remove all files named core in the home directories of users (/home), that are more than 7 days old? Type in the simplest command that would do this, without any prompting to delete the files.

Answer: find /home -mtime +7 -name core -exec rm -f {} \;
Explanation: To search the files or directories, we use the find or locate command where locate command search on it's database but faster than find command. find command searches the files/directories in different condition but accurate than locate command.
Syntax for find command:
find path condition action
Example: find /etc -name passwd : Search files or directories in /etc named passwd.
Similarly you can use other options:
-atime : Access Time
-mtime : Modified Time
-ctime : Change Time
-name or -iname : According to file name
-type : According to file type
Action in find command can start from -exec command.
Example: find /tmp -type f -exec rm {} \; : Which search all normal files and remove it.
find /home -mtime +7 -name core -exec rm -f {} \; : Which searches files named core more than 7 days old and removes that file.

QUESTION NO: 12
Which of the following commands will duplicate the contents of the /A directory in the existing and empty /B directory?

A. mv /A/* /B
B. mv /A/ /B
C. mv /A /B
D. mv /A/* .

Answer: A
Explanation: mv command is used to move as well as to rename the file.
Example:
mv file1 file2 : Which renames the file1 to file2.
mv file1 /tmp : Which moves the file file1 into /tmp
mv file1 /tmp/file2 : Which moves as well as rename the file file1
mv /home/john/* /home/tessking : Moves all the contents of /home/john into /home/tessking.

QUESTION NO: 13 CORRECT TEXT
What command takes you to your home directory without using a path?

Answer: cd ~
Explanation: ~ symbol represents the user's home directory. cd ~ command enters into the user's home directory. Similalry cat ~/test.txt displays the contents of test.txt resident into user's home directory.

QUESTION NO: 14
What will the command cd ~ do?

A. Take you to the ~ directory
B. Take you to the sys directory.
C. Take you to your home directory.
D. Nothing, this command is invalid.

Answer: C
Explanation: ~ symbol represents the user's home directory. cd ~ command enters into the user's home directory. Similalry cat ~/test.txt displays the contents of test.txt resident into user's home directory.

QUESTION NO: 15
What will the command cd ~testking do?

A. Changes directory to the user testking's home directory
B. Changes to a directory named testking in the current user's home directory
C. Changes to directory /etc/testking
D. Produces a syntax error
E. None of the above

Answer: A
Explanation: ~ symbol represents the user's home directory. cd ~ command enters into the user's home directory. Similalry cat ~/test.txt displays the contents of test.txt resident into user's home directory.

QUESTION NO: 16
You need to create a simple hierarchy of directories: images/photos/summer/ottawa/. None of the directories on that path exists. What command will create all of the needed directories in one step?

A. mkdir -r images/photos/summer/ottawa/
B. mkdir -R images/photos/summer/ottawa/
C. mkdir -p images/photos/summer/ottawa/
D. mkdir -P images/photos/summer/ottawa/
E. mkdir -m images/photos/summer/ottawa/

Answer: C
Explanation: -p options means no error if existing, make parent directories as needed. It will creates the directory images/photos/summer/Ottawa. Where images is the parent directory of photos, photos is the parent directory of summer etc.

Section 4, (1.103.4) Use streams, pipes, and redirects (11 Questions)

Description: Candidates should be able to redirect streams and connect them in order to efficiently process textual data. Tasks include redirecting standard input, standard output, and standard error, piping the output of one command to the input of another command, using the output of one command as arguments to another command and sending output to both stdout and a file.

Key files, terms, and utilitiesinclude:
tee
xargs
<
<<
>
>>
|
` `

QUESTION NO: 1 CORRECT TEXT
To send input to both stdout AND a file, you use the _____ command.

Answer: tee
Explanation: tee command redirect output to a file while still piping it to another program.
Example: set | tee set.out | less : In example, output from set is written to file set.out while also being piped to less.

QUESTION NO: 2
To change all lower case characters in a file to upper case, pick the correct command. Select all that apply.

A. tr 'a-z' 'A-Z' file
B. tr [a-z] [A-Z] < file
C. tr "a-z" "A-Z" file
D. tr 'a-z' 'A-Z' < file
E. tr {a-z} {A-Z} > file

Answer: B, D
Explanation: tr command is used to translate the character.
Example: tr 'a-z' 'A-Z' <test.txt : Which translate all characters in test.txt into upper case and displays in standard output but no effect into the original file. So, B and D both answer are correct.

QUESTION NO: 3
What does the command "foo < bar | foobar" do?

A. foo reads bar as stdin, pipes output to foobar
B. foo and bar are fed to foobar as stdin
C. foo's output is sent to bar, output is written to foobar
D. None of the above

Answer: A
Explanation: Common Redirection Operators
Command >file : Redirects standard output of command into the file
Command>>file : Append the standard output of command into the file
Command<file : Takes input from file rather than keyboard

Command 2>file : Redirects the standard Error into the file
And Pipe (|) is used to combine the command, in piping outout of first command goes as input to the second command.
Answer A is correct because foo command takes input from the bar file and sends the standard output to foobar command.

QUESTION NO: 4
In the command 'test < king | testking'.

A. The stdout from the command testking is saved to the file test.
B. The stdout from the command test is saved to the file testking.
C. The command testking receives its stdin from the stderr of test.
D. The command testking receives its stdin from the stdout of test.
E. The command king receives its stdin from the contents of the file testking.

Answer: D
Explanation: Common Redirection Operators
Command >file : Redirects standard output of command into the file
Command>>file : Append the standard output of command into the file
Command<file : Takes input from file rather than keyboard
Command 2>file : Redirects the standard Error into the file
And Pipe (|) is used to combine the command, in piping outout of first command goes as input to the second command.
Answer D is correct because test command takes input from the king file and sends the standard output to testking command.

QUESTION NO: 5 CORRECT TEXT
You are writing a script to automate some tasks. You would like to be able to have a log of everything that you see printed to your console, yet you want to be able to see the output on the console as well.
What textutils command would typically be used to accomplish this?

Answer: tee
Explanation: tee command redirect output to a file while still piping it to another program.

Example: set | tee set.out | less : In example, output from set is written to file set.out while also being piped to less.

QUESTION NO: 6
You need to have all the output from the executable myprog written to a text log named file1.out. This program must not send any output to the console. Which of the commands listed will accomplish this?

A. myprog > file1.out 2>&1
B. myprog > file1.out 1>&2
C. myprog > file1.out 1> /dev/null
D. myprog 1&2> file1.out
E. myprog 1> /dev/null > file1.out

Answer: A
Explanation: Common Redirection Operators
Command >file : Redirects standard output of command into the file
Command>>file : Append the standard output of command into the file
Command<file : Takes input from file rather than keyboard
Command 2>file : Redirects the standard Error into the file
And Pipe (|) is used to combine the command, in piping outout of first command goes as input to the second command.
When we executes the command it generates the standard output as well as standard error and displays in standard output (Terminal Window) is default. When we redirect the standard error as well as standard output into the file, it will not send any output into the terminal window.
myprog >file1.out 2>&1 : Where & works as a Logical AND Operator.

QUESTION NO: 7
What does the following command's characters do?

```
# cmd > file.out 2>&1
```

A. Sends the stdout of cmd to file.out
B. Sends the stdout and stderr of cmd to file.out
C. Sends the stderr to the bit bucket and stdout of cmd to file.out

D. None of the above

Answer: B
Explanation: Common Redirection Operators
Command >file : Redirects standard output of command into the file
Command>>file : Append the standard output of command into the file
Command<file : Takes input from file rather than keyboard
Command 2>file : Redirects the standard Error into the file
And Pipe (|) is used to combine the command, in piping outout of first command goes as input to the second command.
When we executes the command it generates the standard output as well as standard error and displays in standard output (Terminal Window) is default. When we redirect the standard error as well as standard output into the file, it will not send any output into the terminal window.

QUESTION NO: 8
What command can be used to print out system boot messages?

A. bootm
B. bmsg
C. messages
D. dmesg

Answer: D
Explanation: dmesg command prints the boot messages, you can check which devices are detected by your kernel or not from the boot log messages.

QUESTION NO: 9
What is the result of the following command?

```
command > file1.out 2>&1
```

A. Redirects stderr to file1.out
B. Redirects the stderr to the same location as the stdout.
C. Redirects stdout to the screen and stderr to file.out
D. Redirects all the output to the same location as the stderr

Answer: B
Explanation: Common Redirection Operators
Command >file : Redirects standard output of command into the file
Command>>file : Append the standard output of command into the file
Command<file : Takes input from file rather than keyboard
Command 2>file : Redirects the standard Error into the file
And Pipe (|) is used to combine the command, in piping outout of first command goes as input to the second command.
When we executes the command it generates the standard output as well as standard error and displays in standard output (Terminal Window) is default. When we redirect the standard error as well as standard output into the file, it will not send any output into the terminal window.

QUESTION NO: 10
You set a variable's value with the command "export TEST=snuffy" and then after executing the following script file, you type the command "echo $TEST".

```
scriptfile1
 #!/bin/bash
 USER=tessking
 TEST=$USER
```

What is the variable's value that is returned?

a) snuffy
b) tessking
c) empty
d) variable undeclared
e) TEST

Answer: A
Explanation: Export sets the shell variable named TEST to snuffy.

QUESTION NO: 11 CORRECT TEXT
You wish to send the output of a command to standard output (stdout) and save it to a file. The command to use is _____. (Do not specify arguments)

Answer: tee
Explanation: I want to show you one example, set | tee set.out | less. Here set command generates the output and gives as an input to tee command. tee command saves the output of set into set.out as well piping the output to less.

QUESTION NO: 12
In order to append the output of ls to a file called result, which of the following command lines would you use?

A. ls > result
B. ls >& result
C. ls &> result
D. ls >> result

Answer: D
Explanation:
> will save the output to result
>> will append the output to result
>& will copy the output to result

Subsection 1, SYSLOGD (21 Questions)

QUESTION NO: 1

Which daemon will send kernel alert messages?

A. alertd
B. smtpd
C. klogd
D. syslogd

Answer: C
Explanation: There are two services klogd and syslogd, klogd provides the kernel lo message and syslogd provides the system log messages. Both services are controlled by syslog.

QUESTION NO: 2
Which of the following syslog.conf entries would cause kernel error messages to be sent to the system console?

A. kern warning console
B. kern.error console
C. kern.warning /dev/console
D. kern error console

Answer: C
Explanation: /etc/syslog.conf is the syslog configuration file, where we specified the facility and priority to send the facility related log messages to specified file.
kernel.warning /dev/console : this line sends the warning related to kernel into /dev/console.

QUESTION NO: 3
What syslog.conf facility represents the cron daemon?

A. crond
B. daemon
C. cron
D. crontab

Answer: C
Explanation: You can see in /etc/syslog :
Cron.* /var/log/cron
This line represents that cron related all log messages will write into /var/log/cron file.

QUESTION NO: 4
What syslog.conf facility represents kernel processes?

A. user
B. proc
C. daemon

D. kern

Answer: D
Explanation: kern facility represents the kernel processes, in first line of /etc/syslog.conf file, you can see kern.* /dev/console, this means all kernel related log messages will send to /dev/console.

QUESTION NO: 5
What syslog.conf facility represents Unix to Unix copy?

A. ucp
B. copy
C. uucp
D. uuc

Answer: C

Explanation: Facility in /etc/syslog.conf can be auth, authpriv, cron, daemon, kern, lpr, mail, mark, news, security, syslog, user, uucp and local0. Where uucp facility represents Unix to Unix copy.

QUESTION NO: 6
What syslog.conf facility represents user authentication processes?

A. auth
B. proc
C. user
D. login

Answer: A
Explanation: auth facility represents the user authentication processes, and authentication related logs will send to /var/log/secure.

QUESTION NO: 7
What syslog.conf facility represents user processes?

A. auth
B. proc
C. user
D. u

Answer: C
Explanation: user facility represents the user processes Example:
User.* /var/log/userlogs : It sends all user processes logs into /var/log/userlogs file

QUESTION NO: 8
What syslog.conf facility is used to create timestamps in log files?

A. mark
B. stamp
C. time
D. tstamp

Answer: A
Explanation: You can see the timestamps on every log files this timestamps is genereated by mark facility.

QUESTION NO: 9
What is the name of the configuration file used by the syslog daemon?

A. syslog.conf
B. syslogd
C. slog.conf
D. system.conf

Answer: A
Explanation: /etc/syslog.conf is the main log configuration file reads by syslogd service. Which logs system messages on unix system.

QUESTION NO: 10
What syslog.conf facility represents login processes?

A. proc
B. login
C. user
D. auth

Answer: D
Explanation: auth is the facility which represents the login processes. Either local login or remote login, auth facilitiy traps the logs and writes into /var/log/secure file.

QUESTION NO: 11
What syslog.conf facility represents the line printer?

A. ptr
B. linep
C. lpr
D. lprinter

Answer: C
Explanation: Facility in /etc/syslog.conf can be auth, authpriv, cron, daemon, kern, lpr, mail, mark, news, security, syslog, user, uucp and local0. Where lpr is the facility for line printer.

QUESTION NO: 12
What daemon controls the syslog?

A. syslog
B. syslogd
C. logd

D. sys

Answer: B

Explanation: Syslogd provides two system utilities which provide support for system logging and kernel message trapping. Support of both internet and unix domain sockets enables this utility packages to support both local and remote logging.

QUESTION NO: 13
What syslog.conf facility represents mail processes?

A. proc
B. daemon
C. mail
D. smtp

Answer: C
Explanation: Facility in /etc/syslog.conf can be auth, authpriv, cron, daemon, kern, lpr, mail, mark, news, security, syslog, user, uucp and local0. Where mail facility represents the mail processes . By default mail logs are send to /var/log/maillog file.

QUESTION NO: 14
What syslog.conf facility represents user processes?

A. auth
B. proc
C. user
D. u

Answer: C
Explanation: user facility represents the user processes Example:
User.* /var/log/userlogs : It sends all user processes logs into /var/log/userlogs file

QUESTION NO: 15
What syslog.conf facility represents httpd processes?

A. http
B. daemon
C. smtp
D. proc

Answer: B
Explanation: daemon facility represent the httpd processes.

QUESTION NO: 16
Which of the following syslog.conf entries would cause kernel error messages to be sent to the system console?

A. kern warning console
B. kern.error console
C. kern.warning /dev/console
D. kern error console

Answer: C
Explanation: /etc/syslog.conf is the syslog configuration file, where we specified the facility and priority to send the facility related log messages to specified file.
kernel.warning /dev/console : this line sends the warning related to kernel into /dev/console.

QUESTION NO: 17
Which of the following syslog.conf entries would cause kernel warning messages to be sent to the system console?

A. kern.console warning
B. kern.warning /dev/console
C. kern.warning.console

D. kern warning console

Answer: B

Explanation: /etc/syslog.conf is the syslog configuration file, where we specified the facility and priority to send the facility related log messages to specified file.
kernel.warning /dev/console : this line sends the warning related to kernel into /dev/console.

QUESTION NO: 18
Which of the following syslog.conf entries would cause mail error messages to be sent to the system console?

A. mail error console
B. mail.err /dev/console
C. mail. error console
D. mail.err.console

Answer: B

Explanation: Syntax of /etc/syslog.conf is :
facility.priority : Where facility represents facility of service and priority represents the level of logs to store eg, info, err, emerg etc.

QUESTION NO: 19
What syslog.conf facility represents Usenet news?

A. usenet
B. news
C. uunet
D. net

Answer: B
Explanation: news represents Usenet news example:
Uucp,news.crit /var/log/spooler This line represents the logs of news to redirect into the /var/log/spooler log files.

QUESTION NO: 20
You have just added the following line to your syslog.conf file:
lpr.info /dev/console. But, line printer messages are not being sent to the console.
What is most likely the problem?

A. after modifying the syslog.conf file, the syslog daemon needs to be restarted.
B. the entry is formatted incorrectly
C. the syslog daemon reads it configuration information from the syslogd file

Answer: A
Explanation: syslog is the daemon, which reads /etc/syslog.conf configuration file.
After changing the configuration of syslog.conf you should restart the syslog service.
service syslog restart

QUESTION NO: 21
What syslog.conf facility represents miscellaneous daemons?

A. misc
B. proc
C. kern
D. daemon

Answer: D
Explanation: daemon facility represents the miscellaneous daemons like httpd, vsftpd etc

Section 5, (1.103.5) Create, monitor, and kill processes (29 Questions)

Description:

Candidates should be able to manage processes. This includes knowing how to run jobs in the foreground and background, bring a job from the background to the foreground and vice versa, start a process that will run without being connected to a terminal and signal a program to continue running after logout. Tasks also include monitoring active processes, selecting and sorting processes for display, sending signals to processes, killing processes and identifying and killing X applications that did not terminate after the X session closed.

Key files, terms, and utilitiesinclude:

&
bg
fg
jobs
kill
nohup
ps
top

QUESTION NO: 1
What will the command "kill -HUP 1354" do?

A. Kill the process 1354 destructively
B. Kill the process 1354, allowing cleanup of memory
C. Restart the process 1354, re-reading it's config files
D. Restart the process 1354, resetting it's associated modem

Answer: C
Explanation: kill command is used to terminate the processes by default it sends the TERM signal. When you send the -HUP signal, it will restart the process by reading the original configuration file.

QUESTION NO: 2
To keep a process running after you logged out, you start it with the command:

A. nohup
B. fg
C. live
D. sh

Answer: A
Explanation: nohup : run a command immune to hang-ups, with output to a non-tty, to keep the process running after you logged out.

QUESTION NO: 3
What will the command "kill -HUP 1354" do?

A. Kill the process 1354 destructively
B. Kill the process 1354, allowing cleanup of memory
C. Restart the process 1354, re-reading it's config files
D. Restart the process 1354, resetting it's associated modem

Answer: C
Explanation: kill command is used to terminate the processes by default it sends the TERM signal. When you send the -HUP signal, it will restart the process by reading the original configuration file.

QUESTION NO: 4 CORRECT TEXT
You have backgrounded a job called bigtestking. When you type jobs and the command line it comes back with the following info.

```
jobs
[1] Running job1
[2] - Running bigtestking
[3]+ Stopped job5
```

Type the command any switch(es) that would bring bigtestking to the foreground.

Answer: fg %2
Explanation: when you enter the command it runs on foreground, which means you can type the commands after completing only, this is called foregroup but when you run the command in background, it allows to run multiple commands on same shell.

bg jobid: which runs the jobs in background
fg jobid: Which runs the jobs in foreground.

QUESTION NO: 5
What is the result of the command:

```
# kill 9 13459
```

A. Kill PID 13459 with a signal 15
B. Kill PID 13459 with a signal 1
C. Kill PID 13459 with a signal 9
D. None of the above

Answer: D
Explanation: Kill usage is:
kill [-s signal | -p] [-a] [--] pid ...

QUESTION NO: 6
When executing a command that produces output to the screen, you get an exit code of 0. Choose the best description of what has happened

A. The program executed properly
B. The program encountered an error
C. The program requires more input
D. The program has returned standard input
E. The program terminated with a syntax error

Answer: A
Explanation: when you executes the program, it returns the exit code either 0 or 1-255. If returns the exit code 0 it means program executed successfully it it returns non-zero values it means error occurred during executing the program.

QUESTION NO: 7
What will the command "kill -HUP 1354" do? Select all the apply

A. The same as kill -9 1354

B. The same as kill 15 1354
C. The same as kill -15 1354
D. The same as kill -SIGHUP 1354
E. The same as kill -1 1354

Answer: D, E

Explanation: kill command is used to terminate the processes by default it sends the TERM signal. When you send the -HUP signal, it will restart the process by reading the original configuration file. It is same to -SIGHUP and -1 signal. If you want to display all the signal avaialbles just use the kill -l command.

QUESTION NO: 8
Which of the following commands sends an unclean and immediate kill signal to process ID (PID) 1555?

A. Kill 1555
B. Kill -1 1555
C. Kill -2 1555
D. Kill -9 1555
E. Kill -15 1555

Answer: D
Explanation: -9 is the powerfull signal, which sends an unclean and immediate kill signal to process ID.

QUESTION NO: 9
When the kill command is given with only the PID number of the process to kill (as in 'kill 1234'), this corresponds to which type of kill signal?

A. 2 (SIGINT)
B. 1 (SIGHUP)
C. 9 (SIGKILL)
D. 3 (SIGQUIT)
E. 15 (SIGTERM)

Answer: E
Explanation: When you send the kill command it by default sends the TERM signal.

QUESTION NO: 10
What is the disadvantage of using the command kill -9 ?

A. A core dump file will be created.
B. It affects the entire process group.
C. It makes excessive use of system resources.
D. The action can be blocked by buggy or malicious processes.
E. The affected process is unable to clean up before exiting.

Answer: E
Explanation: While killing the process, we can send the signal. By default kill command sends the TERM signal, to send -9 signal
#kill -9 PID
While killing the process using -9 signal it unable to clean up before exiting.

QUESTION NO: 11 CORRECT TEXT
The process bigtestking is out of control, and efforts to cleanly stop it fail.
You have executed a ps command and it displays the following info

```
PID TTY TIME CMD
3541 pts/0 10:10:10 bigtestking
3558 pts/0 00:00:00 ps
```

What command should you type to absolutely stop the runaway process?

Answer: kill -9 3541

Explanation: While killing the process, we can send the signal. By default kill command sends the TERM signal, to send -9 signal
#kill -9 PID

While killing the process using -9 signal it unable to clean up before exiting. When you use the -9 signal, it sends the sigkill signal. Other Avaialble signals are:
1) SIGHUP 2) SIGINT 3) SIGQUIT 4) SIGILL
5) SIGTRAP 6) SIGABRT 7) SIGBUS 8) SIGFPE
9) SIGKILL 10) SIGUSR1 11) SIGSEGV 12) SIGUSR2
13) SIGPIPE 14) SIGALRM 15) SIGTERM 17) SIGCHLD
18) SIGCONT 19) SIGSTOP 20) SIGTSTP 21) SIGTTIN
22) SIGTTOU 23) SIGURG 24) SIGXCPU 25) SIGXFSZ
26) SIGVTALRM 27) SIGPROF 28) SIGWINCH 29) SIGIO
30) SIGPWR 31) SIGSYS 34) SIGRTMIN 35) SIGRTMIN+1
36) SIGRTMIN+2 37) SIGRTMIN+3 38) SIGRTMIN+4 39) SIGRTMIN+5
40) SIGRTMIN+6 41) SIGRTMIN+7 42) SIGRTMIN+8 43) SIGRTMIN+9
44) SIGRTMIN+10 45) SIGRTMIN+11 46) SIGRTMIN+12 47) SIGRTMIN+13
48) SIGRTMIN+14 49) SIGRTMIN+15 50) SIGRTMAX-14 51) SIGRTMAX-13
52) SIGRTMAX-12 53) SIGRTMAX-11 54) SIGRTMAX-10 55) SIGRTMAX-9
56) SIGRTMAX-8 57) SIGRTMAX-7 58) SIGRTMAX-6 59) SIGRTMAX-5
60) SIGRTMAX-4 61) SIGRTMAX-3 62) SIGRTMAX-2 63) SIGRTMAX-1
64) SIGRTMAX

QUESTION NO: 12 CORRECT TEXT
What command or option will allow a program to continue operations after the invoking user has logged out of the system? Type just the answer.

Answer: nohup

Explanation: nohup : run a command immune to hang-ups, with output to a non-tty, to keep the process running after you logged out.

QUESTION NO: 13 CORRECT TEXT
You wish to see the processes that are taking up CPU resources and their PID numbers. Type in the command that would do this including the options/arguments to cause a refresh every second.

Answer: top -d 1
Alternative correct answers: top -d1
Explanation:

The top programs provides a dynamic real-time view of a running system. It can display system summary information as well as a list of tasks currently being mananged by the linux kernel.
-d interval : Delay Time : Specifies the delay between screen updates and overrides the corresponding value in one personal configuration file or th startup default.

QUESTION NO: 14 CORRECT TEXT
You wish to start a process and run it in the background. The binary executable is mybinary, and it's in your path. Type in the command in its simplest form to do this.

Answer: mybinary &
Explanation: Process can start either in foreground or in background. By default commands executes on foreground. Running the process in foreground allows only one command can enter at a time because we will get the shell to type another command until fininshing the current command. But background process allows to run the more than one command at a time.
To run the process in background just append the & at the end of the command.
Example:
find / -name passwd >result &

QUESTION NO: 15 CORRECT TEXT
You wish to know what the previous runlevel the system was in. Type in the command to show this.

Answer: runlevel
Explanation: runlevel command displays the current and previous runlevel.
Example:
[root@server1 ~]# runlevel
N 3
[root@server1 ~]#
Which means Currenct runlevel is 3 is runlevel is not changed.
Standard Runlevel
0 - halt (Do NOT set initdefault to this)
1 - Single user mode

2 - Multiuser, without NFS (The same as 3, if you do not have networking)
3 - Full multiuser mode
4 - unused
5 - X11
6 - reboot (Do NOT set initdefault to this)

QUESTION NO: 16
Regardless of the version of Linux, which of the following help start and stop services on demand? Select two.

A. xinetd
B. inetd
C. samba
D. nfs
E. amd

Answer: A, B
Explanation: xinetd performs the same function as inetd: it starts programs that provide Internet services. Instead of having such servers started at system initialization time, and be format until a connection request arrives, xinetd is the only daemon process started and it listens on all service ports ofr the services listed in it's configuration file.

QUESTION NO: 17
Exhibit, output:

```
prompt> testkingapp
[1]+ Stopped testkingapp
prompt>
```

Which of the following commands will resume executing the stopped process while allowing the user to continue to type commands at the command prompt?

A. bg testkingapp
B. continue testkingapp
C. exec testkingapp
D. fg testkingapp
E. testkingapp &

Answer: A
Explanation: Process can start either in foreground or in background. By default commands executes on foreground. Running the process in foreground allows only one command can enter at a time because we will get the shell to type another command until fininshing the current command. But background process allows to run the more than one command at a time.
To run the process in background just append the & at the end of the command.
Example:
find / -name passwd >result &
We can suspend the jobs running in foreground by pressing ctrl+z shortcut. As well as can resume the suspended jobs either in background or foreground.
#fg %jobid : Runs the job in foreground
#bg %jobid : Runs the job in background
or
#fg command
#bg command

QUESTION NO: 18
What option can be used with the shutdown command to cancel a pending shutdown?

A. shutdown -c
B. shutdown -x
C. shutdown -n
D. shutdown -u

Answer: A
Explanation: shutdown brings the system down in a secure way. All logged-in uers are notified that the system is going to down, and login blocked.
Syntax: shutdown [time]
#shutdown -c : Which cancel the shutdown process.

QUESTION NO: 19
You want to do a system shutdown, but you don t want the shutdown to occur immediately. You want the system to wait 60 seconds before doing the shutdown.

What option can be used with the shutdown command to wait 60 seconds before starting theshutdown?

A. shutdown -t 60
B. shutdown -w 1
C. shutdown -c 60
D. shutdown -t 1

Answer: A
Explanation: shutdown brings the system down in a secure way. All logged-in uers are notified that the system is going to down, and login blocked.
Syntax: shutdown [time]
#shutdown -c : Which cancel the shutdown process.

QUESTION NO: 20
What option can be used with the shutdown command to send a warning message alerting users that the system will be shut down?

A. shutdown -k
B. shutdown -w
C. shutdown -a
D. shutdown -c

Answer: A

Explanation: shutdown brings the system down in a secure way. All logged-in uers are notified that the system is going to down, and login blocked.
Syntax: shutdown -k message : Which sends the warning messages to all logged-in users.

QUESTION NO: 21
What option can be used with the shutdown command to reboot the system?

A. shutdown -r
B. shutdown -y
C. shutdown -c
D. shutdown -b

Answer: A
Explanation: shutdown brings the system down in a secure way. All logged-in uers are notified that the system is going to down, and login blocked.
shutdown -k message : Which sends the warning messages to all logged-in users.
shutdown -r time : Which reboots the system
shutdown -t time -h: Which halt the system after shutting down.

QUESTION NO: 22
Given the following output:
prompt> myapp
[1]+ Stopped myapp
prompt>
Which of the following commands command prompt?
resume executing the stopped process while allowing the user to continue to type commands at the

A. bg myapp
B. continue myapp
C. exec myapp
D. fg myapp
E. myapp &

Answer: A
Explanation: Jobs running on foregroud can suspend by pressing ctrl+z. Then suspended job can be run either in foreground or in background. To run in foregroud, fg command and to run in background bg command.
Or
bg job id
fg job id

QUESTION NO: 23
What is the default process priority when a process is started using the nice command?

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

Answer: D
Explanation: Default Priority for nice command is 0, highest is -20 and lowest is 19.

QUESTION NO: 24
Which of the following commands is equivalent to kill 1234?

A. kill -1 1234 or kill -s SIGHUP 1234
B. kill -2 1234 or kill -s SIGINT 1234
C. kill -3 1234 or kill -s SIGQUIT 1234
D. kill -9 1234 or kill -s SIGKILL 1234
E. kill -15 1234 or kill -s SIGTERM 1234

Answer: E
Explanation: The command kill sends the specified signal to the specified process or process group. If no signal is specified, the TERM signal is sent.

QUESTION NO: 25
Which of the following GNU commands would be the most likely command you'd use to find the system load average?

A. top
B. nice
C. loadavg
D. cpustat
E. ps

Answer: A

Explanation: The top program provides a dynamic real-time view of a running system. It can display system summary information as well as a list of tasks currently being managed by the Linux kernel. The types of system summary information shown and the types, order and size of information displayed for tasks are all user configurable and that configuration can be made persistent across restarts.

QUESTION NO: 26
What key sequence will suspend the current process and return you to a shell prompt?

A. Ctrl-z
B. Ctrl-c
C. Ctrl-x
D. Ctrl-d

Answer: A
Explanation: A is correct because to suspend the foreground job we use ctrl+z keystroke. And it converts the foreground jobs in background in stopped status.
To display background job use: jobs command

QUESTION NO: 27
What command changes the priority of the process running with process id of 12345 to the highest priority?

A. /usr/bin/renice +20 1234
B. /usr/bin/renice -20 12345
C. /bin/setpriority +20 12345
D. /bin/setpriority -20 12345

Answer: B
Explanation: To change the priority of running process we use the renice command. Default priority is 0, highest priority is -20 and lowest priority is 19. The path of renice command is /usr/bin/renice.

QUESTION NO: 28
You wish to kill a process with a PID of 123. Select the command, which will allow the process to "clean up" before exiting.

A. kill -1123
B. kill -9123
C. kill -15123
D. kill -17123

Answer: B
Explanation: To terminate the process we use kill command. But we should know the process ID. In questions PID is specified to 123.
Syntax of kill command is: kill signal PID
Where -9 is the powerful signal then other signal which kill the process.

QUESTION NO: 29
A user complains that she cannot run her script at a process priority higher than 0. Select the probable cause:

A. Users can only run at a priority of 0.
B. She is wrong -- users always run at a priority higher than 0.
C. Only root can set a priority other than the default.
D. Only root can raise the priority to higher than 0.

Answer: A
Explanation: Default Priority is 0 and root only can set priority from -20 (Highest) to 19 (lowest) priority. Whatever process user runs, process starts on default priority value 0.
If you are root and want to set priority use: nice -n priority_value command.
Example: nice -n -20 find /etc -name passwd. But users can't set the priority to process. If you tried from no-root user you will get message: nice: cannot set priority: Premission Denied.

Section 6, (1.103.6) Modify process execution priorities (11 Questions)

Description: Candidates should be able to manage process execution priorities. Tasks include running a program with higher or lower priority, determining the priority of a process and changing the priority of a running process.

Key files, terms, and utilitiesinclude:

nice
ps
renice
top

QUESTION NO: 1
Which of the following syslog identifiers represents the highest priority?

A. notice
B. warning
C. error
D. critical

Answer: D
Explanation: critical represents the highest priority of any facility.
mail.info : Lowest priority
mail.critical : Highest priority of facilitiy.

QUESTION NO: 2
Which of the following syslog identifiers represents the highest priority?

A. alert
B. error
C. critical
D. emerg

Answer: D
Explanation: critical represents the highest priority of any facility.
mail.info : Lowest priority
mail.critical : Highest priority of facilitiy.

QUESTION NO: 3

Which of the following syslog identifiers represents the highest priority?

A. info
B. warning
C. notice

Answer: B
Explanation: the standard syslog levels are (in descending order of priority): emerg, alert, crit, err, warning, notice, info, debug

QUESTION NO: 4
Which of the following syslog identifiers represents the highest priority?

A. alert
B. error
C. critical
D. emerg

Answer: D
Explanation: the standard syslog levels are (in descending order of priority): emerg, alert, crit, err, warning, notice, info, debug

QUESTION NO: 5
You run the following commands:

```
[user@prompt]$ nice -n 1 program1
[user@prompt]$ nice -n 5 program2
[user@prompt]$ nice -n 10 program3
```

Which of the program started will have the highest priority?

A. program1
B. program2
C. program3

Answer: A
Explanation: When process start, it start with default priority value of 0, Priority value can be -20 (which is highest) to 19 (which is lowest). So Answer A is correct.

QUESTION NO: 6
You run following commands:
[user@prompt]$ nice -n 1 program1
[user@prompt]$ nice -n 5 program2
[user@prompt]$ nice -n 10 program3

Which of the program started will have the highest priority?

A. program 1
B. program 2
C. program 3

Answer: A
Explanation: When process start, it start with default priority value of 0, Priority value can be -20 (which is highest) to 19 (which is lowest). So Answer A is correct.

QUESTION NO: 7
Which two programs will allow you to change the priority of a program already running? (Choose two)

A. top
B. nice
C. niceit
D. renice
E. chnice

Answer: A, D
Explanation: Renice alters the scheduling priority of one or more running processes.
Example: # renice -20 -p 3042 : Which sets the -20 priority to process having 3042 PID.

QUESTION NO: 8
Which command would you use to change the priority of a running process?

A. renice
B. nice
C. kill
D. pstree
E. killall

Answer: A
Explanation: Renice alters the scheduling priority of one or more running processes.
Example: # renice -20 -p 3042 : Which sets the -20 priority to process having 3042 PID.

QUESTION NO: 9 CORRECT TEXT
To change the priority of a running process, you use the _____ command. (Specify command only with no options)

Answer: renice
Explanation: Renice alters the scheduling priority of one or more running processes.
Example: # renice -20 -p 3042 : Which sets the -20 priority to process having 3042 PID.

QUESTION NO: 10 CORRECT TEXT
What program would you use to increase or decrease the priority of a command before it is executed?

Answer: nice
Explanation: nice command helps to run the command by setting different priority.
#nice -n -20 find / -size +1024k
Which runs the find command by setting priority value -20.

QUESTION NO: 11 CORRECT TEXT

What command could be used to get a hierarchical view of all the processes running on the system without requiring your to provide any switches or options?

Answer: top
Explanation: The top programs provides a dynamic real-time view of running system. It can display system summary information as well as a list of tasks currently being managed by the linux kernel.

Section 7, (1.103.7) Search text files using regular expressions (5 Questions)

Description: Candidates should be able to manipulate files and text data using regular expressions. This objective includes creating simple regular expressions containing several notational elements. It also includes using regular expression tools to perform searches through a filesystem or file content.
Key files, terms, and utilitiesinclude:
grep
regexp
sed

QUESTION NO: 1
You have created a really long letter and after you are done you notice that you used the name "Bob" many times but you forgot to capitalize it in many instances. Which command would replace "bob" with "Bob" in all instances and generate a new letter for printing?

A. sed '/bob/Bob' letter > newletter
B. sed s/bob/Bob/ leter < newletter
C. sed 's/bob/Bob/' letter> newletter
D. sed 's/bob, Bob/' letter > newletter

Answer: C
Explanation: sed is called the stream editor command, which is used to find and replace the string pattern.
Example:
#sed 's/cat/dog/' testfile >testfile1 : Which replace the cat to dog from testfile and redirect the output into testfile1 file.
Similaly Answer C is correct.

QUESTION NO: 2
A user needs to search a file for lines that contain the asterisk (*) character. Which grep search command will accomplish this? Choose all that apply.

A. grep * textfile
B. grep '*' textfile
C. grep "*" textfile
D. grep \<*\> textfile
E. grep '"*"' textfile

Answer: A, B, C
Explanation: grep, sed, tail, head, less, sort, cut etc are string processing tools, which uses different symbls to match the pattern.
Whildcard Charaacter:
. àAny Single Character
* àzero or more character
[abc] àAny Single Character from the range
[^abc] àAny Single Character except from the range

Similarly Anchors
^ àLine beigns with
$ àLine ends with
\< àWord beigns with
\> àWord ends with
So grep search the pattern and displays all lines matching the pattern. But * is the meaningfull character so to kill the meaning of meaningfull characters should use \.

QUESTION NO: 3
You want to search the file myfile for all occurances of string containing at least five characters, where character number 2 and 5 are 'a' and character number 3 is NOT 'b'. Which command would you use?

A. grep a*^b*a myfile
B. grep .a[^b].a myfile
C. grep .[a].*.[a] myfile
D. grep .a*^b..a myfile

Answer: B
Explanation: grep, sed, tail, head, less, sort, cut etc are string processing tools, which uses different symbls to match the pattern.
Whildcard Charaacter:
. àAny Single Character
* àzero or more character
[abc] àAny Single Character from the range
[^abc] àAny Single Character except from the range

Similarly Anchors
^ àLine beigns with
$ àLine ends with
\< àWord beigns with
\> àWord ends with

QUESTION NO: 4
Which of the following commands would display the lines containing capital letters form the file "turkey.txt"?

A. cat turkey.txt|wc -|
B. grep -n [A-Z] turkey.txt
C. cat turkey.txt|wc -w [A-Z]
D. grep -v [A-Z] < turkey.txt
E. for [A-Z] in turkey.txt | count

Answer: B
Explanation: grep, sed, tail, head, less, sort, cut etc are string processing tools, which uses different symbls to match the pattern.
Whildcard Charaacter:
. àAny Single Character
* àzero or more character
[abc] àAny Single Character from the range
[^abc] àAny Single Character except from the range

Similarly Anchors
^ àLine beigns with
$ àLine ends with
\< àWord beigns with

\> àWord ends with

QUESTION NO: 5
You wish to list all files within your current working directory that are of the type ASCII, showing just a single line for each of those files. Type in the command string that would accomplish this.

Answer: file * | grep ASCII
Answer: file * | grep -i ascii
Explanation: file command determines the type of file,
#file filename
File type can be ASCI, directory, HTML file etc.
file * | grep ASCII : Displays the all ASCII files

Section 8, (1.103.8) Perform basic file editing operations using vi (14 Questions)

Description: Candidates should be able to edit text files using vi. This objective includes vi navigation, basic vi nodes, inserting, editing, deleting, copying, and finding text.
Key files, terms, and utilitiesinclude:
vi
/, ?
h,j,k,l
G, H, L
i, c, d, dd, p, o, a
ZZ, :w!, :q!, :e!
:!

QUESTION NO: 1
You are writing text in vi. Now you want to save your changes and exit.
Which two sequence of inputs will accomplish this? Select two.

A. esc XX
B. ctrl :w!
C. esc zz

D. esc :wq!
E. ctrl XX
F. esc ZZ

Answer: D, F
Explanation:

Shortcuts	Description
:wq or ZZ	Save and Exit
:w	Write into Disk
:q!	Quit without Save

QUESTION NO: 2
You want to save vi changes to the file myfile with :w!, but vi complains it can not write to the file. Therefore, you want to check the write permissions on the file. To do this without leaving vi, you type:

A. :!ls -l myfile
B. :\ls -l myfile
C. esc :ls -l myfile
D. :?ls -l myfile

Answer: A
Explanation: You can execute the external commands in vi editor using :! command .
Example: :!ls -l à displays all contents of current directory.

QUESTION NO: 3 CORRECT TEXT
You wish to match instances of the word 'Many' that are at the begining of a line in the vi editor. What is the key combination to do this? Include the character to indicate a search in VI, and type the command as if you were in Command Mode in VI.

Answer: /^Many

Explanation: In vi Editory we can search any pattern in forward directory using / and backward direction using ?. As well as can use different string processing symbols.
Whildcard Charaacter:
. àAny Single Character
* àzero or more character
[abc] àAny Single Character from the range
[^abc] àAny Single Character except from the range

Similarly Anchors
^ àLine beigns with
$ àLine ends with
\< àWord beigns with
\> àWord ends with
So /^Many search all lines beginning by Many word.

QUESTION NO: 4 CORRECT TEXT
You wish to match the character string v2.1 v2.2 v2.3 through to v2.9 within VI. Type the search string to achieve this.

Answer: /v2\.[1-9]
Explanation: In vi Editory we can search any pattern in forward directory using / and backward direction using ?. As well as can use different string processing symbols.
Whildcard Charaacter:
. àAny Single Character
* àzero or more character
[abc] àAny Single Character from the range
[^abc] àAny Single Character except from the range

Similarly Anchors
^ àLine beigns with
$ àLine ends with
\< àWord beigns with
\> àWord ends with

QUESTION NO: 5
How can you print an entire file to standard output?

A. printfile
B. cat
C. ls
D. pr2stdout

Answer: A
Explanation: Cat allows you to look, modify or combine a file. The ls command will list the files and directories within the current working directory (the directory you are currently in). Pr2stdout does not exist.

QUESTION NO: 6
Select all the ways of exiting and saving a vi session.

A. :wq
B. :w
C. :ZZ
D. Shift ZZ
E. :x
F. :exit

Answer: A, D, E

Explanation:

Shortcuts	Description
:wq or ZZ ro x	Save and Exit
:w	Write into Disk
:q!	Quit without Save

QUESTION NO: 7
After starting vi to edit an existing text file, you press 'A' (shift +a). This will let you:

A. Insert text at the end of the current file.

B. Insert text at the end of the current sentence.
C. Insert text after your current cursor position.
D. Insert text at the end of the file.
E. Insert text at the end of your current paragraph.

Answer: B
Explanation:

Shortcuts	Description
A	Append after the Current Cursor Position
I	Insert before the Current Cursor Position
O	Append new blank line below
A	Append to end of line
I	Insert at the beginning of line
O	Append new blank line above

QUESTION NO: 8 CORRECT TEXT
Type in the VI command line that would open the file mytestfile.txt and line number it?

Answer: vi +"set number" mytestfile.txt
Answer:-vi mytestfile.txt +"set number"
Answer:--vi "+set number" mytestfile.txt
Answer:--vi mytestfile.txt "+set number"
Explanation: set number option set the line number in vi editor. If you want to open the file in vi editor, you can use one of above command.

QUESTION NO: 9 CORRECT TEXT
You wish to edit the file 'mytextfile' with the VI editor and search for the string 'testking'. Type in the command line to open the file and highlight the first instance of testking, (and any others).

-
-

Answer: vi +/testking mytextfile
Answer: vi mytextfile +/testking

Explanation: To search in vi editor:
/ à Search in Forward Directtion
? à Search in Backward Direction
n à find Next in forward Direction
Nà Find Next in previous Direction
So vi +/testking mytextfile will search the testking in mytextfile.

QUESTION NO: 10 CORRECT TEXT
Using the VI editor you wish to paste the contents of the b buffer to the position of the cursor. What key combination would you type.

Answer: "bp
Answer: "Bp
Explanation: "bp paste the contents of the b buffer to the postion of the cursor.

QUESTION NO: 11 CORRECT TEXT
You wish to search for lines in VI that end with the string 'testking' Input the keystrokes to achive this, including the vi search character.

Answer: /testking$

Explanation: In vi Editory we can search any pattern in forward directory using / and backward direction using ?. As well as can use different string processing symbols.
Whildcard Charaacter:
. àAny Single Character
* àzero or more character
[abc] àAny Single Character from the range

[^abc] àAny Single Character except from the range

Similarly Anchors
^ àLine beigns with
$ àLine ends with
\< àWord beigns with
\> àWord ends with
$ symbol is used to search the pattern ended the lines with.

QUESTION NO: 12
In the vi editor, which of the following commands will delete the current line at the cursor and the 16 lines following it (17 lines total)?

A. 17d
B. 17dd
C. 17x
D. d17d
E. 16d

Answer: B
Explanation: dd option is used to delete the current line. To delete more than one line, we should pass the number of lines from current line.

Shortcuts	Description
X	Deletes current Character
Nx	Deletes n characters
Dd	Deletes Current Line
Ndd	Deletes n lines
Dw	Deletes the current word
Ndw	Deletes the n words

QUESTION NO: 13
While using the vi editor, you wish to move ahead one page. You should press the control key and:

A. A

B. D
C. F
D. U

Answer: C
Explanation: To move screen in vi Editor,
F à go forward one full screen
B à go back one full screen
D à go down half screen
U à go up half screen

QUESTION NO: 14
Using vi, you want to save changes to the file myfile with :w!, but vi complains it cannot write to the file. Therefore, you want to check the write permissions on the file. To do this without leaving vi, you type:

A. :!ls -l myfile
B. :\ls -l myfile
C. esc :ls -l myfile
D. :?ls -l myfile

Answer: A

Explanation: A is correct because if you want to execute the bash commands on vi editor, use :!command . If you want to list the details of specified files, use :!ls -l filename. Similarly to display the date use :!date. To write the output of command in opened file in vi editor use !!date, !!ls -l etc.

Topic 4, (104) Devices, Linux Filesystems, Filesystem Hierarchy Standard (106 Questions)

Section 1, (1.104.1) Create partitions and filesystems (11 Questions)

1. **Description: Candidates should be able to configure disk partitions and then create filesystems on media such as hard disks. This objective includes using various mkfs** commands to set up partitions to various filesystems, including ext2, ext3, reiserfs, vfat, and xfs.

Key files, terms, and utilitiesinclude:
fdisk
mkfs

QUESTION NO: 1
What is the most popular file system choice?

A. ext2
B. bsdf
C. jfs
D. ext3

Answer: A
Explanation: Ext3 is the newer filesystem in linux having more advantages the older ext2 filesystem.

What are the advantages of ext3?Why do you want to migrate from ext2 to ext3? Four main reasons: availability, data integrity, speed, and easy transition.
Availability
After an unclean system shutdown (unexpected power failure, system crash), each ext2 file system cannot be mounted until its consistency has been checked by the e2fsck program. The amount of time that the e2fsck program takes is determined primarily by the size of the file system, and for today's relatively large (many tens of gigabytes) file systems, this takes a long time. Also, the more files you have on the file system, the longer the consistency check takes. File systems that are several hundreds of gigabytes in size may take an hour or more to check. This severely limits availability.
By contrast, ext3 does not require a file system check, even after an unclean system shutdown, except for certain rare hardware failure cases (e.g. hard drive failures). This is because the data is written to disk in such a way that the file system is always consistent. The time to recover an ext3 file system after an unclean system shutdown does not depend on the size of the file system or the number of files; rather, it depends on the size of the "journal" used to maintain consistency. The default journal size takes about a second to recover (depending on the speed of the hardware).
Data Integrity
Using the ext3 file system can provide stronger guarantees about data integrity in case of an unclean system shutdown. You choose the type and level of protection that your data receives. You can choose to keep the file system consistent, but allow for damage to data on the file system in the case of unclean system shutdown; this can give a modest speed up under some but not all circumstances. Alternatively, you can choose to ensure that the data is consistent with the state of the file system; this means that you will never see garbage data in recently-written files after a crash. The safe choice, keeping the data consistent with the state of the file system, is the default.
Speed

Despite writing some data more than once, ext3 is often faster (higher throughput) than ext2 because ext3's journaling optimizes hard drive head motion. You can choose from three journaling modes to optimize speed, optionally choosing to trade off some data integrity.

1. One mode, data=writeback, limits the data integrity guarantees, allowing old data to show up in files after a crash, for a potential increase in speed under some circumstances. (This mode, which is the default journaling mode for most journaling file systems, essentially provides the more limited data integrity guarantees of the ext2 file system and merely avoids the long file system check at boot time.)
2. The second mode, data=ordered (the default mode), guarantees that the data is consistent with the file system; recently-written files will never show up with garbage contents after a crash.
3. The last mode, data=journal, requires a larger journal for reasonable speed in most cases and therefore takes longer to recover in case of unclean shutdown, but is sometimes faster for certain database operations.

The default mode is recommended for general-purpose computing needs. To change the mode, add the data=something option to the mount options for that file system in the /etc/fstab file, as documented in the mount man page (man mount).

Easy Transition

It is easy to change from ext2 to ext3 and gain the benefits of a robust journaling file system, without reformatting. That's right, there is no need to do a long, tedious, and error-prone backup-reformat-restore operation in order to experience the advantages of ext3. There are two ways to perform the transition:

1. The Red Hat Linux installation program offers to transition your file systems when you upgrade your system. All you have to do is select one checkbox per file system.
2. The tune2fs program can add a journal to an existing ext2 file system. If the file system is already mounted while it is being transitioned, the journal will be visible as the file .journal in the root directory of the file system. If the file system is not mounted, the journal will be hidden and will not appear in the file system. Just run tune2fs -j /dev/hda1 (or whatever device holds the file system you are transitioning) and change ext2 to ext3 on the matching lines in /etc/fstab. If you are transitioning your root file system, you will have to use an initrd to boot. Run the mkinitrd program as described in the manual and make sure that your LILO or GRUB configuration loads the initrd. (If you fail to make that change, the system will still boot, but the root file system will be mounted as ext2 instead of ext3 - you can tell this by looking at the output of the command cat /proc/mounts.) More information on tune2fs can be found in the tune2fs man page (man tune2fs).

QUESTION NO: 2

What steps need to be performed, to make a new disk accessible to users? Select three.

A. fdisk
B. mkfs
C. mount
D. stat
E. quotaon

Answer: A, B, C
Explanation: One large disks convert into multiple small paritions using fdisk, sfdisk, GNU parted etc tools. After creating the small partitions needs to create the filesystem into the partitions. After creating the filesystem needs to mount on directory only after user can use the partition.

QUESTION NO: 3
Which THREE of the following commands are used when setting up and accessing a new filesystem on the hard drive?

A. fsck
B. mkfs
C. mount
D. fdisk
E. format

Answer: B, C D
Explanation: One large disks convert into multiple small paritions using fdisk, sfdisk, GNU parted etc tools. After creating the small partitions needs to create the filesystem into the partitions. After creating the filesystem needs to mount on directory only after user can use the partition.

Create the partitionàCreate the filesystemà Mount the filesystem

QUESTION NO: 4 CORRECT TEXT
Type in the command line that will display the partitions on just the Secondary Slave drive in your system.

Answer: fdisk -l /dev/hdd

Explanation: fdisk is the partition management tool use to create, format, delete the partitions. fdisk -l /dev/hda displays the all partitions created in /dev/hda

QUESTION NO: 5 CORRECT TEXT
Type the full command line to begin partitioning the second SCSI drive on your system using the most common disk partitioning tool.

Answer: fdisk /dev/sdb

Explanation:
Device Name Convention
IDE Disk:
Primary Master: /dev/had
Primary Slave: /dev/hdb
Secondary Master: /dev/hdc
Secondary Slave: /dev/hdd

SCSI Disk:
/dev/sda
/dev/sdb
fdisk is the disk management tool use to create, delete the partitions.
#fdisk -l : Displays all partitions
#fdisk -l /dev/hda : Displays all partitions created in /dev/had
#fdisk /dev/hda : fdisk mode can create partition on hda
#fdisk /dev/sdb : fdisk mode can create partition on /dev/sdb

QUESTION NO: 6
According to version 2.2 of the Fliesystem Hierarchy Standard, which of the following is an optional directory in / (the root file system)? Select all that apply

A. /boot
B. /tmp
C. /mnt
D. /home
E. /var

Answer: A, B, D, E
Explanation: When you try to install the linux into your system, you need to create at least / and swap (Virtual Memory) filesystems. As well as some important directories which can't separate from / like dev, lib, bin, sbin, etc. Other are called the Optional filesystem.

QUESTION NO: 7 CORRECT TEXT
You have written a custom tool on your local system. Following the File Hierarchy Standard (FHS), where should you install the binaries to be available to all users on your system?

Answer: /bin
Explanation: The Linux File system Hierarchy

/	The root Filesystem also called the top level directory in Linux
/boot	The /boot Directory contains the Kernel and all boot related Files
/bin, /usr/bin	All User commands
/sbin, /usr/sbin	Administrative Commands
/etc	Most configuration files.
/var	Also called the Variables, contains the Most Log files, Spooling files etc.
/home	Most user's home directory
/lib	Contains the Shared libraries used by kernel as well as different programs.
/media	Typical Mount Point for Removable Devices ie CDROM, Floppy and USB Flash Disks
/mnt	Mount Point for NFS (Network File Services), SAMBA etc
/dev	All Block Device as well as Character Device files
/proc	Virtual File system contains the information about the Running Kernel.
/selinux	Like /proc Virtual File system, contains the SElinux configuration information.
/root	Home Directory of root (also called the Super User) user.
/tmp	Contains the Temporary files/directories.
/opt	Directory for Third party Products.

QUESTION NO: 8
According to the Linux File System Hierarchy Standard, which one of the following directories is shareable and for static application files?

A. /opt
B. /var
C. /var/log
D. /etc

E. /usr

Answer: E
Explanation:The Linux File system Hierarchy

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/media	Typical Mount Point for Removable Devices ie CDROM, Floppy and USB Flash Disks
/mnt	Mount Point for NFS (Network File Services), SAMBA etc
/dev	All Block Device as well as Character Device files
/proc	Virtual File system contains the information about the Running Kernel.
/selinux	Like /proc Virtual File system, contains the SElinux configuration information.
/root	Home Directory of root (also called the Super User) user.
/tmp	Contains the Temporary files/directories.
/opt	Directory for Third party Products.

QUESTION NO: 9
If you want your system to be FHS-compliant, you must ensure that the /usr/local directory contain (choose all that apply):

A. bin

B. lib
C. man
D. sbin

Answer: A,B,C,D
Explanation: /usr/local directory contains bin, etc, info, man, lib, sbin, share, src directories.

QUESTION NO: 10
Which of the following Linux filesysterns pre-allocates a fixed number of inodes at filesysterns make/creation time, and does NOT generate them as needed?

A. ext3
B. B. jfs
C. reiserfs
D. xfs

Answer: A
Explanation:
What are the advantages of ext3?Why do you want to migrate from ext2 to ext3? Four main reasons: availability, data integrity, speed, and easy transition.
Availability
After an unclean system shutdown (unexpected power failure, system crash), each ext2 file system cannot be mounted until its consistency has been checked by the e2fsck program. The amount of time that the e2fsck program takes is determined primarily by the size of the file system, and for today's relatively large (many tens of gigabytes) file systems, this takes a long time. Also, the more files you have on the file system, the longer the consistency check takes. File systems that are several hundreds of gigabytes in size may take an hour or more to check. This severely limits availability.
By contrast, ext3 does not require a file system check, even after an unclean system shutdown, except for certain rare hardware failure cases (e.g. hard drive failures). This is because the data is written to disk in such a way that the file system is always consistent. The time to recover an ext3 file system after an unclean system shutdown does not depend on the size of the file system or the number of files; rather, it depends on the size of the "journal" used to maintain consistency. The default journal size takes about a second to recover (depending on the speed of the hardware).
Data Integrity

Using the ext3 file system can provide stronger guarantees about data integrity in case of an unclean system shutdown. You choose the type and level of protection that your data receives. You can choose to keep the file system consistent, but allow for damage to data on the file system in the case of unclean system shutdown; this can give a modest speed up under some but not all circumstances. Alternatively, you can choose to ensure that the data is consistent with the state of the file system; this means that you will never see garbage data in recently-written files after a crash. The safe choice, keeping the data consistent with the state of the file system, is the default.

Speed

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mkinitrd program as described in the manual and make sure that your LILO or GRUB configuration loads the initrd. (If you fail to make that change, the system will still boot, but the root file system will be mounted as ext2 instead of ext3 - you can tell this by looking at the output of the command cat

QUESTION NO: 11
The command mkfs -t ext3 /dev/hdb1 -T largefile creates what size of inode?

A. 4 kilobyte
B. 1 megabyte
C. 2 megabyte
D. 4 megabyte

Answer: B
Explanation: -T fs-type : Specify how the filesystem is going to be used, so that mke2fs can choose optimal filesystem parameters for that use. Some Filesystem type are:
news : One inode per 4kb block
largerfile : one inode per megabyte
largerfile4 : one inode per 4 megabytes

Section 2, (1.104.2) Maintain the integrity of filesystems (17 Questions)

Description: Candidates should be able to verify the integrity of filesystems, monitor free space and inodes, and repair simple filesystem problems. This objective includes the commands required to maintain a standard filesystem, as well as the extra data associated with a journaling filesystem.
Key files, terms, and utilitiesinclude:
du
df
fsck
e2fsck
mke2fs
debugfs
dumpe2fs
tune2fs

QUESTION NO: 1 CORRECT TEXT

Which command (without options) would you use to display how much space is available on all partitions?

Answer: df

Explanation: df displays the amount of disk space available on the filesystem containing each file name argument. If no file name is given, the space available on all currently mounted filesystems is shown.
df -h : Disk free space in human readable format.

QUESTION NO: 2
Which command will show the number of free and used inodes for your system's mounted file systems?

A. du -i
B. df -i
C. ls -iR /
D. freeinodes

Answer: B
Explanation:
df - report file system disk space usage
-i, --inodes, list inode information instead of block usage

QUESTION NO: 3
What command with switches will display the disk utilization for all mounted file systems?

A. df
B. vmstat
C. du
D. top
E. free

Answer: A
Explanation: df displays the amount of disk space available on the filesystem containing each file name argument. If no file name is given, the space available on all currently mounted filesystems is shown.
df -h : Disk free space in human readable format.

QUESTION NO: 4
What command with options will show the currently mounted filesystems usage in kilobytes?

A. df -k
B. df -h
C. du -k
D. du -h
E. du -s

Answer: A

Explanation: df displays the amount of disk space available on the filesystem containing each file name argument. If no file name is given, the space available on all currently mounted filesystems is shown.
df -k : Disk free space in kilobytes.

QUESTION NO: 5
Which utility on a system will report any excessive file system space remaining with very few inodes still available?

A. fsck
B. debugfs
C. sync
D. showfiles
E. softlinks

Answer: A
Explanation: fsck checks and repair the Linux File system. While checking the filesystem it returns the error code

0 : No Errors
1 : File System Errors corrected
2 : System should be rebooted
4 : File system errors left uncorrected
8 : Operational error
16 : Usage or Syntax error
32 : Fsck canceled by user request

fsck /dev/hda1 : It will check the filesystem error of /dev/hda1

QUESTION NO: 6 CORRECT TEXT
You are preparing to mount a new ext3 partition.
What command would you use to check the filesystem for errors before mounting it? (Include only the command without path, options, or arguments)

Answer: e2fsck
Explanation: e2fsck is used to check alinux second extended file system as well as third extended file jystem (containing journal in ext2 filesystem). After the journal has been applied a filesystem will normally be marked as clean. Hence, for ext3 filesystems, e2fsck will normally run the journal and exit, unless its superblock indicates that further checking is required.

QUESTION NO: 7 CORRECT TEXT
What utility is used to verify the integrity of a filesystem? (Do not specify path or parameters)

Answer: fsck
Explanation: fsck checks and repair the Linux File system. While checking the filesystem it returns the error code
0 : No Errors
1 : File System Errors corrected
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fsck /dev/hda1 : It will check the filesystem error of /dev/hda1

QUESTION NO: 8
What is the simplest and most direct command to check the integrity of an Ext2 file system?

A. fsck.ext2
B. fsck -t ext2
C. e2fsck
D. ext2fsck
E. None of the above

Answer: C

Explanation: e2fsck is used to check alinux second extended file system as well as third extended file jystem (containing journal in ext2 filesystem). After the journal has been applied a filesystem will normally be marked as clean. Hence, for ext3 filesystems, e2fsck will normally run the journal and exit, unless its superblock indicates that further checking is required.

QUESTION NO: 9
You are preparing to mount a new ext3 partition that is the second partition on your first IDE drive. How can you check the integrity of the filesystem first without having to answer "y" to a bunch of questions?

A. e3fsck -y /dev/hda2
B. e2fsck -y /dev/hda2
C. e3fsck -r /dev/hda2
D. e2fsck -r /dev/hda2

Answer: B
Explanation:

e2fsck is used to check alinux second extended file system as well as third extended file jystem (containing journal in ext2 filesystem). After the journal has been applied a filesystem will normally be marked as clean. Hence, for ext3 filesystems, e2fsck will normally run the journal and exit, unless its superblock indicates that further checking is required.
Where -y means assumes an answer of 'yes' to all questions; allows e2fsck to be used non-interactively.

QUESTION NO: 10
What option can be used with the shutdown command to skip fsck on reboot?

A. shutdown -f
B. shutdown -o
C. shutdown -r
D. shutdown -s

Answer: A
Explanation: shutdown command shutdowns the system in secure way.
Syntax: # shotdown option time
Example: shotdown -h now + 5 minutes : Which shutdown the system after 5 minutes from now.
#shutdown -f : Which skips the fsck on reboot
#shutdown -F : Which forces fsck on reboot.

QUESTION NO: 11 CORRECT TEXT
What command should you use to create an ext2 file system:

Answer: mke2fs
Explanation: According to the technical information available at Linux From Scratch Ver 3.0, To create an ext2 file system, use the mke2fs command. The LFS partition is used as the only option to the command and the file system is created.
mke2fs /dev/xxx
Replace "xxx" by the partition's designation (like hda11).

QUESTION NO: 12
You installed a new experimental kernel and found that one of your ext2 partitions no longer functions. You tried unsuccessfully to repair it.
What program can you use to interactively debug the filesystem?

A. e2fsck
B. tune2fs
C. debugfs
D. tine2fs
E. dumpe2fs

Answer: C
Explanation: degubfs program is an interactive file system debugger. It can be used to examine and change the state of an ext2 filesystem.

QUESTION NO: 13 CORRECT TEXT
You are experiencing errors and strange occurrences on an Ext2 filesystem, and want to debug it's operations. Type just the command that will most directly accomplish this.

Answer: debugfs
Explanation: degubfs program is an interactive file system debugger. It can be used to examine and change the state of an ext2 filesystem.

QUESTION NO: 14
Which of the following commands will print the inode usage on each mounted filesystem?

A. du -i
B. df -i
C. lsfs -i
D. printfs -i

Answer: B

Explanation Report filesystem disk space usage.
df -i list inode information instead of block usage.

QUESTION NO: 15
How many inodes are assigned to a file when it is created?

A. 1
B. 2
C. 4
D. 8

Answer: A
Explanation: One inode is assigned to one file. You can see by using ls -i or stat filename.

QUESTION NO: 16
Which utility would you use to change how often a filesystem check was performed over an EXT2 filesystem (without losing any data stored on that filesystem)?

A. mod2fs
B. fsck
C. tune2fs
D. mke2fs
E. fixe2fs

Answer: B
Explanation: fsck is used to check and optionally repair one or more Linux file systems. filesys can be a device name (e.g. /dev/hdc1, /dev/sdb2), a mount point (e.g. /, /usr, /home).Normally, the fsck program will try to run file systems on different physical disk drives in parallel to reduce total amount time to check all of the file systems

QUESTION NO: 17
Which command will create an ext3 filesystem on /dev/hda2?

A. /sbin/mke2fs -d /dev/hda2
B. /sbin/mke2fs -j /dev/hda2
C. /sbin/mke2fs -m 3 /dev/hda2
D. /sbin/mke2fs -c ext3 /dev/hda2

Answer: B

Explanation: mke2fs - create an ext2/ext3 filesystem
-j, Create the filesystem with an ext3 journal. If the -j option is not specified, the default journal parameters will be used to create an appropriately sized journal (given the size of the filesystem) stored within the filesystem. Note that you must be using a kernel, which has ext3 support in order to actually make use of the journal.

Section 3, (1.104.3) Control mounting and unmounting filesystems (19 Questions)

Description: Candidates should be able to configure the mounting of a filesystem. This objective includes the ability to manually mount and unmount filesystems, configure filesystem mounting on bootup, and configure user mountable removeable filesystems such as tape drives, floppies, and CDs.
Key files, terms, and utilitiesinclude:
/etc/fstab
mount
umount

QUESTION NO: 1
When the system is mounted, all file systems in the /etc/fstab are mounted, except those with what in the option column?

A. nomount
B. noauto
C. noatime
D. nohup

Answer: B
Explanation: noauto : Can only be mounted explicitly (the -a option will not cause the file system to be mounted).

QUESTION NO: 2
What options will allow a normal user to mount and then unmount a file system without needing assistance from the root user?

A. user and users in the /etc/fstab
B. user and users in the /etc/default/
C. user and users in the /etc/vfstab
D. user and users in the /etc/mnttab
E. usrquota and grpquota in the /etc/fstab

Answer: A
Explanation: user : allow a user to mount
Owner : allow device owner to mount
Pamconsole : allow a user at the console to mount

QUESTION NO: 3
What two things does the /etc/fstab file contain references to?

A. File Systems
B. Mount Points
C. User Options
D. File System Defaults
E. File System Permissions

Answer: A, B
Explanation: All filesystems written in /etc/fstab mount automatically at boot time.
Syntax of /etc/fstab:
Device mountpoint filesystem mounting options dump frequency fsck order
LABEL=/ / ext3 defaults,acl 1 1

LABEL=/boot /boot ext3 defaults 1 2
none /dev/pts devpts gid=5,mode=620 0 0
none /dev/shm tmpfs defaults 0 0
LABEL=/home /home ext3 defaults 1 2
none /proc proc defaults 0 0
none /sys sysfs defaults 0 0

LABEL=/usr /usr ext3 defaults 1 2
LABEL=/var /var ext3 defaults 1 2
LABEL=SWAP-hda13 swap swap defaults 0 0
/dev/hda14 /test ext3 defaults,acl 0 1
/dev/hda15 swap swap defaults 0 0
/dev/hdd /media/cdrom auto pamconsole,exec,noauto,managed 0 0
/dev/hdc /media/cdrecorder auto pamconsole,exec,noauto,managed 0 0

QUESTION NO: 4
Which is a valid /etc/fstab entry

A. fs1:/proc /mnt/fs1 nfs defaults 9 9
B. /mnt/fs1 fs1:/proc nfs defaults 0 0
C. fs1:/home /mnt/fs1 nfs defaults 0 0
D. /mnt/home fs1:/home nfs defaults 0 0
E. /home:fs1 /mnt/fs1 nfs defaults 0 0

Answer: C
Explanation: All filesystems written in /etc/fstab mount automatically at boot time.
Syntax of /etc/fstab:
Device mountpoint filesystem mounting options dump frequency fsck order
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LABEL=/home /home ext3 defaults 1 2
none /proc proc defaults 0 0
none /sys sysfs defaults 0 0
LABEL=/usr /usr ext3 defaults 1 2
LABEL=/var /var ext3 defaults 1 2
LABEL=SWAP-hda13 swap swap defaults 0 0
/dev/hda14 /test ext3 defaults,acl 0 1
/dev/hda15 swap swap defaults 0 0
/dev/hdd /media/cdrom auto pamconsole,exec,noauto,managed 0 0
/dev/hdc /media/cdrecorder auto pamconsole,exec,noauto,managed 0 0
to mount the nfs shared
Server:shared directory path mountpoint filesystem mounting point dump frequency fsck order.

QUESTION NO: 5
What type of information is found in the `/etc/fstab`file?

A. Information about mounted filesystems.
B. Information about hard disks such as cylinders and heads.
C. Information about filesystems and mount points.
D. Information about filesystems types such as super block offset
E. Information about the consistency of each currently mounted filesystem.

Answer: C

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none /sys sysfs defaults 0 0
LABEL=/usr /usr ext3 defaults 1 2
LABEL=/var /var ext3 defaults 1 2
LABEL=SWAP-hda13 swap swap defaults 0 0
/dev/hda14 /test ext3 defaults,acl 0 1
/dev/hda15 swap swap defaults 0 0
/dev/hdd /media/cdrom auto pamconsole,exec,noauto,managed 0 0
/dev/hdc /media/cdrecorder auto pamconsole,exec,noauto,managed 0 0

QUESTION NO: 6
Which entry in `/etc/fstab`will allow any user to mount and unmount `/dev/cdrom`?

A. /dev/cd rom /cd ro,noauto,unhide, all iso9660 0 0
B. /dev/cdrom /cd iso9660 ro,noauto,nonroot 0 0
C. /dev/cdrom /cd iso9660 ro,user,noauto,unhide 0 0

D. /dev/cdrom /cd iso9669 ro,user,noauto,unhide 0 0
E. /dev/cdrom /cd iso9660 ro,noauto,defaults 0 0

Answer: C

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none /sys sysfs defaults 0 0
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user : allow a user to mount
Owner : allow device owner to mount
Pamconsole : allow a user at the console to mount

QUESTION NO: 7
What is the proper option to put in /etc/fstab to enable group quotas for a particular parition?

A. groupquota
B. grpquota
C. groupquoatas
D. grpquotas

Answer: B

Explanation: grpquota enables the group quota accounting and limits according to the policy of administrator.
Example:
LABEL=/home /home ext3 defaults,grpquota 1 1

QUESTION NO: 8
What is the proper option to put in /etc/fstab to enable user quotas for particular partition?

A. usrquata
B. userquota
C. userquoatas
D. usrquotas

Answer: A
Explanation:
Usrquota enables the user quota accounting and limits according to the policy of administrator.
Example:
LABEL=/home /home ext3 defaults,usrquota 1 1

QUESTION NO: 9 CORRECT TEXT
What command (with parameter[s]) would you type to mount all partitions specified in the /etc/fstab?

Answer: mount -a
Explanation: mount command displays all mounted filesystem and mount -a mount all filesystem written /etc/fstab.

QUESTION NO: 10
You have just added a CD-ROM drive (/dev/hdd) to your system and have added it to your fstab. Typically you can use which of the following commands to mount media in that drive to /mnt/cdrom?

A. mount/dev/cdrom/mnt/cdrom
B. mount/dev/cdrom
C. mount -t cdrom/dev/cdrom/mnt/cdrom
D. mount/mnt/cdrom
E. automount/mnt/hdd/mnt/cdrom

Answer: D
Explanation:
/mnt/cdrom or /media/cdrom is the mount point for cdrom specified in /etc/fstab.
/dev/hdd /media/cdrom auto pamconsole,exec,noauto,managed 0 0
/dev/hdc /media/cdrecorder auto pamconsole,exec,noauto,managed 0 0
So we need to mount just typing mount /media/cdrom command.

QUESTION NO: 11 CORRECT TEXT
You wish to copy the entire contents of the /dev/hda1 to /dev/hdb1 block by block. Type in the simplest command that would do this?

Answer: dd if=/dev/hda1 of=/dev/hdb1
Explanation: dd command , which creates the disk image, the above command cratest the image of /dev/hda1 and transfer into /dev/hdb1.
Similarly dd if=diskboot.img of=/dev/sda1 : Which creates the image of diskboot.img and writes into /dev/sda1.

QUESTION NO: 12 CORRECT TEXT
You have a floppy image called boot.img in your current working directory and wish to transfer this image to a floppy device /dev/fd0. Type in the simplest command that would do this?

Answer: dd if=boot.img of=/dev/fd0
Explanation: dd command creates the disk image, the above command creates the image of boot.img and writes the image into /dev/fd0.

QUESTION NO: 13 CORRECT TEXT

You are building a server that will have many hardware and operating system upgrades. The server is the file server for all users on your 100 user network. Which directory should have its own mountpoint and/or hard drive?

Answer: /home
Explanation: /home is the user's base directory where users home directory will create. According to question that there are more than 100 users so /home needs to mount on separate partition.

QUESTION NO: 14
On boot you see an error message indicating that line 18 of /etc/fstab is bad. Looking at it shows:
/dev/fdO /mnt/ floppy auto auto, user 0 0
Why is there an error?

A. auto is not allowed in the third field for rernoveable media.
B. auto in the fourth field cannot be used for removeable media.
C. The fifth field must be 1 for removeable media.
D. The sixth field must be 1 for removeable media

Answer: B
Explanation: Here is the line of /etc/fstab
/dev/fd0 /media/floppy auto pamconsole,exec,noauto,managed 0 0
auto filesystem is used for removable media so it can't use in mounting option. So Answer B is correct.

QUESTION NO: 15
What does the command mount -a do?

A. It mounts the floppy disk for all users.
B. It shows all mounted file systems.
C. It opens /etc/fstab to edit.
D. It mounts all file systems listed in /etc/fstab.

Answer: D
Explanation: mount command lists all mounted file system. -a option is used to mount all file system written in /etc/fstab.

QUESTION NO: 16
To allow a regular user account to mount and unmount a filesystem (for instance, a cdrom or floppy), which option will need to be added to the corresponding line in /etc/fstab?

A. nouidchk
B. alluser
C. user
D. auto

Answer: C
Explanation: Answer C is correct. user options is used to allow an ordinary user to mount the file system. The name of the mounting user is written to mtab so that user can unmount the file system again.

QUESTION NO: 17
Which file contains information about filesystems and their respective mount points?

A. /etc/mount
B. /etc/fs_mount
C. /etc/fstab
D. /proc/fstab

Answer: C
Explanation: Usually to mount the filesystem we use the mount command but that is only for the current session. To mount the filesystem at boot time automatically we use /etc/fstab.
Pattern of /etc/fstab
Device mount point filesystem mount options dump fsck

Example

```
LABEL=/ / ext3 defaults 1 1
LABEL=/boot /boot ext3 defaults 1 2
none /dev/pts devpts gid=5,mode=620 0 0
none /dev/shm tmpfs defaults 0 0
LABEL=/home /home ext3 defaults,usrquota,grpquota 1 2
none /proc proc defaults 0 0
LABEL=/usr /usr ext3 defaults 1 2
LABEL=/var1 /var ext3 defaults 1 2
LABEL=SWAP-hda7 swap swap defaults
```

QUESTION NO: 18
Which option must be listed in /etc/fstab to activate user quotas automatically?

A. quota
B. user
C. quotaon
D. usrquota

Answer: D
Explanation: To implement quota in partitions, we should mount with usrquota for user quota, grpquota for group quota.

```
Example of mounting /home using usrquota and grpquota options.

LABEL=/home /home ext3 defaults,usrquota,grpquota 1 2
```

Section 4, (1.104.4) Managing disk quota (14 Questions)

Description: Candidates should be able to manage disk quotas for users. This objective includes setting up a disk quota for a filesystem, editing, checking, and generating user quota reports.
Key files, terms, and utilitiesinclude:
quota
edquota
repquota
quotaon

QUESTION NO: 1
How can you generate a report on the disk usage and quotas for all filesystem which re defined in /etc/mtab to be read-write with quotas?

A. quotarep -a
B. repquota /dev/hd*
C. repquota -a
D. quotarep /dev/hd*

Answer: C
Explanation: repquota prints a summary of the disk usage and quota for the specified filesystem. For each user the current number of files and amount of space is printed along with any quotas created with edquota.

Example: repquota /home : whch prints the quota information on /home.

QUESTION NO: 2 CORRECT TEXT
What must be added to the following to enable group quotas for `/usr`?
```
/dev/hda2 /usr ext2 defaults 1 1
```

Answer: grpquota
Explanation: grpquota enables the group quota accounting and limits according to the policy of administrator.
Example:
LABEL=/home /home ext3 defaults,grpquota 1 1

QUESTION NO: 3
Two directories require different quota for file system usage. The /var/mail directory needs a 20MB quota, and the /home directories require a 40MB quota. What must be true about these directories?

A. They must exist on Ext3 partitions
B. They must be on different drives
C. They must be on different partitions
D. They must be mounted by the root user

Answer: C
Explanation: We can apply the quota policy on per paritions basis. If different quota policy is required then needs to create the different partitions.

QUESTION NO: 4
You want to configure user quotas for the /home filesystem. You've installed the quota packages. What else needs to be done to enable the filesystem's quotas? Choose all that apply.

A. add usrquota to the /etc/fstab options column
B. run the quotaon command
C. run the quotacheck -avug command
D. edit the user's quota settings
E. remount the file system

Answer: A, B, C, D, E
Explanation: Steps of configure the quota
1. mount the partition using usrquota , grpquota option eg
LABEL=/home /home ext3 defaults,usrquota,grpquota 1 1 in fstab then reboot or remount the filesystem
#mount -o remount /home
2. Create the quota Information file
#touch /home/aquota.user
#touch /home/aquota.group
3. Initialize the quota database
#quotacheck -ug /home
4. Enable the quota
#quotaon -ug /home
5. Apply the quota policy
#edquota -u user1 /home
6. Monitor the quota
#quota username
#repquota /home

QUESTION NO: 5
Where is the quota information for users of volume /home stored?

A. /etc/sysconfig/quota/quota.home.user
B. /etc/quota/quota.home.user
C. /home/quota.home.user
D. /home/quota.user
E. /home/quota.home.group

Answer: D
Explanation: Steps of configure the quota
7. mount the partition using usrquota , grpquota option eg
LABEL=/home /home ext3 defaults,usrquota,grpquota 1 1 in fstab then reboot or remount the filesystem
#mount -o remount /home
8. Create the quota Information file
#touch /home/aquota.user
#touch /home/aquota.group
9. Initialize the quota database
#quotacheck -ug /home
10. Enable the quota
#quotaon -ug /home
11. Apply the quota policy
#edquota -u user1 /home
12. Monitor the quota
#quota username
#repquota /home
aquota.user is the quota information file as well as aquota.group is the group quota information file.

QUESTION NO: 6
How can you generate a report on disk usage and quotas for all filesystems which are defined in `/etc/mtabto be read-write with quotas.`

A. quotarep -a
B. repquota /dev/hd*
C. repquota -a
D. quotarep /dev/hd*

Answer: C

Explanation: repquota command displays the quota report of particular filesystem.
#repquota /home : Which reports the information of quota on /home
but -a option use the display the information of all quota enabled filesystem.

QUESTION NO: 7
You want to limit the amount of disk space ordinary users can have to 5MB per user in / var / spool / mail and 10MB per user in / home, using quota. What steps do you need to take when partitioning the hard drive?

A. Make a partition for / var / spool / mail and another one for / home.
B. Use qfdisk instead of fdisk to create the partitions and activate quotas.
C. No special steps are required. /var/ spool/ mail and / home can be part of the / partition.
D. Make one partition for both /home, then later on add a symlink for / var / spool / mail that points to that partition.
E. Use fdisk to make partition for / var / spool / mail and / home, then use the "u" option to tum on per-user quotas.

Answer: A
Explanation: Quota policy can apply per user, per group basis one policy rule per partition, to apply the quota policy on /var/spool/mail one rule as well as on /home different rule then /var/mail/spool, required two different partitions and needs to mount.
Steps of configure the quota
13. mount the partition using usrquota , grpquota option eg
LABEL=/home /home ext3 defaults,usrquota,grpquota 1 1 in fstab then reboot or remount the filesystem
#mount -o remount /home
14. Create the quota Information file
#touch /home/aquota.user
#touch /home/aquota.group
15. Initialize the quota database
#quotacheck -ug /home
16. Enable the quota
#quotaon -ug /home
17. Apply the quota policy
#edquota -u user1 /home
18. Monitor the quota
#quota username
#repquota /home

QUESTION NO: 8 CORRECT TEXT
What file must be put in the root of a filesystem for quotas to be enabled for users?

Answer: quota.user
Answer: aquota.user
Explanation: aquota.user is the quota information file as well as aquota.group is the group quota information file, which files required to create in root filesystem.

QUESTION NO: 9 CORRECT TEXT
You are the root user of a system, and need to gather quota information about all users on the system. Type the command along with any options and arguments to accomplish this.

Answer: repquota -a
Explanation: repquota command displays the quota report of particular filesystem.
#repquota /home : Which reports the information of quota on /home

QUESTION NO: 10 CORRECT TEXT
You are building that what will be a busy email and web server. You have plenty of space on a hardware RAID device. You are concerned about heavy log activity causing problems. Which directory should you give its own partition?

Answer: /var
Explanation: /var/spool/mail is the user's mail spooling directory and /var/www is the directory used by the http service. So /var/ shoul in different partitions.

QUESTION NO: 11 CORRECT TEXT
To prevent users from being able to fill up the / partition, the _____ directory should be on a separate partition if possible because it is world writeable.

Answer: /var
Explanation: If you haven't mounted the /var in different partition, it uses the space from / parititions and /var has the world writable permission means others also can write the files in /var/ so whenever others creates files it occupied space from /.

QUESTION NO: 12
Which of the following commands is run last during boot on a system With quotas enabled?

A. fsck
B. mount
C. quotacheck
D. quotaon

Answer: D
Explanation: quotaon announces to the system that disk quotas should be enabled on one or more filesystems. The filesystem quota files must be present in the root directory of the specified filesystem and be named either aquota.user (for version 2 user quota), quota.user (for version 1 user quota), aquota.group (for version 2 group quota), or quota.group (for version 1 group quota).

QUESTION NO: 13
You are using quota on your system. How can you see disk quota details?

A. repquota
B. quota -l
C. quota
D. quotachech
E. quota -list

Answer: A
Explanation: repquota prints a summary of the disk usage and quotas for the specified file systems. For each user the current number of files and amount of space (in kilobytes) is printed, along with any quotas created with edquota.
Example : repquota /home à prints the summary of disk usage and other information of all users.

QUESTION NO: 14
Which of the following commands will list the quota for the user foobar?

A. repquota foobar
B. quota foobar
C. lsquota foobar
D. printquota foobar

Answer: B

Explanation: quota - display disk usage and limits. Quota displays user's disk usage and limits. By default only the user quotas are printed.

```
Either quota -u username
 Or
 quota username
To display group quota:
 quota -g groupname
```

Section 5, (1.104.5) Use file permissions to control access to files (19 Questions)

Description: Candidates should be able to control file access through permissions. This objective includes access permissions on regular and special files as well as directories. Also included are access modes such as suid, sgid, and the sticky bit, the use of the group field to grant file access to workgroups, the immutable flag, and the default file creation mode.
Key files, terms, and utilitiesinclude:
chmod
umask
chattr

QUESTION NO: 1 CORRECT TEXT
On a standard Linux system as a normal user, what umask value will cause your file to be created with the following permissions ?

```
drwxr-x--- 2 username group 512 Mar 6 11:16 dir1
-rw-r----- 1 username group 0 Mar 6 11:16 file1
```

Answer: 027
Answer: 0027
Explanation: In terms of umask, you need to look at things backwards... When you see a umask of 027 it's the same as a pattern of ----x-xxx, right? Now, since it's a umask you need to INVERT that to figure out how it turns into an actual permission string. That makes it xxxx-x---.

QUESTION NO: 2
A user named TessKing needs to execute a system script file. What rights do the user need to execute a script file?

A. Read, Write and Execute for all
B. Execute only for user
C. Read-only for user, Execute for group
D. Read and Execute in the same permission set

Answer: D
Explanation: rwx for everyone is a bit overkill, execute only will not be enough as you can't access the file in that case. Read only for user will prohibit you from executing it. So in the end you need both Read and Execute permission in the same permission set.

QUESTION NO: 3
Which of the following are required in the /etc/passwd file when creating a user account? (Choose all that apply)

A. login name
B. userid

C. default group
D. password age
E. minimum password length

Answer: A, B, C
Explanation: The /etc/passwd file contains basic user attributes. This is an ASCII file that contains an entry for each user. Each entry defines the basic attributes applied to a user. When you use the mkuser command to add a user to your system, the command updates the /etc/passwd file. The following attributes are found in the file:
Name, Password, UserID, PricipleGroup, Gecos, HomeDirectory, Shell

QUESTION NO: 3
Your unmask is set to 002. If you create a new file, what will the permission of the new file be?

A. -rw-rw-r--
B. rwxrwx-w-
C. ------w-
D. rwxrwxr-x

Answer: A

QUESTION NO: 4
Before you start creating directories on a newly created file system, what should you do?

A. check the base system's umask setting
B. check the base system's CMOS setting
C. check the base system's init stage setting
D. check the base system's process ID setting

Answer: A
Explanation: According to the technical information available at Linux From Scratch Ver 3.0, Before we start creating directories, we need to check the base system's umask setting. To do this, we run umask. The result should be 022. If it isn't, then run the following command to ensure that the directories will be created with the correct permissions:

umask 022

QUESTION NO: 5 CORRECT TEXT
Type the command and argument that would cause the default permissions on newly created files to be set as:

rw- r-- r--

Answer: umask 022
Answer: umask 0022
Explanation: umask is the command which display as well as set the default permission.
First examine the given permission:
rw- for owner user : 6
r-- : for owner group member :4
r-- : for others: 4
It means total permission is 644
Now to set 644 default permission into file needs to subtract from 666
666
644

022
#umask 022

QUESTION NO: 6
If you set the umask to 022, by default what permissions will your files have?

A. 0220
B. 0557
C. 0644
D. 0755

Answer: C
Explanation: umask is the command which display as well as set the default permission.

When set the umask 022 then permission on files :
666
022

644
It means rw-r--r-- permission will set on files and
777
022

755
rwxr-xr-x permission will set on directory.

QUESTION NO: 7
A base Linux system's umask setting should be default to:

A. 022
B. 066
C. 077
D. 211

Answer: A
Explanation: There are two different default umask value one for root user and another is for non-root user.
022 umask is for root user and 002 for the non-root user. It is defined globally in /etc/bashrc file.

QUESTION NO: 8
In which file are you likely to find the global setting for the umask and ulimit?

A. /etc/profile
B. /etc/bashrc
C. /etc/bash_profile
D. ~/.bashrc
E. ~/.bash_profile

Answer: B

Explanation: Default umask is specified in /etc/bashrc file for root user and non-root user. For root user 022 is the default umask and 002 is for the non-root user.

QUESTION NO: 9
What is the purpose of setting the SUID? Choose all that apply.

A. Allows any user to run a executable program with the permissions of the owner of the program
B. Allows any user to run a program with the permissions of the group of the program
C. Everyone can edit the files that are created but only root and owner can delete them.
D. To keep programs that are needed constantly in non-swappable RAM
E. To cause a program opened in one X virtual pane to follow the user's focus to other panes

Answer: A, D
Explanation: Like files or directories, process also runs under the some ownership. By default process start under the ownership of executer. Means who is going to execute the command, process start under the ownership or security context of that user or group. When SUID or SGID bit is set the executable file, process starts under the security context of file owner then executer.
#chmod u+s file : which sets SUID bit on file
#chmod u+g file : Which sets SGID bit on file.

QUESTION NO: 10
What TWO permissions must a user have in order to run a shell script?

A. read
B. write
C. execute
D. browse on the directory
E. users cannot run shell scripts

Answer: A, C
Explanation: To execute the shell scripts required permission is read and execute.

#chmod a+x test.sh : Which sets the execute permission on test.sh file.

QUESTION NO: 11
When you create a new directory, you see the permissions are set to 600. What umask value would cause this to happen?

A. 177
B. 066
C. 244
D. 155
E. 333

Answer: A
Explanation: The new permission is 600, to set this permission umask should set:
777
-600

177
umask 177
When umask set 177 the permission on directory will be 600.

QUESTION NO: 12
When you create a new file, the permissions show as 654. What value is the umask likely set at?

A. 012
B. 002
C. 123
D. 022

Answer: A

Explanation: The new permission is 654 to set this permission umask should set:
666
654

012
#umask 012

When set the umask 012 the permission will be 654 on file.

QUESTION NO: 13
What are the default permissions for the Red Hat /etc/passwd file?

A. 644
B. 640
C. 400
D. 641
E. 440

Answer: A
Explanation: Default permission of /etc/passwd file in redhat enterprise linux is 644.
-rw-r--r-1 root root 3530 Aug 29 12:43 /etc/passwd

QUESTION NO: 14
What are the default permissions on the Red Hat /etc/shadow file?

A. 644
B. 600
C. 400
D. 444
E. 640

Answer: C
Explanation: The default permission of /etc/shadow file in Redhat Enterprise Linux is 400 means only the root user can read the file.
-r--------1 root root 3530 Aug 29 12:43 /etc/passwd

QUESTION NO: 15
After creating a new file, you notice that the permissions of the new file are -rw-rw-rw-. From this, you know that the value of the umask is what?

A. 023
B. 000
C. 112
D. d111
E. 223

Answer: B
Explanation: Files umask value is 6 because normal file created using the text editor do not have execute permission.
Maximum Permission to file 666
Applied Permission to file 666
Unmask value is -----
000

QUESTION NO: 16
You want the default permissions for your files to be -rw-r----- .
HOW must you set umask?

A. 037
B. 640
C. 038
D. 027

Answer: A
Explanation:
Total Permission 777
New Permission to set 740

Total Difference 037
umask 037 should set.

QUESTION NO: 17
You changed umask to prevent access to your files by others. Now you realize that another user has read a document that you wrote 2 weeks ago. Which of the following statements is correct?

A. You forgot a umask option.
B. You had to delete all older files.
C. You forgot to use chmod.

D. You have to reboot.

Answer: C
Explanation: umask command is used to set the default permission to new file or directory. It will not change the permission of already created files/directories.
To change the Permission of already created files/directories, should chmod command.

QUESTION NO: 18
What umask will set the file permissions on a newly created file to -rw-r--r-- (644)?

A. 0002
B. 0022
C. 0224
D. 0246

Answer: B
Explanation: umask command is used to display and set the default permissions. Here in question asking for the umask value of newly created file having permission 644. If any permission is not changed then special permission i.e SUID, SGID and sticky bits are not set.
Then in for have total permission for file is:
7666
-7644

0022

QUESTION NO: 19
Which command will print out the attributes of the file foobar?

A. ls --attr foobar
B. lsattr foobar
C. printattr foobar
D. fileattr foobar

Answer: B
Explanation: lsattr - list file attributes on a Linux second extended file system

Section 6, (1.104.6) Manage file ownership (9 Questions)

Description: Candidates should be able to control user and group ownership of files. This objective includes the ability to change the user and group owner of a file as well as the default group owner for new files.

Key files, terms, and utilitiesinclude:

chmod
chown
chgrp

QUESTION NO: 1 CORRECT TEXT

You work as network administrator at TestKing.com. A user moved to another department within TestKing.com. Which command would you use to change the group ownership of her files and directories? (fill in the blank - only the command without arguments or options):

Answer: chown
Answer:chgrp

Explanation: chown command change user and group ownership on file or directory. Similalrly you can change the group ownership using the chgrp command.

#chown userowner.groupowner file
#chown -R userowner.groupowner directory : This method is called recursively, it changes the ownership of directory as well as all the conetents of directory.
#chgrp groupowner filename/directory

QUESTION NO: 2

You need to alter the permissions on the directory /home/mrking and all it's contents to match the following permissions.

```
drwxr--r--
```

Which of these commands with options and arguments will accomplish this? Choose two.

A. chmod 0744 /home/mrking -R
B. chmod 744 /home/mrking/*
C. chmod -R u=rwx,g=r,o=r /home/mrking
D. chmod u+rwx,g+r,o+r /home/mrking

Answer: A, C
Explanation: We can change the permission of file or directory using the chmod command either using sumbolic method or numeric method.

Permission categories
u : Owner user
g : Owner Group
o : others
a : all
Permission types:
r : Read only : Numeric Value 4
w : Write : Numeric Value 2
x : Execute : Numeric Value 1

#chmod g+rwx filename : Which sets the read, write and execute permission to owner group member on file.
#chmod 777 filename : Which sets the read, write and execute permission to all
-R option is called recursive, when you use this option in directory it changes the permission to all the contents of directory.

QUESTION NO: 3
How can you set the SGID on a file called testkingexaminator?

A. chmod u+s testkingexaminator
B. chmod g+s testkingexaminator
C. chmod o+s testkingexaminator
D. chmod u+t testkingexaminator

Answer: B
Explanation: Like files or directories, process also runs under the some ownership. By default process start under the ownership of executer. Means who is going to execute the command, process start under the ownership or security context of that user or group. When SUID or SGID bit is set the executable file, process starts under the security context of file owner then executer.
#chmod u+s file : which sets SUID bit on file
#chmod u+g file : Which sets SGID bit on file.

QUESTION NO: 4
Which of the following commands makes /bin/foo executable by everyone but only writable by its owner?

A. chmod 557 /bin/foo
B. chmod o +rwx, a+rx /bin/foo
C. chown 557 /bin/foo
D. chmod 755 /bin/foo

Answer: D
Explanation: chmod 755 ecuals xxx x-x x-x meaning rwx, rx, rx.

QUESTION NO: 5
You have the following file:
```
-rwxrwxr-x 1 foo root 0 Feb 23 07:48 /bin/foo
```

Which of the following commands will change the owner of the file /bin/foofrom the foo userto the bar user without affecting group ownership?

A. chown /bin/foo bar
B. chown bar /bin/foo
C. chown bar.foo /bin/foo
D. chown.foo.bar /bin/foo

Answer: B
Explanation: chown [-hHLPR] [[user]] [:group] target1 [[target2 ..]]

QUESTION NO: 6
What would the following line accomplish if run as root?
chown -R bert /home/bert/*

A. Nothing, this command is invalid.
B. It would rovoke bert's ownership of all files in /home/bert to bert.
C. It would change user ownership of all files in /home/bert to bert.

D. It would set the group ownership of the directory /home/bert to bert
E. It would set ownership of all files and subdirectories in /home/bert to bert

Answer: E
Explanation:
-R Recursively change file user and group IDs. For each file operand that names a directory, chown shall change the user ID (and group ID, if specified) of the directory and all files in the file hierarchy below it. Unless a -H, -L, or -P option is specified, it is unspecified which of these options will be used as the default.

QUESTION NO: 7
Which shown command will change the ownership to 'testking' and the group to file 'list'?

A. chown testking/users list
B. chown -u testking -g users list
C. chown testking:users list
D. chown -- user testking - group users list

Answer: C
Explanation: chown [-hHLPR] [[user]] [:group] target1 [[target2 ..]]

QUESTION NO: 8 CORRECT TEXT
A file named "testking1" is set with the following ownership:

Owner = foo
Group = bar

You want to change this file's ownership to be totally owned by foo bar, what command string will accomplish this?

Answer: chown foo.bar testking1
Answer: chown foo:bar testking1
Explanation: chown [-hHLPR] [[user]] [:group] target1 [[target2 ..]]

QUESTION NO: 9

Which chown command will change the ownership to foo and the group to bar on a file named biglist?

A. chown foo/bar biglist
B. chown -u foo -g bar biglist
C. chown foo:bar biglist
D. chown --user foo --group bar biglist

Answer: C
Explanation: chown command is used to change the user owner and group owner of file or directory.
Syntax: chown user:group file/directory
OR
chown user.group file/directory

Section 7, (1.104.7) Create and change hard and symbolic links (7 Questions)

Description: Candidates should be able to create and manage hard and symbolic links to a file. This objective includes the ability to create and identify links, copy files through links, and use linked files to support system administration tasks.
Key files, terms, and utilitiesinclude:
ln

QUESTION NO: 1
If a file is symlinked to with a link name of file2, and that file is deleted, what happens to the contents of the file?

A. The contents still exist, and can be reached with file2
B. The contents are gone, leaving file2 orphaned
C. The file can be retrieved with undelete -f file2
D. File2 is another name to the original, and the contents are still there

Answer: B
Explanation: The symlink itself is only a pointer to the original file. If that file is deleted the pointer will point at an empty space.

QUESTION NO: 2
You need to create a symbolic link in the current user's home directory named testking to the file /data/foobar. Choose the command that will accomplish this.

A. link .testking /data/foobar
B. ln /data/foobar $HOME/testking
C. ln -s /data/foobar ~/testking
D. file --link ./testking /data/foobar
E. None of the above

Answer: C
Explanation: ln [OPTION]... [-T] TARGET LINK_NAME (1st form)
-s, --symbolic, make symbolic links instead of hard links

QUESTION NO: 3
What does the command "ln test king" typically do?

A. It will create a symbolic link from test to king.
B. It will create a hard link from king to test.
C. It will create a symbolic link from king to test.
D. It will create a copy of the file test in king.

Answer: B
Explanation: ln without the -s option will make a hard link. -s specifies that ln makes an symbolic link.

QUESTION NO: 4
What would cause a system to report having excess free space but very few available inodes?

A. Too many hard links are in use on /home.
B. A user has created many very small files.
C. **fsck** `hasn't been run on /home in a while.`
D. Too many symbolic links are in use on /home.
E. The disk needs to be synced before running df.

Answer: D
Explanation: Fast symlinks allow storage of the link-text within the standard data structures used for storing file information on disk (inodes).

QUESTION NO: 5
You are trying to make a hard link to an ordinary file but ln returns an error. Which of the following could cause this?

A. The source file is hidden.
B. B. The source file is readonly.
C. The source file is a shell script.
D. You do not own the source file.
E. The source and the target are on different filesystems.

Answer: E
Explanation: Hard link creates a separate physical File means it point to the original data then original filename. But hard link can't create for directory and cann't span the multiple partitions.

QUESTION NO: 6
You are experimenting with a binary in /tmp/foo.d that expects its configuration file at /etc/foo.conf. You don't want to save it there, but use a symbolic link to /tmp/foo.d/foo.conf instead.
Which command would accomplish that?

A. ln -s /tmp/foo.d/foo.conf /etc/foo.conf
B. ln /tmp/foo.d/foo.conf /etc/foo.conf
C. ln -s /etc/foo.conf /tmp/foo.d/foo.conf
D. ln /etc/foo.conf /tmp/foo.d/foo.conf

Answer: C
Explanation: Correct Answer is C. The ln command is used to create the link. There are two types of link a. Soft link b. Hard link.

a. Soft link à Can create for directory also, can span multiple partitions but available until and unless Original Files remain.
Syntax for Soft link
ln -s originalfile linkfile
b. Hard link à One separate Physical File, can't create for directory, can't span multiple file but remains the link file if original file removed.
Syntax for Hard link
ln originalfile linkfile

QUESTION NO: 7
You have read/write permission on an ordinary file foo. You have just run ln foo bar. What would happen if you ran rm foo?

A. foo and bar would both be removed.
B. foo would be removed while bar would remain accessible.
C. foo would be removed. bar would still exist but would be unusable.
D. Both foo and bar would remain accessible.
E. You would be asked whether bar should be removed.

Answer: B
Explanation: Correct Answer is B. The ln command is used to create the link. There are two types of link a. Soft link b. Hard link.
b. Softlink à Can create for directory also, can span multiple pratations but available until and unless Original Files remain.
Syntax for Softlink
ln -s originalfile linkfile
b. Hardlink à One separate Physical File, can't create for directory, can't span multiple file but remains the link file if original file removed.
Syntax for Hardlink
ln originalfile linkfile

In Questions, created the bar hardlink of foo. That means bar is on separate physical file. The file bar is accessible after removing the foo file also.

Section 8, (1.104.8) Find system files and place files in the correct location (10 Questions)

Description: Candidates should be thouroughly familiar with the Filesystem Hierarchy Standard, including typical file locations and directory classifications. This objective includes the ability to find files and commands on a Linux system.
Key files, terms, and utilitiesinclude:
find
locate
slocate
updatedb
whereis
which
/etc/updatedb.conf

QUESTION NO: 1
You want to find the full path of a certain command. How would you do this?

A. By using the 'where' command
B. By using the 'path' command
C. By using the 'which' command

Answer: C
Explanation: Which locates a program file in the user's path.

QUESTION NO: 2 CORRECT TEXT
You wish to find out the full path of the binary executable "cmd1". Type just the command that will show the first instance of the command.

Answer: which cmd1
Explanation: Which locates a program file in the user's path.

QUESTION NO: 3 CORRECT TEXT
To locate all files that are less than 3 days old, you use the _____ -mtime -3command.

Answer: find

Explanation: Find searches a folder hierarchy for filename(s) that meet a desired criteria: Name, Size, File Type etc.

QUESTION NO: 4
What command can find the program file "bar" and it's associated man pages and any existing source files, but not return all files that have "bar" in the command name or path?

A. whereis
B. find
C. locate
D. apropos
E. whatis

Answer: A
Explanation: Whereis locates the binary, source, and manual page files for specified commands/files.

QUESTION NO: 5
What file should you edit to exclude directories from being indexed by the slocate command?

A. /etc/slocatedb.conf
B. /etc/default/slocate
C. /etc/slocated.conf
D. /etc/updatedb.conf
E. /etc/sysconfig/updatedb.conf

Answer: D
Explanation: /etc/updatedb.conf is configuration file for updatedb, that is used to create the db that locate and slocate searches in.

QUESTION NO: 5

You want to make sure certain directories are excluded when you update your locate database file.
Where would you typically store this configuration?

A. /etc/locatedb.conf
B. /etc/slocatedb.conf
C. /etc/searchdb.conf
D. /etc/updatedb.conf

Answer: D
Explanation: /etc/updatedb.conf is configuration file for updatedb, that is used to create the db that locate and slocate searches in.

QUESTION NO: 6
Which of the following programs can be used to find the foo program in the PATH and associated man pages, but NOT list every file containing foo in the system?

A. which
B. search
C. slocate
D. where
E. whereis

Answer: E
Explanation: Whereis locates the binary, source, and manual page files for specified commands/files.

QUESTION NO: 7
Which one of the following programs will only find files that are in your PATH?

A. locate
B. slocate
C. which
D. find

Answer: C
Explanation: The locate command looks in a pre-built database for matches, like an index. This database is updated on a schedule, and is sometimes outdated.
B. slocate securely searches its database of filenames. It works like locate, but it also stores file permissions and ownership information so users cannot see files to which they don't have access. In some distributions, locate is actually a symbolic link to slocate."
C. The which command parses every directory in the PATH environment variable, returning the first match found. This is useful if you want to know which file gets executed when you type a command, or if you need to know the full path of a file for some reason. For example, security could be compromised by someone that puts an often used executable in a directory that gets looked at earlier in your PATH statement. Thus, every time you think you're executing a program, you're actually executing a possibly malicious program. There is an option to make the which command return every found result, but it will remain restricted to the PATH.
D. Finally, the find command just does a complete search. It accepts the starting directory as an argument, and just looks at every file and directory it finds. It takes a long time, but it's guaranteed to find anything that the user has read permission to.

QUESTION NO: 7
Which of the following programs can be used to the find the foo program in the PATH and associated man pages, but not list every file containing foo on the system?

A. which
B. search
C. slocate
D. where
E. whereis

Answer: E
Explanation: Whereis locates the binary, source, and manual page files for specified commands/files.

QUESTION NO: 8
Which command line option would you use to restrict the GNU find command to searching a particular number of subdirectories?

A. --max-dirs
B. -dirmax
C. -maxdepth
d. -s
e. -n

Answer: C
Explanation: Descend at most levels (a non-negative integer) levels of directories below the command line arguments.

QUESTION NO: 9
How can you replace all tabs in a file named file1 with spaces?

A. file --tabs-to-spaces FILE1
B. extend FILE1
C. wc -t2s FILE1
D. expand FILE1

Answer: D
Explanation: expand command convert tabs in each FILE to spaces, writing to standard output.

QUESTION NO: 10
Which program finds only files that are in your path?

Answer: slocate
Explanation: Secure Locate provides a secure way to index and quickly search for files on your system. It uses incremental encoding just like GNU locate to compress its database to make searching faster, but it will also store file permissions and ownership so that users will not see files they do not have access to.

Topic 5, (110) The X Window System (56 Questions)

Section 1, (1.110.1) Install & Configure XFree86 (25 Questions)

1. **Description:** Candidate should be able to configure and install X and an X font server. This objective includes verifying that the video card and monitor are supported by an X server, as well as customizing and tuning X for the videocard and monitor. It also includes installing an X font server, installing fonts, and configuring X to use the font server (may require a manual edit of /etc/X11/XF86Config in the "Files" section).
Key files, terms, and utilitiesinclude:
XF86Setup
xf86config
xvidtune
/etc/X11/XF86Config
.Xresources

QUESTION NO: 1
After installing and configuring Xfree86, you notice that when you start X, the display is not centered. What program can you run to find a better modeline setting?

A. XF86Setup
B. xf86config
C. xvidtune
D. xvideoagent

Answer: C
Explanation: xvidtune - video mode tuner for XFree86.
Synopsis: xvidtune [-show | -prev | -next | -unlock] [-toolkitoption ...]

QUESTION NO: 2
The X program _____ is often used to make minor keyboard adjustments, like proper Backspace/Delete mapping.

A. xkbdmap
B. kbdmap
C. xmodmap
D. modmap

Answer: B
Explanation: kbdmap is the keyboard map file format for kbdcontrol

QUESTION NO: 3 CORRECT TEXT
What is the name of the X configuration tool that runs in graphical text mode?

Answer: Xconfigurator

QUESTION NO: 4
What entry in the X configuration file specifies where the fonts are located for the X system?

A. Fonts
B. Files
C. Fontpath
D. Devices

Answer: C
Explanation: Xconfigurator - configure XFree86 server and display

QUESTION NO: 5
With Xfree86 3.3.5, what is the name of the default font server?

A. xfs
B. xfserv
C. fonts
D. xfstt
E. fserv

Answer: A
Explanation: The X font server (xfs) provides a standard mechanism for an X server to communicate with a font renderer.

QUESTION NO: 6
What is the name of the default XFree86 Font Server?

A. xfs
B. xfserver
C. xfree86fs
D. Xfs
E. xfontserver

Answer: A
Explanation: The X font server (xfs) provides a standard mechanism for an X server to communicate with a font renderer.

QUESTION NO: 7 CORRECT TEXT
What must you type immediately after adding new fonts to an X window system, to make them available to the system?

Answer: mkfontdir
Explanation: mkfontdir - create an index of X font files in a directory.

QUESTION NO: 8
What is the entry in the XF86Config file that specifies the fonts are on the local machine? Choose Two.

A. unix/:-1
B. unix/:7100
C. tcp/:45
D. udp/:80
E. font/:-1

Answer: A, B
Explanation: In XF86Config FontPath "path" -

sets the search path for fonts. This path is a comma separated list of font path elements which the X server searches for font databases. Multiple FontPath entries may be specified, and they will be concatenated to build up the fontpath used by the server. Font path elements may be either absolute directory paths, or a font server identifier. Font server identifiers have the form: <trans>/<hostname>:<port-number>
where <trans> is the transport type to use to connect to the font server (e.g., unix for UNIX-domain sockets or tcp for a TCP/IP connection), <hostname> is the hostname of the machine running the font server, and <port-number> is the port number that the font server is listening on (usually 7100).

QUESTION NO: 9
What section of the XF86Config file contains the entry to set the path for fonts used?

A. Fonts
B. Files
C. Ttype
D. ATM
E. FontPath

Answer: B
Explanation: In XF86Config FontPath "path" -
sets the search path for fonts. This path is a comma separated list of font path elements which the X server searches for font databases. Multiple FontPath entries may be specified, and they will be concatenated to build up the fontpath used by the server. Font path elements may be either absolute directory paths, or a font server identifier. Font server identifiers have the form: <trans>/<hostname>:<port-number>
where <trans> is the transport type to use to connect to the font server (e.g., unix for UNIX-domain sockets or tcp for a TCP/IP connection), <hostname> is the hostname of the machine running the font server, and <port-number> is the port number that the font server is listening on (usually 7100).

QUESTION NO: 10
The screensize is already configured in X on a system. When started, the screen defaults to a certain size. The user wants to change it, what file should the user edit manually to accomplish this?

A. /etc/xf86config
B. /usr/bin/xf68setup
C. /etc/X11/XF86Config
D. /etc/screensize

Answer: C
Explanation: XFree86 uses a configuration file called XF86Config for its initial setup. This configuration file is searched for in the following places when the server is started as a normal user:

```
/etc/X11/<cmdline>
/usr/X11R6/etc/X11/<cmdline>
/etc/X11/$XF86CONFIG
/usr/X11R6/etc/X11/$XF86CONFIG
/etc/X11/XF86Config-4
/etc/X11/XF86Config
/etc/XF86Config
/usr/X11R6/etc/X11/XF86Config.<hostname>
/usr/X11R6/etc/X11/XF86Config-4
/usr/X11R6/etc/X11/XF86Config
/usr/X11R6/lib/X11/XF86Config.<hostname>
/usr/X11R6/lib/X11/XF86Config-4
/usr/X11R6/lib/X11/XF86Config
```

The reason to why C is correct is the case sensitive spelling.

QUESTION NO: 11
Which of the following is true about the XF86Config file. Select all that apply?

A. Can set the screen resolution settings
B. Can set the bits per pixel (colour depth) setting
C. Includes keyboard and mouse selections
D. Includes information on which window manager to run
E. Contains information on where fonts are located

Answer: A, B, C, E

Explanation: XFree86 is unaware of which window manager that is installed on top of it.

QUESTION NO: 12
In XF86Config which section is concerned with fonts?

A. the Fonts section
B. The Files section
C. The xfsCodes section
D. The Graphics section
E. The modeline section

Answer: B
Explanation: The files section consist of FontPath, RGBPath and ModulePath.

QUESTION NO: 13
You are the system administrator for a small consulting company. One of your consultants recently installed Linux on a system in order to prepare for a project. What he performed the installation, he chose several different screen sizes (604x480, 800x600, 1024x768). However, when he starts the system, it always goes into 640x480 first, and he must manually toggle to get to the higher resolution. He would like to change the setup so that he enters X at the higher resolution first.
If you were to change this setting manually, which file would you edit?

A. xinit
B. xinitrc
C. XF36Setup
D. XF86Setup
E. XF86Config

Answer: E
Explanation: Xfree86 uses a configuration file called XF86Config for its initial setup.

QUESTION NO: 14
You are the system administrator for a consulting firm where several people use Linux as their desktop operating system. One of your users has installed a commercial publishing program that works under X on a variety of UNIX and Linux platforms. The user made a series of configuration changes regarding the initial window size, location and color.
Now, he is having difficulty undoing these changes and is asking for your help. In which file would you think you would most likely find the configuration settings you are seeking to change?

A. ~/.xinitrc
B. ~/.xconfig
C. ~/.Xdefaults
D. ~/.XF86Config
E. /etc/X11/XF86Config

Answer: E
Explanation: XFree86 uses a configuration file called XF86Config for its initial setup. This configuration file is searched for in the following places when the server is started as a normal user:

```
/etc/X11/<cmdline>
/usr/X11R6/etc/X11/<cmdline>
/etc/X11/$XF86CONFIG
/usr/X11R6/etc/X11/$XF86CONFIG
/etc/X11/XF86Config-4
/etc/X11/XF86Config
/etc/XF86Config
/usr/X11R6/etc/X11/XF86Config.<hostname>
/usr/X11R6/etc/X11/XF86Config-4
/usr/X11R6/etc/X11/XF86Config
/usr/X11R6/lib/X11/XF86Config.<hostname>
/usr/X11R6/lib/X11/XF86Config-4
/usr/X11R6/lib/X11/XF86Config
```

QUESTION NO: 15
You are having problems with a particular font and you want to see if its directory is included in XF86Config. Which section contains this information?

A. Paths
B. Fonts
C. Files
D. Graphics

Answer: C
Explanation: The files section consist of FontPath, RGBPath and ModulePath.

QUESTION NO: 16 CORRECT TEXT
What is the name of the X configuration tool that runs in text mode from the command line, and has a large number of questions?

Answer: xf86config
Explanation: xf86config - An older X configuration program with a text based interface. It also modifies the "/etc/X11/XF86Config" configuration file.

QUESTION NO: 17 CORRECT TEXT
What is the name of the X configuration tool that runs in a simplified X-like environment?

Answer: XF86Setup
Explanation: XF86Setup - A newer X configuration program with a GUI interface which modifies the "/etc/X11/XF86Config" configuration file.

QUESTION NO: 18
Which of the following lines from /etc/X11/XF86Config indicates what fonts can be found on a font server?

A. FontPath= server
B. Fonts "unix/:7100"
C. FontPath "unix/:7100"

D. Fonts= server
E. Fontserver = "servername"

Answer: C
Explanation: In XF86Config FontPath "path" -
sets the search path for fonts. This path is a comma separated list of font path elements which the X server searches for font databases. Multiple FontPath entries may be specified, and they will be concatenated to build up the fontpath used by the server. Font path elements may be either absolute directory paths, or a font server identifier. Font server identifiers have the form: <trans>/<hostname>:<port-number>
where <trans> is the transport type to use to connect to the font server (e.g., unix for UNIX-domain sockets or tcp for a TCP/IP connection), <hostname> is the hostname of the machine running the font server, and <port-number> is the port number that the font server is listening on (usually 7100).

QUESTION NO: 19 CORRECT TEXT
Type in the command that would start an application to check for colour depth of an X window.

Answer: xwininfo
Explanation: Xwininfo is a utility for displaying information about windows. Various information is displayed depending on which options are selected.

QUESTION NO: 20
What command will tell you the color depth of your display?

A. xwininfo
B. xvidtune
C. xcd
D. xcdepth
E. xvidepth

Answer: A
Explanation: Xwininfo is a utility for displaying information about windows. Various information is displayed depending on which options are selected.

QUESTION NO: 21
Which of the following best describes the order in which X Window files are executed or read ?

A. startx -> xinit -> xinitrc -> Xclients
B. xinit -> startx -> Xclients -> xinitrc
C. xinitrc -> Xclients -> startx -> xinit
D. Xclients -> startx -> xinitrc -> xinit

Answer: A

QUESTION NO: 22
Your system boots into a typical runlevel 3, so users generally use startx to get a graphical shell. What file can users modify in their home directory to determine the window manager started by startx?

A. .xinitrc
B. .Xclients
C. .wmrc
D. .desktop

Answer: B

QUESTION NO: 23
Which series of programs and scripts most closely defines a standard X Window System startup process as executed from a character-mode console?

A. kde -> kdm -> Xdefaults -> Xclients
B. startx -> Xclients -> Xsession -> fvwm
C. startx -> xinitrc -> Xclients -> xinit
D. startx -> xinit -> xinitrc -> Xclients
E. xinit -> Xsession -> startx -> Xclients

Answer: D

QUESTION NO: 24 CORRECT TEXT
What command line tool can be used to display the window attributes of an X window. Type in the command line without flags or path.

Answer: xwininfo
Explanation: Xwininfo is a utility for displaying information about windows. Various information is displayed depending on which options are selected.

QUESTION NO: 25
You have booted a desktop Linux system and logged in. When you type "startx", a mouse error occurs almost immediately. What's the most likely cause of the problem?

A. a reboot is needed
B. the gpm malfunctioned and must be reloaded
C. the wrong mouse protocol is selected
D. the wrong mouse mode is set
E. a modeline is incorrectly set

Answer: C
Explanation: for a normal PS/2 mouse you should use
"Protocol" "IMPS/2"

Section 2, (1.110.2) Setup a display manager (12 Questions)

Description: Candidate should be able setup and customize a Display manager. This objective includes turning the display manager on or off and changing the display manager greeting. This objective includes changing default bitplanes for the display manager. It also includes configuring display managers for use by X-stations. This objective covers the display managers XDM (X Display Manger), GDM (Gnome Display Manager) and KDM (KDE Display Manager).
Key files, terms, and utilitiesinclude:

/etc/inittab
/etc/X11/xdm/*
/etc/X11/kdm/*
/etc/X11/gdm/*

QUESTION NO: 1
What command can be used to cause changes to the inittab file to take effect without a system reboot?

A. init q
B. init r
C. inittab r
D. inittab q

Answer: A
Explanation: To provide for an instantaneous response, the init Q or q command can wake up init to re-examine the /etc/inittab file.

QUESTION NO: 2 CORRECT TEXT
Type in the full path and name of the file that you would edit to change the default startup runlevel of the system so that it starts an X session on bootup instead of a text mode session.

Answer: /etc/inittab
Explanation: The file /etc/inittab is read by init process to control system behavior in particular runlevel.

QUESTION NO: 3
You want to have the process /etc/myprocess to run when the system enters run level 2. You want the system to wait until the process completes. Which of the following inittab entries would accomplish this?

A. 7:2:wait:/etc/myprocess
B. 2:7:wait:/etc/myprocess
C. wait:2:7:/etc/myprocess

D. wait:7:2:/etc/myprocess

Answer: A
Explanation: The first entry is the label, the second is runlevel. Therefore you should choose A before B.

QUESTION NO: 4
You want to have the process /etc/myprocess run when the system enters run level 3. Which of the following inittab entries would accomplish this?

A. 5:3:once:/etc/myprocess
B. 3:4:once:/etc/myprocess
C. once:3:4:/etc/myprocess
D. once:5:3:/etc/myprocess

Answer: A
Explanation: The first entry is the label, the second is runlevel. Therefore you should choose A before B.

QUESTION NO: 5 CORRECT TEXT
Do changes to the inittab file require a reboot in order to take effect?

A. No
B. Yes

Answer: A
Explanation: No, you can wake up init to re-examine the inittab file.

QUESTION NO: 6
You have just set up the X Display Manager.
What file is typically used as the primary configuration file for XDM?

A. xdm.config
B. XF86Config
C. xdm.conf
D. Xsetup
E. xdm-config

Answer: E
Explanation: xdm-config defines the names and locations of the other configuration files and the basic access permissions.

QUESTION NO: 7
What file is used to configure the XDM daemon?

A. xdm-config
B. xdm.conf
C. xdmcfg
D. xdaemon.conf
E. None of the above

Answer: A
Explanation: xdm-config defines the names and locations of the other configuration files and the basic access permissions.

QUESTION NO: 8
You have just set up the KDE Display Manager as your default display manager. What file should you edit to change the default greeting?

A. prefdm
B. XF86config
C. Kdmrc
D. Kdm.conf

Answer: C

Explanation: The main configuration file is kdmrc; all other files are referenced from there and could be stored under any name anywhere on the system - but usually that would not make much sense for obvious reasons (one particular exception is referencing configuration files of an already installed xdm - however when a new kdm is installed, it will import settings from those files if it finds an already installed xdm).

QUESTION NO: 9
What file does init processes use as its control file?

A. /etc/inittab
B. /etc/proc
C. /etc/init
D. /etc/initproc

Answer: A
Explanation: The file /etc/inittab is read by init process to control system behavior in particular runlevel.

QUESTION NO: 10
What line in the /etc/inittab file sets the runlevel a machine will enter when a graphical login is desired?

A. id:5:initdefault
B. si:5:sysinit:/etc/rc.d/rc.sysinit
C. x:5:respawn:/etc/X11/prefdm -nodaemon
D. d) # 5 - X11

Answer: A
Explanation: The default boot runlevel is set in the file /etc/inittab with the initdefault variable. When set to 3, the system boots up with the text interface on the VGA console; when set to 5, you get the GUI.

QUESTION NO: 11

You have just set up the Gnome Display Manager as your default display manager. What file should you edit to change the default greeting for it?

A. /etc/X11/prefdm
B. /etc/X11/XF86Config
C. /etc/X11/gdm.conf
D. /etc/X11/gdm/lnit/Default

Answer: D

QUESTION NO: 12
You have just set up the X Display Manager as your default display manager. What file should you edit to change the default background for it?

A. /etc/X11/xdm/Xsetup
B. /etc/X11/prefdm
C. /etc/X11/XF86Config
D. /etc/X11/xdm.conf

Answer: A

Section 3, (1.110.4) Install & Customize a Window Manager Environment (19 Questions)

Description: Candidate should be able to customize a system-wide desktop environment and/or window manager, to demonstrate an understanding of customization procedures for window manager menus and/or desktop panel menus. This objective includes selecting and configuring the desired x-terminal (xterm, rxvt, aterm etc.), verifying and resolving library dependency issues for X applications, exporting X-display to a client workstation.

Key files, terms, and utilitiesinclude:
.xinitrc
.Xdefaults
xhost
DISPLAY environment variable

QUESTION NO: 1
You are the administrator for all desktop systems at your company. You do not have a desktop standard and the users are free to use any window manager they choose.
Which of the following methods would be easiest to add a menu item to all users' main menu?

A. There is no easy solution to this problem.
B. Use rsync to synchronize all menus with a central server.
C. Write a script that adds the menu item and have users run it.
D. Add the changes to the /etc/default/main-menu configuration file.
E. Use your package manager to upgrade all the packages at once.

Answer: C
Explanation: All other suggestions fail as you don't know what window manager the users have and how it keeps it's configuration data.

QUESTION NO: 2
What is the configuration file for the xscreensaver?

A. xscreensaver.conf
B. .xscreensaver
C. xsaver.conf
D. xdm-config

Answer: B
Explanation: Options to xscreensaver are stored in one of two places: in a .xscreensaver file in your home directory; or in the X resource database. If the .xscreensaver file exists, it overrides any settings in the resource database.

QUESTION NO: 3
What switch will set the foreground color in X?

A. fg
B. foreground
C. xfg

D. fregrnd
E. None of the above

Answer: A

QUESTION NO: 4
Which of these commands will list the shared libraries used by the KDE application kpanel?

A. ldd kpanel
B. /usr/lib kpanel
C. kdd / opt/ kde/ bin/kpanel
D. ldd / opt/ kde/ bin/kpanel
E. ldconfig / opt/ kde/ bin/ kpanel

Answer: D
Explanation: ldd will list the shared libraries if provided the full path to the KDE application kpanel

QUESTION NO: 5
Which of the following are windows managers? Choose all that apply.

A. Xfce
B. Afterstep
C. IceWM
D. FVWM
E. BlackBox

Answer: A, B, C, D, E
Explanation: See more at
http://www.linux.org/apps/all/GUI/Window_Managers.html

QUESTION NO: 7 CORRECT TEXT

What environment variable will remote X application check to see which X server it should send output to?

Answer: DISPLAY
Explanation: The magic word is DISPLAY. In the X window system, a display consists (simplified) of a keyboard, a mouse and a screen. A display is managed by a server program, known as an X server. The server serves displaying capabilities to other programs that connect to it.

QUESTION NO: 8
What environment variable is used to remotely display another machines X session on yours?

A. DISPLAY
B. XSESSION
C. SCREEN
D. TTY
E. None of the above

Answer: A
Explnation: The DISPLAY consists of a hostname, a colon, and a sequence number. For example localhost:0

QUESTION NO: 9 CORRECT TEXT
You are running X in networked environment. You want to allow anyone on your network to display their X applications on your desktop. What command can you use to disable all access control for X?

Answer: xhost -
Explanation: xhost - the server access control program for X. The xhost program is used to add and delete host (computer) names or user names to the list of machines and users that are allowed to make connections to the X server. This provides a rudimentary form of privacy control and security.

QUESTION NO: 10 CORRECT TEXT
You wish to enable remote X access for the hosts: Host1, Host2 and Host3. Type in the command and any needed arguments to do this.

Answer: xhost +Host1 Host2 Host3
Explanation:
1. xhost + hostname: Adds hostname to X server access control list.
2. xhost - hostname: Removes hostname from X server access control list.
3. xhost + : Turns off acccess control (all remote hosts will have access to X server)
4. xhost - : Turns access control back on.

QUESTION NO: 11 CORRECT TEXT
You are the system administrator for an X server, and experience attempts to initiate an unathorized session from host21. What command with options and arguments would deny access only to host21 for X sessions?

Answer: xhost -host21
Explanation:
1. xhost + hostname: Adds hostname to X server access control list.
2. xhost - hostname: Removes hostname from X server access control list.
3. xhost + : Turns off acccess control (all remote hosts will have access to X server)
4. xhost - : Turns access control back on.

QUESTION NO: 12
What is the function of the .Xdefaults file?

A. Provides the defaults for new users X programs
B. A default user X profile, used as a template
C. User customizations for programs
D. KDE default user configuration file

Answer: C

Explanation: You can use this file to change the way some of your X-window applications look. It's fun to try out different styles and get some settings that please your eye. Before you try to do this however, make a backup.

QUESTION NO: 13
Which of the following is the default XFree86 configuration file?

A. /usr/X11R6/etc/XF86Config
B. /var/X11/XF86Config
C. /etc/Xll/XF86Config
D. /usr/etc/X11/XF86Config

Answer: C
Explanation: When you configure the Vide card, monitor type, resolution using xf86config command, all information stores in /etc/X11/XF86Config file and when Linux start GUI reads the information from this file.

QUESTION NO: 14
Your senior administrator asked you to change the default background of his machine, which uses XDM. Which file would you edit to achieve this?

A. /etc/X11/xdm/Xsetup
B. /etc/X11/xdift.conf
C. /etc/X11/xdm/Defaults
D. /etc/X11/defaults.conf

Answer: A

QUESTION NO: 15

You just started X for the first time and noticed that the display does

not use the entire screen. What program can you use to fix this?

A. xvidtune
B. xf86config
C. XF86Setup
D. tweakscreen

Answer: B
Explanation: When you configure the Vide card, monitor type, resolution using xf86config command, all information stores in /etc/X11/XF86Config file and when Linux start GUI reads the information from this file.

QUESTION NO: 16
Which of the following commands will print the current video settings to stdout in xf86Config "Modeline " format?

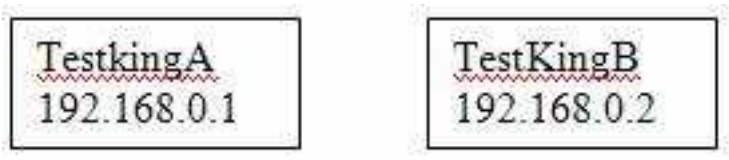
A. xinfo -mode
B. xset -info
C. xf86config -list
D. xvidtune -show

Answer: D
Explanation: xvidtune [-show | -prev | -next | -unlock] [-toolkitoption ...]
Show - Print the currently selected settings to stdout in xorg.conf "Modeline" format. The primary selection is similarly set.

QUESTION NO: 17
You are using an application that you want to appear on the screen of another machine. What environment variable would you have to set or edit to achieve this?

A. DISPLAY
B. REMOTE
C. REMOTE_XWINDOW
D. SCREEN

Answer: A
Explanation: To share the terminal between multiple hosts, we can export display.
Example



Suppose you want to run application on TestkingB from TestkingA.
TestkingB in GUI Terminal:# xhost +192.168.0.1
TestKingA in GUI Terminal:# export DISPLAY=192.168.0.2:0
xterm

QUESTION NO: 18
Your Linux machine is set to boot to the graphical runlevel. You have updated some RPMs on your system and now you don't see video when the system boots. What line should you add/modify to the /etc/inittab file to boot in console mode?

Answer: x:5:respawn:/etc/X11/prefdm -nodaemon

Explanation: It specifies that x windows system should run on runlevel 5 as a nondaemon.

QUESTION NO: 19
On a system where the X window system is installed, but no additional window manager, a startup of X will by default:

A. start the twm window manager.
B. start the xwm window manager.
C. drop you to a console.
D. start with xterm as its one client.
E. fail with an error

Answer: A
Explanation: metacity is the default window manager in the GNOME desktop.
Twm is the window manager that is used as a fall-back default.
Kwm is the window manager of KDE.

Here is the script written in /etc/X11/prefdm, which scripts read when system load X window system.

```
# Run preferred X display manager
preferred=
if [ -f /etc/sysconfig/desktop ]; then
 . /etc/sysconfig/desktop
 if [ "$DISPLAYMANAGER" = GNOME ]; then
 preferred=gdm
 elif [ "$DISPLAYMANAGER" = KDE ]; then
 preferred=kdm
 elif [ "$DISPLAYMANAGER" = XDM ]; then
  preferred=xdm
 fi
fi
shopt -s execfail
```

So, First Preferred Display Manager is gdm, loads metacity windows manager. If gdm not found, then loads the kdm and loads the kwm. If nither found then loads twm.