## – Question 01:

- Which of the following characters in a shell prompt indicates the shell is running with root privileges?
    - A. !
    - **B. #**
    - C. *
    - D. &
    - E. $

## – Question 02:

- Which of the following directories must be mounted with read and write access if it resides on its own dedicated file system?
    - A. /opt
    - B. /lib
    - C. /etc
    - **D. /var**
    - E. /usr

## – Question 03:

- What is the preferred source for the installation of new applications in a Linux based operating system?
    - A. The vendor's version management system
    - B. A CD-ROM
    - **C. The distribution's package repository**
    - D. The vendor's website
    - E. A retail store

## – Question 04:

- Which of the following commands are used to get information on the proper use of ls? (Choose two correct answers.)
    - A. option ls
    - B. usage ls
    - C. manual ls
    - **D. man ls**
    - **E. info ls**

## – Question 05:

- Which of the following devices represents a hard disk partition?
    - A. /dev/ttyS0
    - B. /dev/sata0
    - C. /dev/part0
    - **D. /dev/sda2**
    - E. /dev/sda/p2

## – Question 06:

- Which of the following permissions are set on the /tmp/ directory?
    - **A. rwxrwxrwxt**
    - B. ------rwX
    - C. rwSrw-rw
    - D. rwxrwS--
    - E. r-xr-X—t

## – Question 07:

- What is a Linux distribution?
    - A. The Linux file system as seen from the root account after mounting all file systems.
    - **B. A bundling of Linux kernel, system utilities and other software.**
    - C. The set of rules which governs the distribution of Linux Kernel source code.
    - D. An operating system based on Linux but incompatible to the regular Linux kernel.
    - E. A set of changes to Linux which enable Linux to run on another processor architecture.

## – Question 08:

- Which of the following DNS record types hold an IP address? (Choose two.)
    - A. NS
    - B. AAAA
    - **C. MX**
    - **D. A**
    - E. CNAME

## – Question 09:

- Why are web browser cookies considered dangerous?
    - **A. Cookies support identification and tracking of users.**
    - B. Cookies are always public and accessible to anyone on the internet.
    - C. Cookies consume significant amounts of storage and can exhaust disk space.
    - D. Cookies store critical data which is lost when a cookie is deleted.
    - E. Cookies can contain and execute viruses and malware.

## – Question 10:

- Which package management tool is used in Red Hat-based Linux Systems?
  - A. portage
  - **B. rpm**
  - C. apt-get
  - D. dpkg
  - E. packagectl

## – Question 11:

- Which of the following commands creates the ZIP archive poems.zip containing all files in the current directory whose names end in .txt?
  - A. zip *.txt > poems.zip
  - B. zcat *.txt poems.zip
  - **C. zip poems.zip *.txt**
  - D. zip cfz poems.zip *.txt
  - E. cat *.txt | zip poems.zip

## – Question 12:

- How is a new Linux computing instance provisioned in an IaaS cloud?
  - A. The standard Linux installer has to be run through a remote console.
  - B. After buying a Linux distribution, its vendor delivers it to a cloud instance.
  - C. The installation has to be prepared in a local virtual machine which is then copied to the cloud.
  - D. The cloud hosting organization provides a set of pre-prepared images of popular Linux distributions.
  - **E. A provider-specific configuration file describing the desired installation is uploaded to the cloud provider.**

## – Question 13:

- Which of the following directories contains information, documentation and example configuration files for installed software packages?
  - **A. /usr/share/doc**
  - B. /etc/defaults
  - C. /var/info
  - D. /doc
  - E. /usr/examples

## – Question 14:

- Which of the following are typical services offered by public cloud providers? (Choose three correct answers.)
  - **A. Platform as a Service (PaaS)**
  - **B. Infrastructure as a Service (IaaS)**
  - C. Internet as a Service (IaaS)
  - D. Graphical as a Service (GaaS)
  - **E. Software as a Service (SaaS)**

## – Question 15:

- Which of the following Linux distributions is derived from Red Hat Enterprise Linux?
  - A. Raspbian
  - B. OpenSUSE
  - C. Debian
  - D. Ubuntu
  - **E. CentOS**

## – Question 16:

- Which of the following commands can be used to resolve a DNS name to an IP address?
  - A. dnsname
  - B. dns
  - C. query
  - **D. host**
  - E. iplookup

## – Question 17:

- Reverse DNS assigns hostnames to IP addresses. How is the name of the IP address 198.51.100.165 stored on a DNS server?
  - A. In the A record for 165.100.51.198.ipv4.arpA.
  - **B. In the PTR record for 165.100.51.198.in-addr.arpA.**
  - C. In the RNAME record for 198.100.51.198.rev.arpA.
  - D. In the ARPA record for 165.100.51.198.rev.
  - E. In the REV record for arpA.in-addr.198.51.100.165.

## – Question 18:

- What is true about links in a Linux file system?
  - A. A symbolic link can only point to a file and not to a directory.
  - B. A hard link can only point to a directory and never to a file.
  - C. When a target of a symbolic link is moved, the link is automatically updated.
  - **D. A symbolic link can point to a file on another file system.**

    E. Only the root user can create hard links.

## – Question 19:

- Which of the following is a protocol used for automatic IP address configuration?
  - A. NFS
  - B. LDAP
  - C. SMTP
  - D. DNS
  - **E. DHCP**

## – Question 20:

- Which of the following commands adds the directory /new/dir/ to the PATH environment variable?
  - A. $PATH=/new/dir/; $PATH
  - B. PATH=/new/dir/; $PATH
  - C. export PATH=/new/dir/; PATH
  - D. export $PATH=/new/dir/; $PATH
  - **E. export PATH=/new/dir/; $PATH**

## – Question 21:

- What parameter of ls prints a recursive listing of a directory content? (Specify ONLY the option name without any values or parameters.)
  - **A. Mastered**
  - B. Not Mastered
- Explanation: ls -R

## – Question 22:

- A user is currently in the directory /home/user/Downloads and runs the command ls ../Documents/. Assuming it exists, which directory's content is displayed?
  - A. /home/user/Documents
  - B. /home/user/Documents/Downloads
  - C. /home/user/Downloads/Documents
  - **D. /Documents/**
  - E. /home/Documents

## – Question 23:

- Which of the following commands extracts the contents of the compressed archive file1.tar.gz
  - A. tar -czf file1.tar.gz
  - B. ztar file1.tar.gz
  - **C. tar -xzf file1.tar.gz**
  - D. tar --extract file1.tar.gz
  - E. detar file1.tar.gz

## – Question 24:

- Which commands adds the new user tux and creates the user's home directory with default configuration files?
  - A. defaultuser tux
  - **B. useradd -m tux**
  - C. usercreate tux
  - D. useradd -o default tux
  - E. passwd -a tux

## – Question 25:

- What information can be displayed by top?
  - A. Existing files, ordered by their size.
  - **B. Running processes, ordered by CPU or RAM consumption.**
  - C. User accounts, ordered by the number of logins.
  - D. User groups, ordered by the number of members.
  - E. Users accounts, ordered by the number of files.

## – Question 26:

- What are the differences between hard disk drives and solid state disks? (Choose two correct answers.)
  - **A. Hard disks have a motor and moving parts, solid state disks do not.**
  - B. hard disks can fail due to physical damage, while solid state disks cannot fail.
  - C. Solid state disks can store many times as much data as hard disk drives.
  - D. /dev/sda is a hard disk device while /dev/ssda is a solid state disk.
  - **E. Solid state disks provide faster access to stored data than hard disks.**

## – Question 27:

- A directory contains the following three files:

```
texts1.txt
texts2.txt
texts3.csv
```

- Which command copies the two files ending in *.txt to the /tmp/ directory?
  - A. cp ??.txt /tmp/

B. cp *.txt /tmp/
C. c
D. \.tmp /tmp/
E. cp ?.txt /tmp/
F. cp $?.txt /tmp/

## – Question 28:

- What happen to a file residing outside the home directory when the file owner's account is deleted? (Choose two.)
  A. During a file system check, the file is moved to /lost+found.
  B. The file is removed from the file system.
  **C. The UID of the former owner is shown when listing the file's details.**
  D. The user root is set as the new owner of the file.
  **E. Ownership and permissions of the file remains unchanged.**

## – Question 29:

- Which of the following commands will search for the file foo.txt under the directory /home?
  A. search /home –file foo.txt
  B. search /home foo.txt
  C. find /home --file foo.txt
  **D. find /home --name foo.txt**
  E. find /home foo.txt

## – Question 30:

- Which of the following statements is true about Free Software?
  A. It is developed by volunteers only.
  **B. It may be modified by anyone using it.**
  C. It must always be available free of charge.
  D. It only runs on Linux.
  E. It is only distributed as a compiled binary.

## – Question 31:

- What are the differences between a private web browser and a regular web browser window? (Choose three.)
  A. Private web browser windows do not allow printing or storing websites.
  **B. Private web browser windows do not store cookies persistently.**
  C. Private web browser windows do not keep support logins into websites.
  **D. Private web browser windows do not keep records in the browser history.**
  **E. Private web browser windows do not send regular stored cookies.**

## – Question 32:

- What is true about a recursive directory listing?
  **A. It includes the content of sub-directories.**
  B. It includes the permissions of the directory listed.
  C. It includes details of file system internals, such as inodes.
  D. It includes ownership information for the files.
  E. It includes a preview of content for each file in the directory.

## – Question 33:

- Which of the following keys can be pressed to exit less?
  A. l
  B. x
  C. e
  **D. q**
  E. !

## – Question 34:

- Members of a team already have experience using Red Hat Enterprise Linux. For a small hobby project, the team wants to set up a Linux server without paying for a subscription. Which of the following Linux distributions allow the team members to apply as much of their Red Hat Enterprise Linux knowledge as possible?
  A. Ubuntu Linux LTS
  B. Raspbian
  C. Debian GNU/Linux
  **D. CentOS**
  E. openSUSE

## – Question 35:

- Which of the following types of bus can connect hark disk drives with the motherboard?
  A. The RAM bus
  B. The NUMA bus
  C. The CPU bus
  **D. The SATA bus**
  E. The Auto bus

- Question 36:
    - The current directory contains the following file:
    
    `-rwxr-xr-x 1 root root 859688 Feb 7 08:15 test.sh`
    - Given that the file is a valid shell script, how can this script be executed? (Choose two correct answers.)
        - A. run test.sh
        - B. ${test.sh}
        - C. cmd ./test.sh
        - D. ./test.sh
        - E. bash test.sh

- Question 37:
    - What can be found in the /proc directory?
        - A. One directory per installed program.
        - B. One device file per hardware device.
        - C. One file per existing user account.
        - D. One directory per running process.
        - E. One log file per running service.

- Question 38:
    - What command displays manual pages? (Specify ONLY the command without any path or parameters.)
        - A. man

- Question 39:
    - Which of the following tasks can the command passwd accomplish? (Choose two.)
        - A. Change a user's username.
        - B. Change a user's password.
        - C. Create a new user account.
        - D. Create a new user group.
        - E. Lock a user account.

- Question 40:
    - What is true about an owner of a file?
        - A. Each file is owned by exactly one user and one group.
        - B. The owner of a file always has full permissions when accessing the file.
        - C. The user owning a file must be a member of the file's group.
        - D. When a user is deleted, all files owned by the user disappear.
        - E. The owner of a file cannot be changed once it is assigned to an owner.

- Question 41:
    - Where is the operating system of a Raspberry Pi stored?
        - A. On the master device attached to the Raspberry PI's IDE bus.
        - B. On a read only partition on the Raspberry PI's firmware, next to the BIOS.
        - C. On a removable SD Card which is put into the Raspberry Pi.
        - D. On a Linux extension module connected to the Raspberry PI's GPIO pins.
        - E. On rewritable flash storage which is built into the Raspberry Pi.

- Question 42:
    - Which of the following programs is a graphical editor for vector graphics?
        - A. Python
        - B. NGINX
        - C. Samba
        - D. Inkscape
        - E. MySQL

- Question 43:
    - Which of the following tar options handle compression? (Choose two correct answers.)
        - A. -bz
        - B. -z
        - C. -g
        - D. -j
        - E. -z2

- Question 44:
    - The file script.sh in the current directory contains the following content:
    
    `#!/bin/bash echo $MYVAR`
    `The following commands are used to execute this script:`
    `MYVAR=value`
    `./script.sh`
    - The result is an empty line instead of the content of the variable MYVAR. How should MYVAR be set in order to make `script.sh` display the content of MYVAR?
        - A. !MYVAR=value
        - B. Env MYVAR=value

    C. MYVAR=value
    D. $MYVAR=value
    E. **export MYVAR=value**

## – Question 45:

- A new server needs to be installed to host services for a period of several years. Throughout this time, the server should receive important security updates from its Linux distribution. Which of the following Linux distributions meet these requirements? (Choose two.)
  - A. **Ubuntu Linux LTS**
  - B. Fedora Linux
  - C. Debian GNU/Linux Unstable
  - D. Ubuntu Linux non-LTS
  - E. **Red Hat Enterprise Linux**

## – Question 46:

- What is the purpose of the PATH environment variable?
  - A. **It allows the execution of commands without the need to know the location of the executable.**
  - B. It increases security by preventing commands from running in certain locations.
  - C. It specifies the location of a user's home directory.
  - D. It indicates the location of the default shell to be used when a user logs in.
  - E. It contains the absolute path to the current directory.

## – Question 47:

- Most commands on Linux can display information on their usage. How can this information typically be displayed?
  - A. By running the command with the option /? Or /??.
  - B. By running the command with the option ?! or ?=!.
  - C. By running the command with the option /doc or /documentation.
  - D. By running the command with the option -h or --help.
  - E. **By running the command with the option -m or --manpage.**

## – Question 48:

- Which of the following outputs comes from the command free?
  - A. Option A

```
12:49:28 up 50 min,  1 user,  load average: 0.15, 0.08, 0.02
```
  - B. Option B

```
%Cpu(s):  0.8 us,  4.4 sy,  0.0 ni, 90.1 id,  0.0 wa,  4.5 hi,  0.2 si,  0.0 st
```
  - C. Option C

```
Filesystem           Size  Used Avail Use% Mounted on
/dev/mapper/cl-root   22G  4.9G   17G  23% /
```
  - D. Option D

```
8.0K      Downloads/
```
  - E. **Option E**

```
              total        used        free      shared  buff/cache   available
Mem:        3826240      945876     1902896       17444      977468     2636416
Swap:       2621436           0     2621436
```

## – Question 49:

- What is the return value of a shell script after successful execution?
  - A. 1
  - B. **-1**
  - C. -255
  - D. 255

## – Question 50:

- A directory contains the following files:

```
a.txt
b.txt
c.cav
```

- What would be the output of the following shell script?

```
for file in *.txt
do
  echo $file
done
```
  - A. **\*.txt**
  - B. a b
  - C. c.cav
  - D. A.txt
  - E. txt

- Show all files with *.txt (`a.txt` and `b.txt` – tested!!)

– **Question 51:**
- Which of the following commands sorts the output of the command export-logs?
  - A. export-logs < sort
  - B. export-logs > sort
  - C. export-logs & sort
  - **D. export-logs | sort**
  - E. export-logs <> sort

– **Question 52:**
- Which of the following commands outputs the content of the file Texts 2.txt? (Choose two.)
  - **A. cat 'Texts 2.txt'**
  - **B. cat -- Texts 2.txt**
  - C. cat |Texts 2.txt|
  - D. cat 'Texts\ 2.txt'
  - E. cat Texts\ 2.txt

– **Question 53:**
- What information is stored in /etc/passwd? (Choose three correct answers.)
  - A. The user's storage space limit.
  - **B. The numerical user ID.**
  - **C. The username.**
  - **D. The encrypted password.**
  - E. The user's default shell.

– **Question 54:**
- What is true about the dmesg command? (Choose two correct answers.)
  - A. It traces the execution of a command and shows each step the program carries out.
  - B. It sends messages to the command lines of all current user sessions.
  - **C. It displays the content of the Linux kernel's ring buffer.**
  - D. It immediately outputs all new messages written to the system journal.
  - **E. It might not display older information because it was overwritten by newer information.**

– **Question 55:**
- Running the command `rm Downloads` leads to the following error: `rm: cannot remove 'Downloads/': Is a directory`.
  Which of the following commands can be used instead to remove Downloads, assuming Downloads is empty? (Choose two correct answers.)
  - A. undir Downloads
  - **B. rmdir Downloads**
  - C. dir -r Downloads
  - D. rem Downloads
  - **E. rm -r Downloads**

– Question 56:
- Which of the following outputs could stem from the command last?
  - A. 1 ls 2 cat text.txt 3 logout
  - B. Password for user last changed at Sat Mar 31 16:38:57 EST 2018
  - C. Last login: Fri Mar 23 10:56:39 2018 from server.example.com
  - D. EXT4-fs (dm-7): mounted filesystem with ordered data mod
  - E. Opts: (null)
  - **F. root tty2 Wed May 17 21:11 – 21:11 (00:00)**

– **Question 57:**
- What keyword is used in a shell script to begin a loop? (Specify one keyword only, without any additional information.)
  - **A. Mastered**
  - B. Not Mastered
- Explanation: `for`

– **Question 58:**
- Which of the following examples shows the general structure of a for loop in a shell script?
  - A. for *.txt as file => echo $file
  - B. for *.txt (echo $i)
  - **C. for file in *.txt do echo $i done**
  - D. for ls *.txt exec{} \;
  - E. foreach @{file} { echo $i }

– **Question 59:**
- What is the true about the su command?
  - A. It is the default shell of the root account.
  - B. It can only be used by the user root.
  - **C. It runs a shell or command as another user.**
  - D. It changes the name of the main administrator account.

E.   It locks the root account in specific time frames.

# – Question 60:
- Which of the following commands puts the lines of the file data.csv into alphabetical order?
    - A.   a..z data.csv
    - **B.   sort data.csv**
    - C.   abc data.csv
    - D.   wc –s data.csv
    - E.   grep –sort data.csv

# – Question 61:
- Which command displays the file names only and no additional information?
    - **A.   ls –a**
    - B.   ls –lh
    - C.   ls –l
    - D.   ls –alh
    - E.   ls –nl

# – Question 62:
- Which command copies the contents of the directory /etc/, including all sub directories, to /root/?
    - A.   copy /etc /root
    - **B.   cp –r /etc/* /root**
    - C.   cp –v /etc/* /root
    - D.   rcp /etc/* /root
    - E.   cp –R /etc/*.* /root

# – Question 63:
- Which of the following statements are true regarding a typical shell script? (Choose two.)
    - **A.   It has the executable permission bit set.**
    - B.   It starts with the two character sequence #!.
    - C.   It is located in /usr/local/scripts/.
    - D.   It is located in /etc/bash/scripts/.
    - **E.   It is compiled into a binary file compatible with the current machine architecture.**

# – Question 64:
- Which of the following commands shows the absolute path to the current working directory?
    - A.   who
    - B.   cd ..
    - **C.   pwd**
    - D.   ls –l
    - E.   cd ~/home

# – Question 65:
- What is the UID of the user root?
    - A.   1
    - B.   –1
    - C.   255
    - D.   65536
    - **E.   0**

# – Question 66:
- Which of the following programs are web servers? (Choose two.)
    - **A.   Apache HTTPD**
    - B.   Postfix
    - C.   Curl
    - D.   Dovecot
    - **E.   NGINX**

# – Question 67:
- Which of the following commands creates an archive file work.tar from the contents of the directory ./work/?
    - A.   tar –new work.tar ./work/
    - **B.   tar –cf work.tar ./work/**
    - C.   tar –create work.tgz –content ./work/
    - D.   tar work.tar < ./work/
    - E.   tar work > work.tar

# – Question 68:
- Which permissions are set on a regular file once the permissions have been modified with the command chmod 654 file.txt?
    - A.   drw-r-xr--
    - B.   d----wxr-x-
    - C.   --wxr-x--x
    - D.   -rwxrw---x
    - **E.   -rw-r-xr–**

## – Question 69:

- Which operator in a regular expression matches the preceding character either zero or one time?
    - **A. ?**
    - B. *
    - C. +
    - D. %
    - E. $

## – Question 70:

- The ownership of the file doku.odt should be changed. The new owner is named tux. Which command accomplishes this change?
    - A. chmod u=tux doku.odt
    - B. newuser doku.odt tux
    - **C. chown tux doku.odt**
    - D. transfer tux: doku.odt
    - E. passwd doku.odt:tux

## – Question 71:

- Which of the following commands finds all lines in the file operating-system.txt which contain the term linux, regardless of the case?
    - A. igrep linux operating-system.txt
    - B. less -i linux operating-system.txt
    - **C. grep -i linux operating-system.txt**
    - D. cut linux operating-system.txt
    - E. cut [Ll] [Ii] [Nn] [Uu] [Xx] operating-system.txt

## – Question 72:

- When typing a long command line at the shell, what single character can be used to split a command across multiple lines?
    - **A. Mastered**
    - B. Not Mastered
- Explanation: **\**

## – Question 73:

- Which of the following statements regarding Linux hardware drivers is correct?
    - A. Drivers are regular Linux programs which have to be run by the user who wants to use a device.
    - B. Drivers are not used by Linux because the BIOS handles all access to hardware on behalf of Linux.
    - C. Drivers are stored on their devices and are copied by the Linux Kernel when a new device is attached.
    - D. Drivers are downloaded from the vendor's driver repository when a new device is attached.
    - **E. Drivers are either compiled into the Linux kernel or are loaded as kernel modules.**

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# # Old Version – LPI-010-150 #

## – Question 74:

- Which of the following programs is not a graphical web browser?
    - A. Konqueror
    - B. Firefox
    - **C. Links**
    - D. Opera
    - E. Chrome

## – Question 75:

- Which one of the following is true about Open-Source software?
    - A. Open-Source software cannot be copied for free.
    - **B. Open-Source software is available for commercial use.**
    - C. The freedom to redistribute copies must include binary or executable forms of the software but not the source code.
    - D. Open-Source software is not for sale.

## – Question 76:

- Which of the following answers are true about cloud computing? (Choose two)
    - **A. Cloud Computing provides new tools to manage IT resources.**
    - **B. From the business perspective, Cloud Computing means outsourcing or centralization of IT operations.**
    - C. Cloud Computing is the opposite of green IT; i.e. the use of fossil, non-regenerative energy for computing.
    - D. Cloud Computing implies sharing all information with everyone else in "the cloud".

# - Question 77:

- What does LAMP means?
  - A. The Linux Advanced Mode Programming Interface which gives advanced capabilities to application developers.
  - B. The bus ID of an attached USB device that emits light.
  - C. Short for Lightweight Access Management Protocol which synchronizes permissions in a network.
  - **D. The combination of Linux, Apache, MySQL and PHP or other programming languages.**
  - E. Short for Lamport-clock which is important in distributed network computing.

# - Question 78:

- Which of the following services are used for network file systems? (Choose Two)
  - A. Rumba
  - B. Python
  - **C. Samba**
  - D. OpenLDAP
  - **E. NFS**

# - Question 79:

- Which of the following possibilities is only available when using open-source software?
  - A. Download of all its existing versions.
  - B. Free use.
  - C. Access to its detailed help manual
  - **D. Access to its source code**

# - Question 80:

- Which of the following is a Linux based operating system for use on mobile devices?
  - A. iOS
  - B. CentOS
  - **C. Android**
  - D. Debian

# - Question 81:

- Which of the following is a requirement of the GPL license but not the BSD license?
  - **A. Users who modify and distribute the software under the GPL license, must make the modifications they made, available to the recipients under the same license.**
  - B. The GPL license forbids the removal of copyright and license notices from source code files that are distributed.
  - C. The GPL license contains a disclaimer of warranty requiring users not to hold the software authors liable for any damages.
  - D. The GPL license requires that any legal disputes be settled with the mediation of the Free Software Foundation.

# - Question 82:

- Which of the following statements is true for a Linux distribution used in an enterprise environment?
  - A. These distributions contain proprietary business-related software.
  - **B. These distributions contain software versions that have proven to be stable even if it is not the recent version in order to minimize problems.**
  - C. These distributions always contains the newest versions of all packages to minimize the time to market of new features.
  - D. These distributions are only affordable by large companies.

# - Question 83:

- Which of the following applications are popular Open Source relational database systems? (Choose two)
  - **A. PostgreSQL**
  - B. NoSQL
  - **C. MySQL**
  - D. DB/2
  - E. MongoDB

# - Question 84:

- When using a web browser, what should a user do to prevent private data from being stored locally?
  - **A. Browsers can be configured to use a private mode that does not store any data locally.**
  - B. Set up a second profile and use only that one to access sensitive sites.
  - C. Delete the profile directory in the home directory and create a new one after the work is done.
  - D. Use the secure versions of the browser available.
  - E. There is no way to achieve that because Linux always logs network data.

# - Question 85:

- Which statements are true about virtualization? (Choose two)
  - A. Virtualization is not supported by Linux because of its permissions and multi-user requirements.
  - **B. Virtualization lets you run several operating systems on the same hardware in parallel.**
  - C. Virtualization is a proprietary technology that has additional licence costs even for Linux.
  - D. Virtualization is a pure desktop technology that should not be used on servers.

E. Virtualization allows separation of services, tasks and users in distinct virtual machines.

**– Question 86:**
- Which of the following software packages is a mail server?
  - A. **Postfix**
  - B. Thunderbird
  - C. Apache
  - D. GIMP
  - E. MySQL

**– Question 87:**
- Which statements are correct regarding distributions? (Choose two)
  - A. **Programs can be installed manually and without a packet manager.**
  - B. Only commercial distributions offer regular security updates.
  - C. To start a new distribution a Linux International license is needed.
  - D. Distributions restrict the user to its supported program packages.
  - E. **Program packages of one distribution can be adapted for another.**

**– Question 88:**
- Which command shows if /usr/bin is in the current shell search path?
  - A. cat PATH
  - B. **echo $PATH**
  - C. echo %PATH
  - D. cat $PATH
  - E. echo %PATH%

**– Question 89:**
- Which of the following commands will output a list of all of the file names, under your home directory and all subdirectories, which have file names ending with .pdf?
  - A. search .pdf
  - B. ls –name –R '*.pdf'
  - C. find /home/*.pdf
  - D. **find ~ –name '*.pdf'**

**– Question 90:**
- When creating a new file, what can be done to make the file hidden from the default output of the ls command?
  - A. Hide the file with a name commented out with a hash sign like #foobar.txt.
  - B. **Hide the file with a name beginning with a period like .foobar.txt.**
  - C. Hide the file with chvis +h filename.
  - D. Hide the file with chmod a+h filename.
  - E. Hide the file with hide filename.

**– Question 91:**
- Which command lists all files in the current directory that start with a capital letter?
  - A. **ls [A–Z]***
  - B. ls A–Z
  - C. ls A–Z*
  - D. ls --uppercasefiles
  - E. list-uppercase-files

**– Question 92:**
- While deleting all files beginning with the letter a there was still the file Access.txt left. Assuming that it had the correct ownership, why was it not deleted?
  - A. Files with extensions need a different treatment.
  - B. rm had to be called with the option –R to delete all files.
  - C. The file Access.txt was probably opened by another application.
  - D. The file Access.txt was hidden.
  - E. **Linux file names are case sensitive.**

**– Question 93:**
- Which of the following programs is used to search for files in a file system?
  - A. **locate**
  - B. showfiles
  - C. flocate
  - D. search
  - E. findfiles

**– Question 94:**
- Which command line can be used to search help files that mention the word "copy"?
  - A. **man –k copy**
  - B. whatis copy
  - C. man copy
  - D. copy help
  - E. copy –help

- **Question 95:**
  - Which command shows all of the directories that the shell searches for programs?
    - A.  less $PWD
    - **B.  echo $PATH**
    - C.  more $ALL_PATH
    - D.  get $PATH
    - E.  cat $PATH

- **Question 96:**
  - Which of the following is a valid option for a typical command to get its built-in usage information?
    - A.  -?
    - B.  -H
    - C.  help
    - D.  --manual
    - **E.  -help**

- **Question 97:**
  - Which of the following is an example of globbing?
    - A.  ls /etc/ 2> files.txt
    - B.  ls /etc/ > files.txt
    - **C.  ls /etc/*.txt**
    - D.  ls /etc/ | more

- **Question 98:**
  - Which of the following commands increases the number of elements in a directory? (Choose two)
    - **A.  touch newfile**
    - B.  create newfile
    - C.  ls newfile
    - D.  rmdir newdirectory
    - **E.  mkdir newdirectory**

- **Question 99:**
  - In order to rename the directory ~/bilder/letzter-urlaub to ~/bilder/sommer-2011, which command line could be used?
    - **A.  mv ~/bilder/letzter-urlaub ~/bilder/sommer-2011**
    - B.  move ~/bilder/letzter-urlaub ~/bilder/sommer-2011
    - C.  cp -m ~/bilder/letzter-urlaub ~/bilder/sommer-2011
    - D.  copy -m ~/bilde/letzter-urlaub ~/bilder/sommer-2011
    - E.  rename ~/bilder/letzter-urlaub ~/bilder/sommer-2011

- **Question 100:**
  - Which of the following commands will display a list all files in the current directory including the hidden files?
    - **A.  ls -a**
    - B.  ls --hidden
    - C.  ls -h
    - D.  ls -a

- **Question 101:**
  - What command would you use to get comprehensive documentation about any command in Linux?
    - A.  help command
    - B.  echo command
    - C.  locate command
    - **D.  man command**
    - E.  get command

- **Question 102:**
  - Which command will delete the directory foo with all its content?
    - A.  rmdir -a foo
    - **B.  rm -r foo**
    - C.  rm -a foo
    - D.  rmdir foo

- **Question 103:**
  - Which command is used to make a shell variable known to subsequently executed programs?
    - **A.  export -**
    - B.  announce -
    - C.  env -
    - D.  transfer -
    - E.  mv -