1. What is the Linux Operating System?

A modified version of GNU system where Linux is the kernel. The Linux kernel was initial made to mimic UNIX kernel. In addition to the kernel the GNU utilities, a graphical desktop environment and application software makes up a Linux Operating System.

1. Name at least 3 major parts of what makes up the Operating System.

Linux kernel, GNU utilities, Application Software, Graphical desktop environment.

1. The Kernel is the heart of the Linux Operating System.  How can you tell what version of the kernel you are running?

By using the command prompt ‘uname -a’ we can determine the kernel version.

1. What are the parts of the Kernel and what do they do?

**Process management/Software program Management:** The kernel creates the ‘init process’ or the first process. Kernel allocates space to store the data and code in virtual memory for each process that follows ‘init process’.

**Memory management:** There is a space on the hard disk called the swap space. The kernel moves the contents of virtual memory back and forth from swap space and actual physical memory. This makes the system to think that there is more memory available than what physically exists. The kernel tracks how often different memory pages are used and their location either in the swap space or in the physical memory. The memory pages not used for a long time are swapped out into the swap space. When a program needs to use a memory page that is in swap space, the kernel needs to make room for it in physical memory by swapping out a different memory page.

**Hardware device drivers:** This is run by driver code that is integrated into kernel code. It allows the kernel to pass data back and forth to the devices, acting as a middleman between applications and the hardware.

**File system drivers:** Linux system can support different types of filesystems to read and write data to and from hard drives.

1. What is a Process?

A running program is a process

1. What does running in the foreground and running in the background mean?

A process that runs in the foreground displays output on a display or a process can run in the background behind the scenes.

1. What is the name of the first process that the Linux system creates?

Init process

1. Kernel communicate with devices through Drivers ( True or False )\_\_\_\_.

True

1. There is no need to rebuild the kernel when you install new devices because Modules allow you to insert and remove Driver code in the Live Kernel. ( True or False)\_\_\_\_.

True

1. All devices in Linux are identified by the kernel as Files. The types of files are Character, Block and Network (True or False)\_\_\_\_.

True

1. Describe what a character device is and give one example.

The character device files are for devices that can only handle data one character at a time such as most types of modems.

1. Block devices handle data blocks at a time--example are Disk Drives--(True or false)

True

1. Which kind of file type will be used to send packets?

Network files

1. What is the name of the special device files created by Linux for all devices on the system and makes use of a Major number and a Minor Number?

Nodes

1. What is a File System?

A system to read and write data to and from hard drives.

1. List at least 3 Linux file system types?

nfs, ext, msdos, jfs, XFS

1. What is GNU?

GNU stands for GNU’s Not Unix. This is an operating system put together by people working for freedom of all software. The goal of GNU is to offer/develop a complete set of Unix compatible utilities that would be free software or open source software (OSS).

Who started the concept? Richard Stallman in 1983

1. Describe the purpose of the SHELL

The shell allows the entering of text commands, it then interprets the commands and executes them in the kernel.

1. What piece of software works directly with your Video card and Monitor in the PC when it comes to presenting graphics?

The X Window software

1. List at least 2 Desktops for Linux.
   * The K Desktop Environment (KDE)
   * The GNU Object Model Environment (GNOME)
2. What do you call a complete Linux system package?

Distribution

1. **What is a Live CD and name at least 3 live Distros?**

**Allows you to boot your PC, pop in a CD and run Linux without installing anything on the hard drive. In other words, all the Linux software will run directly from the CD. Some of the examples are Knoppix, PCLinuxOS, Ubuntu, Puppy.**

1. What is a Console?

This is a shell command line interface (CLI) on the monitor.

1. When Linux starts, it creates many virtual consoles. ( True or False)\_\_\_\_\_.

True

1. CLI (command line interface) was the only means of accessing Linux before the Graphical User Interfaces were developed (True or False) \_\_\_\_\_.

True

1. How to access the virtual console?

Hold down CTRL + ALT combination and press a function key (F1 to F7) depending on the virtual console you want to use.

1. What two things must every user have to log onto a Linux system?

User ID and password

1. How do you see what shell you are in?

The last field of a /etc/passwd file specifies the user’s shell program.

1. Linux is an operating system and has a hierarchical file system that begins with the root directory '/'.  All files and directories are created relative to the '/' directory (True or False)?

True

1. How do you switch user from one user to another?

By using su command