Computer Hardware and Windows PE Command Language

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Objective: The purpose of this lab was to build windows PE 10 onto a bootable USB flash drive.

Questions: **Describe what BIOS, UEFI and POST are and what function they serve?**

The POST is a diagnostic testing program to test if the I/O, RAM, disks, and hardware are working properly. The BIOS and UEFI are both boot managers but operate in slightly different ways

**What special keys were used to access BIOS, System Diagnostics and the BIOS Boot Menu?**

F2 can be used to access BIOS, F1 can be used to access System Diagnostics, and F9 can be used to access the BIOS Boot Menu

**What is Windows PE and how it was installed on the USB Flash drive from the ISO folder?**

Windows PE is a preinstallation environment and its installed on the USB drive by copying over files from the hard drive.

**What drive letter was given to the bootable Windows PE operating system? What is unique about this letter?**

The letter X was assigned to the OS, this letter is reserved for the OS drive specifically.

**Describe three kinds of Partitions and three types of Allocation systems recognized by Windows PE**

Primary Partitions are installed as part of a boot sector, Logical Partitions are sub-partitions within a primary partition, an extended partition is multiple logical partitions acting/coupled together. Contiguous allocation is when each file is in contiguous blocks on a disk, linked allocation is when a file can occupy separate disk blocks but linked through the directory, and indexed allocation is linked allocation that is linked with an addition index block.

**What command would be used from a Windows PE command prompt to manage the storage devices?**

The Diskpart command is used to manage storage device.

**Explain what command would be used to clean a hard drive of all its data. What is the outcome to the hard drive after the clean command is executed?**

The clean command can be used to wipe the hard drive. The result of the clean command is a fully empty hard drive apart from partitions.

**What does the message BOOTMGR missing mean when startup the Windows operating system?**

Windows is booting from the wrong drive/ partition.

**Describe the structure of a mechanically operated hard drive: Tracks, Sectors, Platters &Heads**

A track is a division of data on the platter that runs around the disk like a ring, a sector can either be the space between tracks or a 30 degrees area extending from the center of the platter to the edge, the platter is a plate that stores data, the heads are used to read/write data on to the platter.

**Under an MBR based system, how are drive letters allocated?**

A and B are used for floppy drives, primary drive is C, the rest of the letters are assigned subsequently.