**It Essential A+ Notes**

**USB:**

USB 1.0 has a speed of 1.5 Mbits/s at “Low speed” and 12 Mbits/s at “full Speed”.

USB 2.0 has a speed of 480Mbits/s

USB 3.0 has a speed of up to 5 Gbits/s (640MB/s)

Max Length is 15 Feet, 127 devices on one port.

**Firewire:**

Also now as IEEE 1394, i.LINK, and Lynx.

Supports up to 63 devices with a max length of 15 feet.

It has a speed of 400 Mbits/s.

**Ipconfig Commands:**

/all Displays the full configuration of all network adapters.

/release Releases the IP address of a network adapter.

/renew Renews the IP address of a network adapter.

/flushdns Empties the cache that stores DNS information.

/registerdns Refreshes DHCP leases and reregisters the adapter with DNS.

/displaydns Shows DNS information in the cache.

**Protocols, their ports and descriptions:**

HTTP port 80, 8080, 8085, Transports webpages over a TCP/ IP network

HTTPS port 443 network, Securely transports webpages over a TCP/I

SMTP port 25, Sends email over a TCP/IP network

Telnet/SSH Ports 23/22, Provides connections to computers over a TCP/IP network

FTP port 20 or 21, Transports files over a TCP/IP network

DNS Port 53, Translates URLs to IP addresses

DHCP Ports 67 and 68, Automates the assignment of IP addresses on a network

TFTP Port 69, Used to transfer files over a network.

VPN 50,500

POP3: 110

**OSI Model:** Application, Presentation , Session, Transportation, Networking, Datalink, Physical (All people seem to need data processing)

**TCP/IP Model:** Application, Transport, Internet, Network Access ( ATINa)

**IP Adress Classes: A:**1-126 **B:**128-191 **C:**192-223 **D:**224

**A:**255.0.0.0 **B:**255.255.0.0 **C:**255.255.255.0 **D:**255.255.255.255

+12V Yellow +5V RED +3V Orange 0 Ground Black -5V White -12V Blue

Which type of drive is used for external data storage, attaches using a 7-pin connector, and has max cable length of two meters (6.56 Feet)? **\*eSata**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Standard | Bandwidth | Frequency | Maximum Range | Interoperability |
| IEEE 802.11a | Up to 54 Mbps | 5 GHz Band | 45.7m (150 feet) | None except a. |
| IEEE 802.11b | Up to 11 Mbps | 2.4 GHz Band | 91M (300 feet) | Compatible with g. |
| IEEE 802.11g | Up to 54 Mbps | 2.4 GHz Band | 91M (300 feet) | Compatible with b. |
| IEEE 802.11n | Up to 540 Mbps | 2.4 GHz or 5 GHz Band | 250M (984 feet) | Compatible with b and g. |

bps: bits per second Kbps: kilobits per second Mbps: megabits per second

**What’s true about TIA/EIA? \***It developed standards to replace proprietary standards after U.S. telephone industry deregulation.

**Boot Process:** 12 Steps

**1.** Start. **2.** Power On Self Test (POST) **3.** Tests all installed adapter cards **4.** BIOS reads MBR. **5.** MBR takes control starts NTLDR. **6.** NTLDR reads Boot.ini to determine which OS to load and where the OS files are located in boot.ini file. **7**. NTLDR uses NTDetect.com to look for new hardware installed. **8.** NTLDR loads Ntoskrnl.exe and hal.dll **9.** NTDLR Reads the Registry files and loads device drivers. **10.** Ntoskrnl.exe starts win logon.exe **11.** Windows log on screen appears **12**. Stop.

**Switches use MAC addresses**

+12v yellow wire Used By disk drive motors, fans, cooling devices, and system bus slots

+5v Red Wire Motherboard, early processors, many motherboard components

+3.3V Orange Wire Modern CPU and AGP video cards

0v Black Wire Ground, the return loop for circuits

-5V White Wire ISA expansion slots and early PROMs

-12V Blue Wire Some serial ports and early PROMs

AT Power supplies did not have the 3.3 volst and used a mechanical switch. The BIOS and OS could not control the power supply through the Advanced Configuration and Power Interface (ACPI).

**Complete Computer memory chart**

**DDR Memory Chart**

|  |  |  |  |
| --- | --- | --- | --- |
| DDR Memory Table: specifications of DDR desktop memory | | | |
|  | **Type** | **Speed** | **Bus Speed** |
| **DDR** | PC2100 | 266Mhz | 133MHz |
| **DDR** | PC2700 | 333MHz | 166MHz |
| **DDR** | PC3200 | 400MHz | 200MHz |
| **DDR** | PC3500 | 433MHz | 216MHz |
| **DDR** | PC3700 | 466MHz | 233MHz |
| **DDR** | PC4000 | 500MHz | 250MHz |
| **DDR** | PC4200 | 533MHz | 266MHz |
| **DDR** | PC4400 | 550MHz | 275MHz |
| **DDR** | PC4500 | 566MHz | 283MHz |
| **DDR** | PC4800 | 600MHz | 300MHz |
| **DDR** | PC5000 | 625MHz | 313MHz |

**DDR2 Memory Chart**

|  |  |  |  |
| --- | --- | --- | --- |
| DDR2 Memory Table: specifications of DDR2 desktop memory | | | |
|  | **Type** | **Speed** | **Bus Speed** |
| **DDR2** | PC2-4200 | 533MHz | 266MHz |
| **DDR2** | PC2-5400 | 667MHz | 333MHz |
| **DDR2** | PC2-6000 | 750MHz | 375MHz |
| **DDR2** | PC2-6400 | 800MHz | 400MHz |
| **DDR2** | PC2-8000 | 1000MHz | 500MHz |
| **DDR2** | PC2-8800 | 1100MHz | 550MHz |
| **DDR2** | PC2-9000 | 1120MHz | 560MHz |

**DDR3 Memory Chart**

|  |  |  |  |
| --- | --- | --- | --- |
| DDR3 Memory Table: specifications of DDR3 desktop memory | | | |
|  | **Type** | **Speed** | **Bus Speed** |
| **DDR3** | PC3-6400 | 800MHz | 400MHz |
| **DDR3** | PC3-8500 | 1066MHz | 533MHz |
| **DDR3** | PC3-10666 | 1333MHz | 667MHz |
| **DDR3** | PC3-12800 | 1600MHz | 800MHz |
| **DDR3** | PC3-14400 | 1800MHz | 900MHz |
| **DDR3** | PC3-16000 | 2000MHz | 1000MHz |

Preventive Maintenance Helps Protect against future problems.

What’s a good reason to update the BIOS? \*For new hardware compatibility

Sysprep prepares a computer for imaging.

Print Spooler= Administrative

Reset Monitor settings, use the f8 key.

Sata1- up to 150 megabytes per second (MB/s)

Sata2- up to 300 MB/s

Sata-up to 600 MB/s

1. If you install Windows 2000 on a drive with multiple partitions, where does Windows install its boot loader? \* The first Partition
2. Steve’s pc includes a hard drive that connects to the computer’s motherboard by means of a 7-wire cable with a single interface. \* Serial ATA (SATA)
3. Which statements about IDE drives are true? \* You must use a 40-pin connector with IDE drives. You can attach two IDE drives on the same controller as long as the drivers are configured as master and slave.

What two statements are true concerning the FAT32 file system?

- FAT32 supports shared-folder security. – FAT32 uses smaller cluster sizes than FAT16.

NTFS supports file-level security.

SIMM has 30pins with tin connectors, 72 with gold connectors.

DIMM computer memory modules have 168 pins. (With ECI)

SO-DIMM 144 Pin

RIMM has 184-pins

Smart cards use PKI authentication technology.

A BSOD that mentions *IRQL\_NOT\_LESS\_OR\_EQUAL* IS caused by a device driver.

CTRL+BREAK= interrupts a ping command

Remote Assistance uses port 3389

A Parallel port has 25 pins

Hyper-Threading uses virtual processors to perform multitasking.

Laser printer has a fuser and main control board.

System Restore Requires 200MB of hard drive space.

AM2= Athlon64=socket 754