**2014 IT Symposium PC Troubleshooting Contest**

**Written portion of contest**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**High School \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Each student will have a pencil a scantron and a question booklet.

Test must be turned in within 50 minutes or less from the start time.

Students cannot use other students, devices, computers or references in this test. This is an individual test with no help.

**Speed** will be a factor for tie scores. If a tie, the student that turned in their documentation first will win. If all use the full time and turn in at the same time, the morning scores will be used to break the tie.

**\*CORRECT ANSWER INDICATED BY ASTERISK\***

You setup a wireless router in your home to share your DSL internet connection between two computers. Each computers connects to the router but cannot access the internet. One computer has an IP address of 169.254.14.243 the other computer’s IP address is 169.254.132.43. What most likely the problem?

DHCP is not setup on the router\*

DNS is not setup on the router

The network cards are disabled

The modem for the internet is off

Which command will display network interface adapters in a Linux environment?

Ipconfig

Ifconfig\*

Netstat

Show run

What components are necessary for a computer to POST?

CPU, RAM, Motherboard, Video Card\*

CPU, RAM, Motherboard, Hard Drive

CPU, RAM, Hard Drive

RAM, Motherboard

POST is an acronym for?

Power On Self Test\*

Power On Stress Test

Pass Online Self Test

Power On Self Trial

Which command is used to execute the Registry Editor program?

REGGUI.EXE

REGMGR.EXE

REGEDITOR.EXE

REGEDIT.EXE\*

A RAID is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Redundant Array of Independent Disks\*

Redundant Array of Irreparable Drives

Redundant Array of Intermediate Disks

Redundant Array of Illegal Drives

Which of the following networking utilities sends out an echo message to a remote host and waits for a response confirming the remote host is reachable?

netstat.exe

ping.exe\*

echo.exe

nslookup.exe

A user has requested a floppy drive for their computer so that they can recover files from old floppy disks. After you have installed the drive you boot into Windows and find that the drive is not seen in Windows Explorer. You notice that the activity light on the drive is on and not flashing. What is the problem?

The ribbon cable is installed backwards\*

The power cable is installed backwards

The drive is not compatable with with operating system

The drive needs to be configured in the BIOS

Which utility is used to rearrange a file into one continuous string of clusters?

Fdisk

Chkdsk

Defrag\*

scndsk

After troubleshooting problems with a computer you make the diagnosis that the power supply is bad and needs to be replaced. What is the most major concern when buying a new power supply?

The new power supply is at least the same wattage as the old power supply\*

There are enough connectors on the new power supply

The voltage of the new power supply is the same as the old power supply

The power supply uses the same type of screws as the old power supply

What is the maximum number of characters allowed in a Windows XP file name?

127

255\*

511

1023

What technique can be used to handle memory fragmentation in the Mac OS?

Shut down and restart the computer

Implement virtual memory

Close all of the applications

All of these\*

Which of these is the largest?

1 terabyte

1petabyte

1 gigabyte

1exabyte\*

In order to dual boot, both operating systems must be on their own\_\_\_\_\_\_\_\_\_

Hard drive

Partition\*

Physical disk

Division

How many bits are in 1 byte?

8\*

32

1024

128

Which of the following computer components can retain a lethal electrical charge even after the device is unplugged?

Processor

Monitor\*

Hard Drive

RAM

Which frequency do most wireless routers operate on?

2.4 GHz\*

2.3 GHz

2.5 GHz

2 GHz

IP v4 uses a \_\_\_\_\_ bit address

128

64

32\*

256

Ipv6 users a \_\_\_\_\_ bit address

128\*

64

32

256

You have just purchased a new large hard disk and want to partition the disk. Which of the following commands could you use to partition the disk?

FDISK\*

MPARTITION

XPART

CHKDSK

PCI is an acronym for

Peripheral Component Interconnect\*

Peripheral Connect Interface

Peripheral Component Interface

Peripheral Connection Interconnect

CPU is an acronym for

Central Processing Unit\*

Control Processing Unit

Central Programming Unit

Control Program Unit

A 1xx POST error code indicates a problem with the:

Video

RAM or ROM

Hard Drive

System Board\*

User Maria calls you to complain that her system is totally dead today. It was working fine when she left the last evening. Which of the following must you check first?

Test the power supply

Replace the CMOS battery

Check the AC outlet\*

Reseat the hard drive controller cable

Your client's computer refuses to connect to the network. You observe the NIC light is not ON and then use a different cable. What should you do next?

Attempt to log in to the server after again observing the NIC light status.\*

Replace NIC.

Replace NIC driver.

Consider it fixed.

Sally is having a problem with the network. She cannot log on from her computer although the computer is fine. You log on from her workstation using her username and password. Everything works fine. What is most likely the problem?

Server is down.

Defect patch cable used at her computer.

She does not have sufficient user rights.

She is entering the username or password incorrectly. \*

Your HDD does not respond upon powering ON your computer. What is the most likely problem?:

Bad data cable

Incorrect jumper setting on drive

Loose Molex or Sata connector\*

Virus

A 3xx POST error code indicates a problem with:

Mouse

Keyboard\*

Floppy Drive

Video Adapter

You boot your PC and don't hear the usual single beep. What should you check first?

System Board

Microprocessor

Power Supply

Speaker\*

Silicon lubricant is used with which of the following?

Mouse

Keyboard

Read/Write Heads

Rollers in Printer\*

A 4xx, 5xx, or 24xx POST error code indicates a problem with:

Hard Drive

IRQ Controller

Video Adapter\*

Keyboard

You switch on your PC and get no display. You are sure the monitor is ok. Which order would you follow for troubleshooting this problem?

Replace the video card, replace the monitor, replace the power supply, replace the system board, try a different monitor.

Check that PC and monitor are plugged in, check that monitor brightness is turned up, check that PC fan is running.\*

Check PC supply voltages, replace video card, replace CPU.

Check that everything is plugged in, replace system board.

What is the most likely consequence of a sudden power outage?

Lost data\*

RAM damage

Modem damage

Adapter card damage

A parity error usually indicates a problem with which of the following?

Memory\*

Hard Drive

Hard Drive Controller

I/O Controller

A 17xx POST error code indicates a problem with:

CMOS

ROM BIOS

DMA Controller

Hard Drive or Controller\*

\_\_\_\_\_\_\_\_\_\_\_\_\_ command is used to execute the Registry Checker program.

REGSCAN.EXE

CHKREG.EXE

REGCHK.EXE

SCANREG.EXE\*

Which of the following keys when pressed will ensure that file is permanently deleted from your computer without being stored in the Recycle bin?

CTRL

SHIFT \*

ALT

DEL

'Missing OS' could mean which of the following?

The system partition is corrupted

DBR is corrupted

MBR is corrupted\*

HDD has crashed

'Last Known Good Configuration' option when chosen during the boot up process, will read the necessary configuration from which of these in the registry?

Clone\*

Hkey\_Local\_Machine

Hkey\_Current\_Config

Hkey\_Current\_User

Which of the following is the correct order of execution for the following files in MS-DOS ?

IO.SYS, MSDOS.SYS, CONFIG.SYS, COMMAND.COM, AUTOEXEC.BAT\*

CONFIG.SYS, IO.SYS, MSDOS.SYS, COMMAND.COM, AUTOEXEC.BAT

MSDOS.SYS, IO.SYS, CONFIG.SYS, COMMAND.COM, AUTOEXEC.BAT

COMMAND.COM, IO.SYS, MSDOS.SYS, CONFIG.SYS, AUTOEXEC.BAT

What command line tool provides the same information as the Microsoft System Information Tool ?

MSINFO.EXE

WINFO.EXE

HWINFO.EXE\*

SYSINFO.EXE

You have installed a device recently that is stopping your windows from starting up. You fail to startup the system in spite of using the last know good configuration option. Trying various options you are able to access the system partition from the command prompt mode. Which of the following will you use to stop that problematic device from loading?

Device Checker

Automatic Skip Driver\*

System File Checker

Diagnostic Tool

RJ-45 connectors are used with which of the following cable types?

coax

Fiber-optic

1000Base-LX

10BASE-T \*

10Base-2 is also referred to as which of the following ?

Thicknet

Thinnet

Unshielded twisted-pair

Category 3 \*

1000Base-SX is a Fiber-optic cable.

True\*

False

A BNC barrel connector is used to connect two cables together, and increase the signal strength.

True

False\*

A BNC connector is used with which of the following cable types?

coaxial\*

Fiber-optic

Category 5

10Base-T

Which of the following IP addresses would a technician see if a computer is connected to a multifunction network device and is attempting to obtain an IP address automatically but is not receiving an IP address from the DHCP server?

172.16.10.10

192.168.0.10

169.254.10.10\*

192.168.10.10

80mm and 120mm are common sizes for what type of PC component?

Case fans\*

CPUs

Heat sinks

Memory modules

What does a yellow exclamation point next to a device in the Device Manager indicate?

A driver is not properly installed for this device. \*

The device is disabled.

The driver is not digitally signed.

The device driver needs to be upgraded.

Beep codes are generated by which of the following?

CMOS

RTC

POST \*

Windows

How should you apply spray cleaner to a monitor?

Spray the cleaner directly on the monitor screen.

Spray the cleaner on the top of the monitor and wipe down.

Spray evenly on the monitor.

Spray the cleaner on a clean, lint-free cloth first.\*

Which bus slot provides the highest video performance?

PCI

SCSI

AGP

PCIe \*

You just turned off a printer to maintenance it. What should you be careful of when removing the fuser?

The fuser being hot \*

The fuser being wet

The fuser being fragile

The fuser releasing toner

Which of the following connectors is used for musical equipment?

MIDI\*

HDMI

DVI

DisplayPort

Moving your CPU’s speed beyond its normal operating range is called \_\_\_\_\_\_\_\_\_\_\_\_\_.

Overclocking\*

Overdriving

Overpowering

Overspeeding

Which password is used in the BIOS (CMOS) to prevent end users from accessing the BIOS contents?

Supervisor\*

User

Administrator

Local

Why would the display on a laptop get dimmer when the power supply from the AC outlet is disconnected?

The laptop cannot use full brightness when on battery power.

Power management settings on the laptop.

To operate properly, laptop displays require an alternating current power source.

Security settings on the laptop.

Which tool should always be used when working on the inside of the computer?

Cordless drill

Antistatic strap\*

Multimeter

Screwdriver

What is one of the advantages of using the Dynamic Host Configuration Protocol (DHCP)? (

The network speed can automatically adjust based on the type of traffic being generated.

The hosts file on the computer can be validated for proper entries.

Media access control addresses can be changed.

Computers can automatically get new addressing when moved to a different network segment.\*

Which of the following storage technologies is used by traditional hard disk drives?

Magnetic\*

Optical

Impact

Solid-state

On which type of computer is RAM the most important?

Gaming PC

Virtualization workstation\*

AV workstation

HTPC

Which of the following is the default port for HTTPS?

Port 25

Port 80

Port 143

Port 443\*

What is the maximum distance at which a Class 2 Bluetooth device can receive signals from a Bluetooth access point?

100 meters

10 meters\*

5 meters

1 meter

You and a co-worker are running network cables above the drop ceiling. The co-worker accidentally touches a live AC power line and is thrown off the ladder and onto the ground. He is dazed and can’t stand. He is no longer near the AC power line. What should you do first?

Cut the power at the breaker.

Move the co-worker farther down the hall.

Apply CPR.

Call 911.\*

A customer reports that an optical drive in a PC is no longer responding. What question should you ask first?

“What has changed since the optical drive worked properly?”\*

“Did you log in with your administrator account?”

“What did you modify since the optical drive worked?”

“Have you been to any inappropriate websites?”

What wireless networking standard operates at 5 GHz only?

802.11a\*

802.11b

802.11g

802.11n

Which type of RAM has a peak transfer of 12,800 MB/s?

DDR3-800

DDR2-1600

DDR3-1600\*

DDR2-800

What is a possible symptom of a failing CPU?

CPU is beyond the recommended voltage range.\*

Computer won’t boot.

BIOS reports low temperatures within the case.

Spyware is installed into the browser.

Which of the following cable types is not affected by EMI but requires specialized tools to install?

Cat 6

STP

Fiber optic\*

Coaxial

A computer you are working on has a lot of dust inside it. How should you clean this?

Disassemble the power supply and remove the dust.

Use a vacuum to clean up the dust.

Use a surface dust cleaning solution.

Use compressed air to remove the dust.

Setting an administrator password in the BIOS accomplishes which of the following?

Prevents a user from rearranging the boot order\*

Prevents a user from reading e-mail

Prevents a virus from infecting the MBR

Prevents an attacker from opening the case

Which function is performed by the external power supply of a laptop?

Increases voltage

Stores power

Converts DC power to AC power

Converts AC power to DC power\*

Which type of cable has only two twisted pairs?

UTP

POTS line\*

Fiber

Coaxial

A co-worker is traveling to Europe and is bringing her computer. She asks you what safety concerns there might be. What should you tell her?

The computer is not usable in other countries.

Check for a compatible power adapter for that country.

Use a line conditioner for the correct voltage.

Check the voltage selector on the power supply.\*

What is an LCD display’s contrast ratio defined as?

Power consumption

Display resolution and brightness

The darkest and lightest outputs\*

Power savings

Which of the following tools can protect you in the case of a surge?

Torx wrench

Antistatic strap\*

Voltmeter

Antistatic mat

What connector can have audio and video pass through it?

VGA

RGB

DVI

HDMI\*

While you are working on a computer at a customer’s home, the customer informs you that he needs to leave for about 10 minutes and that his 8-year-old son can help you with anything if you need it. What should you do?

Tell the customer to get back home as soon as possible.

Tell the customer that you are not responsible for the child.

Tell the customer that an adult must be home while you work.\*

Tell the customer that the child must be removed.

Which device limits network broadcasts, segments IP address ranges, and interconnects different physical media?

Switch

WAP

Firewall

Router\*

You just upgraded the CPU. Which of the following can make your computer shut down automatically after a few minutes? (Select the best answer.)

Wrong CPU driver.

Wrong voltage to the CPU.

Incorrect CPU has been installed.

The CPU has overheated.\*

Which of the following is a valid IPv4 address for a network host?

127.0.0.1

169.254.0.0/16

172.17.58.254\*

255.10.15.7

If a lot of data is flowing through a network card, what should the activity light look like?

Unlit

Rapid, erratic flashing\*

Solid green

Solid yellow

You are working on a very old printer, and it starts to smoke. What should you do?

Turn off the printer.

Call 911.

Unplug the printer.\*

Call maintenance.

Which technology has the fastest data transfer rate?

802.11a

802.11b

802.11g

802.11n\*

You are asked to fix a problem with a customer’s domain controller that is outside the scope of your knowledge. What action should you take?

Learn on the job by trying to fix the problem.

Tell the customer that the problem should be reported to another technician.

Assure the customer that the problem will be fixed very soon.

Help the customer find the appropriate channels to fix the problem.\*

Of the following, which IP address is private?

11.58.254.169

169.255.10.41

172.31.1.1\*

192.169.0.1

What is the local loopback IPv6 address?

127.0.0.1

::1\*

192.168.0.0

FE80::/10

Which of the following statements is correct concerning IPv6 addresses?

They cannot be used with IPv4.

They are supported by all routers.

They represent addressing using 128 bits.\*

They require fiber-optic connections.

What operating CPU temperature is typical?

60° Fahrenheit

60° Celsius\*

72° Fahrenheit

72° Celsius

Which of the following best describes a hub?

Inspects traffic and accepts or declines transmission

Determines the best route to transmit data

Broadcasts data to all network devices\*

Broadcasts data to specific network devices

Which of the following is not a configuration that can be made in the BIOS?

Boot sequence

Temperature thresholds

Overclocking

Install drivers\*

Which of the following traits and port numbers are associated with POP3?

Receives inbound e-mail on port 110\*

Receives inbound e-mail on port 25

Sends outbound e-mail on port 110

Sends outbound e-mail on port 25

Which of the following controls the connection between the CPU and the PCIe x16 expansion slot?

Northbridge\*

Power supply

Memory

Memory controller

What is the recommended method for handling an empty toner cartridge?

Throw it away.

Incinerate it.

Refill it.

Recycle it.\*

Which type of cable would you use to connect a laptop directly to a PC?

Cat 5e patch cable

Parallel cable

IEEE 1394b cable

Cat 5e crossover cable\*

Which of the following can send data the farthest?

Multi-mode fiber

Single-mode fiber\*

STP

Coaxial

Which of the following is a typical speed of a SATA hard drive?

1000 Mbps

3.1 GHz

8 GB

7200 RPM\*

Which of the following best describes the differences between a switch and a router?

A switch interconnects devices on the same network so that they can communicate, whereas a router interconnects one or more networks.\*

A router broadcasts all data packets that are sent on the network, and a switch transmits data directly to the device.

A switch broadcasts all data packets that are sent on the network, and a router transmits data directly to the device.

A switch interconnects one or more networks, whereas a router interconnect devices on a network.

You are required to rip the contents of a CD to a compressed file format that can be read easily on PCs, Linux computers, or Macs. Which format should you select?

.AAC

.WMA

.MP3\*

.MOV

Your organization relies heavily on its server farm for resources and is less reliant on the client computers. Which type of client computer does the organization most likely use?

Virtualization workstation

Client/Server

Thin client\*

Thick client

After a blackout, the power comes back on, causing a surge to occur on all the computers and equipment in the office. Your co-worker’s laptop display doesn’t come on. However, if you look closely at the display, you can see that Windows is running, but very dimly. What could be the cause of this problem?

The inverter has been shorted out.\*

The power supply has failed.

The display is not getting power.

The display driver has failed.

Which tool would you use to test a 24-pin ATX 12v power connector?

Torx wrench

Multimeter\*

Receptacle tester

Tone and probe kit

Which of the following is an example of a broadband connection?

Cable Internet\*

Ethernet

Client/Server

IEEE 802.3

What is the speed of PC2700 RAM

333 Mhz\*

400 Mhz

266 Mhz

1066 Mhz

The physical shape of the motherboard is referred to as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Board attribute

Form size

Form factor\*

Board size