Exam Report: B.6 CompTIA 220-901 Certification Practice Exam

Date: 7/18/2017 1:38:26 pm Candidate: Stangl, Thomas (Email: tstangl@ciat.edu)
Time Spent: 16:40 of 01:30:00

Overall Performance

Your Score: 56%

Passing Score: 95%

View results by: Objective Analysis Individual Responses

Individual Responses

Question 1: Correct

All members of the Sales team use laptop computers while traveling to connect to the Internet. Each laptop has a built-in wireless network card that supports 802.11b/g/n. You have trained each user to be able to create new wireless connections in order to connect to wireless networks in airports and at hotels. You get a call from one user stating that her wireless connection no longer works. She has checked the wireless configuration and she knows it to be correct because other sales people at the same location are able to connect. What should you do first?

- Have her update the drivers for the wireless card.
- Have her purchase a USB wireless card to use until you can check the problem yourself.
- Have her verify that the wireless card's hardware switch is in the On position.
- Have her manually configure the wireless card to use only 802.11b.

Explanation

Have the user verify that the wireless card's hardware switch is in the On position. Many built-in wireless cards can be turned off and on using a switch or button on the laptop case. Because this is a common problem and easy to check, you should do this first before trying other solutions.

References

LabSim for PC Pro, Section 8.4.
[pcpro2016_all_questions_en.exm TRB NOTEBOOK_18]

Question 2: Incorrect

Which type of interface is typically used for internal wireless networking cards in laptops?

- ExpressCard/34
- Mini-PCI
- Firewire
- ~~USB~~

Explanation

Most internal wireless network cards in laptops connect using a mini-PCI interface. USB, Firewire, ExpressCard, are external buses for external devices.

References

LabSim for PC Pro, Section 8.2.

[pcpro2016_all_questions_en.exm NOTEBOOK_COMPONENTS_06]

Question 3: Incorrect

Which SATA storage device standard does the following?

- Integrates data and device power into a single cable
- Uses a connector and port that are neither L-shaped nor rectangular

eSATAp

~~eSATA~~

SATA

SATA3

SATA2

Explanation

eSATAp (also known as Power over eSATA or Power eSATA) is meant to replace eSATA. It combines the functionality of an eSATA and a USB port with a source of power in a single connector. It Integrates data and device power into a single cable, and the connector and port are neither L-shaped nor rectangular.

SATA1 is the original SATA standard. It provided for 1.5 Gbps (150 MBps) data transfer. SATA2 supports up to 3 Gbps (300 MBps). SATA3 support up to 6 Gbps (600 MBps). It mainly addresses solid state drives with SATA (hard disk drives are not capable of sending data at this rate). eSATA is a subset of other standards specifically for externally connected devices.

References

LabSim for PC Pro, Section 5.2.
[pcpro2016_all_questions_en.exm ESATAP]

Question 4: Correct

You have implemented an ad-hoc wireless network that doesn't employ a wireless access point. Every wireless network card can communicate directly with any other wireless network card on the network. What type of physical network topology has been implemented in this type of network?

Mesh

Tree

Bus

Star

Ring

Explanation

This type of network uses a physical mesh topology. There's no central connecting point. Any host can communicate directly with any other host on the network. A mesh network, such as this one, is usually impractical on a wired network. Each host would have to have a separate, dedicated network interface and cable for each host on the network. However, a mesh topology can be implemented with relative ease on a wireless network due to the lack of wires.

References

LabSim for PC Pro, Section 6.1.
[pcpro2016_all_questions_en.exm PC 2016 MESH TOPOLOGY_01]

Question 5: Correct

Which motherboard form factor allows for low-consumption power supplies?

- NLX
- Mini-ITX
- microATX
- EATX

Explanation

Mini-ITX motherboards are designed for lower-power, small form factor computers. Some Mini-ITX motherboards are designed to be used with 100 watt power supplies.

References

LabSim for PC Pro, Section 3.1.
[pcpro2016_all_questions_en.exm PC16_MOTHERBOARD_FF_04]

Question 6: Incorrect

Match each of the motherboard components on the left with the appropriate description on the right. Each component is used once.

Maintains an accurate system time and date, even when the power is off.	CMOS battery
Allows additional features and capabilities to be added to the motherboard.	Expansion slots
Houses the PCI bus controllers and communicates with the Super I/O controller.	Southbridge
Contains firmware that is used to configure motherboard settings and initialize devices.	~~Non-volatile BIOS memory~~ Flash memory
Controls communication between the CPU, memory, and high-speed graphics bus.	Northbridge
Stores custom configuration settings made by the user.	~~Flash memory~~ Non-volatile BIOS memory

Explanation

A typical motherboard includes the following components:

- **Expansion slots** allow you to expand the capabilities and features of a computer by installing expansion cards.
- **Firmware** is integrated software that is embedded in flash memory on the motherboard. Motherboards use either BIOS or UEFI firmware implementations. Because firmware is read-only, custom configuration settings are stored in non-volatile BIOS memory.
- The **CMOS battery** is used to maintain an accurate time and date, even when the motherboard has no power. Older systems used the CMOS battery to power the CMOS chip, which contained custom BIOS settings.
- The chipset is a group of chips that facilitates communication between the processor, memory, and peripheral devices. Older chipsets consist of two integrated circuits:
  - The **northbridge** controls communication between the CPU, memory, and high-speed

graphics bus.
- The **southbridge** houses the PCI bus controllers and communicates with the Super I/O controller.

References

LabSim for PC Pro, Section 3.3.
[pcpro2016_all_questions_en.exm PC16_MOTHERBOARDS_04-PB]

Question 7: Correct

You have just replaced the motherboard in your computer. Your computer starts, but the hard disk light does not come on while the system is booting.

What should you do?

- Connect the hard disk LED to the motherboard.
- Replace the hard disk.
- Connect the power LED to the motherboard.
- Access the UEFI setup program, and verify the hard disk has been detected.

Explanation

The system case hard disk LED connects to jumper pins on the motherboard. When the hard disk controller reads or writes data to a hard disk, power is sent to the hard disk LED pins on the motherboard, causing the case hard disk LED to light up. The case power button and LED also connect to the motherboard in a similar manner.

Because the system boots properly, the hard disk is being detected by the UEFI firmware and can be assumed to be functioning correctly.

References

LabSim for PC Pro, Section 3.4.
[pcpro2016_all_questions_en.exm TRB MB_02]

Question 8: Incorrect

Which kind of connector do you use to connect a modem to a standard telephone line?

- RJ-11
- ~~F-type~~
- RG-58
- RJ-45

Explanation

A standard telephone line connector is an RJ-11. RJ-45 jacks are used for Ethernet twisted pair cables. Video cards and monitors with a built-in TV tuner have an F-type video connector. RG-58 is used for 10Base2 Ethernet networking (also called Thinnet).

References

LabSim for PC Pro, Section 6.3.
[pcpro2016_all_questions_en.exm RJ-11]

Question 9: Correct

Which of the following devices can be used to distribute electrical power along with network data on twisted-pair Ethernet cabling (CAT 5 or higher)?

- Ethernet over Power

- [x] Power over Ethernet
- [ ] Ethernet multiplexer
- [ ] AC-enabled switch
- [ ] AC Circuit Router

Explanation

Power over Ethernet (PoE) technology can be used to distribute electrical power along with network data on twisted-pair Ethernet cabling (CAT 5 or higher). Power is usually supplied by a PoE-enabled Ethernet switch. PoE is commonly used to power network devices that are located where physical access to a power outlet may not be available. For example, a PoE-enabled surveillance camera mounted on a tall pole can be powered via its Ethernet cabling.

References

LabSim for PC Pro, Section 6.4.
[pcpro2016_all_questions_en.exm NETWORK COMPONENTS_03]

Question 10: Correct

Which of the following statements are true regarding power supply wattage? (Select two.)

- [ ] A system's wattage requirement does not depend on the amount of devices in the system.
- [ ] The lower the wattage rating, the more amps a power supply can deliver.
- [x] The wattage requirement for each individual circuit uses formula $W = V \times A$.
- [x] The watt rating indicates how much power can be supplied to various devices.
- [ ] A system's wattage requirement equals the highest wattage requirement for a single individual circuit.

Explanation

Power supplies are rated in watts. The watt rating indicates how much power can be supplied to various devices. The more devices you have in your computer, the more wattage you will require. You can calculate the system's wattage requirements using the following method:

1. Find the watt requirement for each component by multiplying volts by amps ($W = V \times A$).
2. Add each value together to find the total watt requirements.

References

LabSim for PC Pro, Section 3.2.
[pcpro2016_all_questions_en.exm PC16_POWER_SUPPLY_03]

Question 11: Correct

You are designing a wireless network for a client. Your client needs the network to support a data rate of at least 150 Mbps. In addition, the client already has a wireless telephone system installed that operates 2.4 GHz. Which 802.11 standard will work best in this situation?

- [ ] 802.11g
- [ ] 802.11b
- [x] 802.11n
- [ ] 802.11a

Explanation

802.11n is the best choice for this client. 802.11b and 802.11g both operate in the 2.4 GHz to 2.4835 GHz range, which will cause interference with the client's wireless phone system. 802.11a operates in the 5.725 GHz to 5.850 GHz frequency range, which won't interfere with the phone system. However, its maximum speed is limited to 54 Mbps.

References

LabSim for PC Pro, Section 6.8.
[pcpro2016_all_questions_en.exm 802.11N]

Question 12: Correct

Which of the following describes an IPv6 address? (Select two.)

- [x] 128-bit address
- [ ] 32-bit address
- [x] Eight hexadecimal quartets
- [ ] 64-bit address
- [ ] Four decimal octets

Explanation

IP version 6 addresses are 128-bit addresses. They are commonly written using 32 hexadecimal numbers, organized into 8 quartets. Each quartet is represented as a hexadecimal number between 0 and FFFF. The quartets are separated by colons. IP version 4 addresses are 32-bit addresses. They have four octets, each octet being a binary number of 8 digits. Each octet has a decimal value between 0 and 255.

References

LabSim for PC Pro, Section 6.7.
[pcpro2016_all_questions_en.exm IPV6_04]

Question 13: Correct

Recently your laptop doesn't power on and the battery is not charging. You suspect the block on the power cord (also known as a brick) no longer works. Which tool will help you troubleshoot this problem?

- ( ) Loopback plug
- ( ) Cable tester
- (•) Multimeter
- ( ) Power supply tester

Explanation

In this case, you should use a multimeter to test the DC current flowing from the brick. If the current is incorrect, then you may need a replacement AC adapter. A power supply tester is specifically designed to test DC current flowing from a PC power supply and its associated connectors. A cable tester verifies that a network can carry a signal from one end to the other, and that all wires within the connector are in their correct positions. A loopback plug lets you test a port for proper functionality. The loopback plug crosses the receive and transmit wires, letting the computer send a signal to itself.

References

LabSim for PC Pro, Section 8.4.

[pcpro2016_all_questions_en.exm TRB NOTEBOOK_12]

Question 14: Correct

You decided to upgrade your PC with a faster processor. To do this, you ordered a new motherboard over the Internet that supports the processor you want to use.

When it arrives, you discover that the motherboard uses the Mini-ATX form factor. Your current case is an ATX mid-tower with a standard ATX motherboard inside.

What should you do?

- ○ Drill new holes in the Mini-ATX motherboard to match the mounting hole pattern in the ATX case.
- ○ Drill new holes in the ATX case to match the mounting hole pattern in the Mini-ATX motherboard.
- ➡ ◉ Use the Mini-ATX motherboard in the ATX case.
- ○ Return the motherboard and replace it with an ATX form factor motherboard.

Explanation

ATX mid-tower cases support all ATX form factors, including Mini-ATX. The main difference between ATX and Mini-ATX is the number of bus and possibly memory slots on the motherboard. The mounting holes for both are located in the same place, making them interchangeable in most cases.

References

LabSim for PC Pro, Section 3.1.
[pcpro2016_all_questions_en.exm PC16_MOTHERBOARD_FF_03]

Question 15: Correct

You have been told to replace the hard drive on a laptop computer that has a drive bay accessible from the outside of the computer. Which of the following should you do after powering down the system? (Select two.)

- ☐ Disconnect the keyboard
- ☐ Disconnect the mouse
- ☐ Remove the system RAM
- ➡ ☑ Unplug the AC power
- ➡ ☑ Remove the battery

Explanation

Before servicing the laptop, all power should be removed from the unit, including AC and the battery. There is no need to disconnect the keyboard or mouse, or remove the memory.

References

LabSim for PC Pro, Section 8.2.
[pcpro2016_all_questions_en.exm NOTEBOOK_COMPONENTS_15]

Question 16: Correct

Which of the following is a general term for the program that holds system information related to the starting of a computer?

- ○ DRAM

- Cache memory
- ➡ CMOS
- UEFI

Explanation

CMOS is a general term for the program that stores important system information related to the starting of a computer. Data held in CMOS includes the hard disk type and configuration, the order of boot devices to try, and other configurable settings related to the system hardware. UEFI is firmware that was designed to replace BIOS. The UEFI program controls the startup process of a computer and loads the operating system into memory. Cache is an area of memory that holds recently-accessed data. Random Access Memory (RAM) is a temporary data storage location that can be read from and written to.

References

LabSim for PC Pro, Section 3.10.
[pcpro2016_all_questions_en.exm CMOS_02]

Question 17: Correct

You have a system that has been overheating. Which of the following actions will not help to keep the system cool?

- Adding thermal paste or a thermal pad between the CPU and the heat sink.
- Installing a water cooling system.
- Installing heat spreaders and heat sinks on internal components.
- ➡ Removing the case side panel.
- Cleaning off the inside of the computer case.

Explanation

Removing the case side panel will not keep a system from overheating. The system case has been specially designed to maximize air flow across system components. By removing the side panel, you modify the air flow path and reduce its effectiveness. In addition, removing the side panel allows more dust to accumulate. Dust acts as an insulator and traps heat close to components. Cleaning off the inside of the computer case, installing heat spreaders and heat sinks on internal components, installing a water cooling system, and adding thermal paste or a thermal pad between the CPU and the heat sink are all good ways to help keep a system cool.

References

LabSim for PC Pro, Section 3.14.
[pcpro2016_all_questions_en.exm COOLING_02]

Question 18: Correct

What is a major benefit of STP over UTP?

- Safer for installations in overhead ceiling spaces
- Lower cost
- Ability to install longer cable lengths
- ➡ Greater resistance to interference

Explanation

Shielded Twisted Pair (STP) has a grounded outer copper shield around the bundle of twisted pairs or around each pair. This provides added protection against EMI. Unshielded Twisted Pair (UTP) does not have a grounded outer copper shield.

References

LabSim for PC Pro, Section 6.3.
[pcpro2016_all_questions_en.exm STP VS UTP]

Question 19: Correct

Which of the following will most likely contain SODIMM memory?

- (selected) Notebook computers
- Printers
- Servers
- Desktop workstations

Explanation

Small outline dual in-line memory modules (SODIMM) is a compact form factor of DIMM. It is typically used in smaller computers such as notebooks.

References

LabSim for PC Pro, Section 3.7.
[pcpro2016_all_questions_en.exm SODIMM MEMORY]

Question 20: Correct

You recently purchased a new sound card and installed it in a free PCI slot in your computer. You plug in your old speakers, but you don't get any sound. You have checked all cable connections and they are secure. You have also ensured that the speaker volume is appropriately adjusted and isn't muted. What should you do next?

- Replace the speakers.
- Manually change the IRQ settings for the card.
- (selected) Check the vendor's Web site for an updated driver.
- Replace your sound card.

Explanation

Check the vendor Web site for an updated driver before further troubleshooting. Because the speakers worked before, you likely would not need to replace the speakers. PCI cards are plug-and-play, meaning that you should not need to manually configure resources such as IRQs. You should troubleshoot the problem completely before you resort to replacing the sound card.

References

LabSim for PC Pro, Section 3.10.
[pcpro2016_all_questions_en.exm SOUND CARD DRIVER]

Question 21: Correct

The PCI sound card in your computer stopped working. You decided to use the motherboard's integrated sound until you can replace the PCI sound card. After removing the PCI sound card and powering on the computer, you have no sound and the built-in sound card does not show up in Device Manager.

Which should you do to solve the issue?

Edit the CMOS settings and enable the onboard sound.

- Update the necessary audio codecs.
- Update the drivers for the device.
- Enable the sound card in Device Manager.

Explanation

When installing dedicated expansion card, you will typically disable the onboard device so that only the device you want to use shows in Device Manager. To make the onboard device detectable to Windows, enable the device in the CMOS settings.

You cannot update the device drivers or enable the device until Windows can detect the device and it appears in Device Manager. An audio codec is a file format for saving audio files. Sound cards require codecs to play sound files; however, the sound card must be properly configured before a codec can be used.

References

LabSim for PC Pro, Section 3.13.
[pcpro2016_all_questions_en.exm PC16_AUDIO_TRB_02]

Question 22: Incorrect

You are building one of your customers a home theater PC (HTPC) to connect to an HDTV and high-definition audio system. The customer is going to be playing mostly Blu-ray movies on the system.

Which of the following features should the sound card include? (Select two.)

- [ ] Line-level in port
- [ ] S/PDIF output
- [ ] IEEE 1394 port
- [x] Dolby Digital, DTS support, or SDDS support
- [ ] MIDI support

Explanation

Because the customer is using the computer as an HTPC, the sound card should include support for high-quality sound output, such as Dolby Digital, DTS, or SDDS support. In addition, the sound card should support a digital output, such as S/PDIF.

Line-level in (line in) ports are used to receive analog audio signals from musical instruments or CD players, which is not necessary for this computer. IEEE 1394 ports are used for connecting FireWire devices. MIDI support, which allows recording of digital synthesizers, is also unnecessary for this particular computer.

References

LabSim for PC Pro, Section 3.10.
[pcpro2016_all_questions_en.exm PC16_AUDIO_04]

Question 23: Incorrect

Examine the following output:

4 22 ms 21 ms 22 ms sttlwa01gr02.bb.ispxy.com [154.11.10.62]

5 39 ms 39 ms 65 ms plalca01gr00.bb.ispxy.com [154.11.12.11]

6 39 ms 39 ms 39 ms Rwest.plalca01gr00.bb.ispxy.com [154.11.3.14]

7 40 ms 39 ms 46 ms svl-core-03.inet.ispxy.net [205.171.205.29]

8 75 ms 117 ms 63 ms dia-core-01.inet.ispxy.net [205.171.142.1]

Which command produced this output?

- netstat
- tracert
- ~~ping~~
- nslookup

Explanation

The output is from a tracert command run on a Windows Server system. The tracert command provides information on each step in the route a packet takes to reach a remote host. Responses from each hop on the route are measured three times to provide an accurate representation of how long the packet takes to reach, and be returned by that host. This information can be useful in locating congestion points on a network, or when verifying that network routing is operating as expected. The ping command is used to test connectivity between devices on a network. Like tracert, ping sends three packets to the target host, but it does not report information on any intermediate devices it traverses to reach the target. Nslookup is a tool provided on Linux, Unix, and Windows systems that allows manual name resolution requests to be made to a DNS server. This can be useful when troubleshooting name resolution problems.

References

LabSim for PC Pro, Section 6.14.
[pcpro2016_all_questions_en.exm TRB NETWORKING_24]

Question 24: Incorrect

Which of the following are antenna types that are commonly used in wireless networks? (Select two.)

- [x] Directional antenna
- [ ] High EMI antenna
- [x] ~~Full-duplex antenna~~
- [x] Omnidirectional antenna
- [ ] Half-duplex antenna
- [ ] Low EMI antenna

Explanation

Directional and *omnidirectional* are two types of antennae commonly used in wireless networks.

A directional antenna:

- Creates a narrow, focused signal in a particular direction, which increases the signal strength and transmission distance
- Provides a stronger point-to-point connection; is better equipped to handle obstacles

An omnidirectional antenna:

- Disperses the RF wave in an equal 360-degree pattern
- Provides access to many clients in a radius

References

LabSim for PC Pro, Section 6.14.
[pcpro2016_all_questions_en.exm ANTENNA TYPES]

Question 25: Correct

To answer this question, complete the lab using information below.
You have completed this lab and may go on to the next question.

Launch Lab

You completed the lab correctly.

View Lab Report

You are preparing a new computer for operating system installation. Complete the following tasks:

- Modify the boot order so that the computer boots first from the optical drive and second from the hard drive.
- Disable the floppy drive as a bootable device because the computer has no floppy drive.

Note: To restart the simulated computer, click the **Send Ctrl + Alt + Del** button at the bottom of the screen.

References

LabSim for PC Pro, Section 3.10.
[pcpro2016_all_questions_en.exm BIOS_EXM_BOOT-PB]

Question 26: Correct

You need to place a wireless access point in your two-story building. While trying to avoid interference, which of the following is the best location for the access point?

- (•) In the top floor
- ( ) In the basement
- ( ) Near the backup generators
- ( ) In the kitchen area

Explanation

In general, place access points higher up to avoid interference problems caused by going through building foundations. Do not place the access point next to sources of interference such as other wireless transmitting devices (cordless phones or microwaves) or other sources of interference (motors or generators).

References

LabSim for PC Pro, Section 6.8.
[pcpro2016_all_questions_en.exm WIRELESS_06]

Question 27: Correct

Which of the following terms describes the difference between white and black in an LCD monitor?

- ( ) Resolution

- Brightness
- Aspect ratio
- ➡ Contrast ratio
- Pitch

Explanation

The contrast ratio identifies the relative difference between white and black. A higher contrast ratio means a better screen.

Pitch is the distance between pixels. Resolution is the number of pixels in the display. Brightness is a measure of the intensity of the light coming from the display. The aspect ratio is the ratio of the width and the height.

References

LabSim for PC Pro, Section 4.4.
[pcpro2016_all_questions_en.exm LCD CONTRAST RATIO]

Question 28: Correct

Which service can you use on your network to automatically assign IP addresses to hosts and to help prevent the same address from being assigned to two different hosts?

- IGMP
- ICMP
- TCP
- ➡ DHCP

Explanation

You can use the Dynamic Host Configuration Protocol (DHCP) to set up a DHCP server that will assign IP addresses automatically to network hosts. DHCP servers will not assign the same IP address to two different hosts. ICMP is chiefly used by networked computers' operating systems to send error messages. The Transmission Control Protocol (TCP) is one of the core protocols of the Internet protocol suite. The Internet Group Management Protocol (IGMP) is a communications protocol used to manage the membership of Internet Protocol multicast groups.

References

LabSim for PC Pro, Section 6.6.
[pcpro2016_all_questions_en.exm DHCP_03]

Question 29: Incorrect

Match the notebook Fn key icon labels on the left to the corresponding keys, numbered on the right.

1	2	3
✓ Touchpad (on/off)	✓ Screen orientation	✓ Wireless (on/off)

~~Dual displays~~	~~Bluetooth (on/off)~~	✓ Play/Pause media

Bluetooth (on/off) Dual displays

Explanation

The notebook Fn key icons are used as follows:

- 1. Turn the touchpad on or off
- 2. Change the screen orientation
- 3. Turn the wireless on or off
- 4. Turn Bluetooth on or off
- 5. Enable dual displays
- 6. Play or pause media

References

LabSim for PC Pro, Section 8.1.
[pcpro2016_all_questions_en.exm FN KEY ICONS-PB]

Question 30: Incorrect

What is name of the utility, which is similar to Telnet, that you can use to establish a secure remote server management session?

SSH

Explanation

Similar to Telnet, the **SSH** utility is used for remote server management; however, SSH encrypts all communications and is much more secure.

References

LabSim for PC Pro, Section 6.12.
[pcpro2016_all_questions_en.exm NETUTIL_07]

Question 31: Incorrect

To answer this question, complete the lab using information below. **Launch Lab**

You did not complete the lab correctly.

Recently, you implemented a wireless network at your home. However, without additional configuration, the wireless access point will allow connections from *any* laptop or mobile device. You need to secure the wireless network from unauthorized connections.

In addition, you suspect that wireless access points used by your neighbors are interfering with your access point. You've discovered that they are using channels 2 and 5 for their wireless networks.

Your task in this lab is to secure the wireless network as follows:

- Use **PoliceSurveillanceVan** for the SSID. **Note**: The SSID name is case sensitive.
- Disable SSID broadcasts.
- Set the channel such that it doesn't conflict with access points in neighboring homes.
- Use **WPA2-PSK** authentication, with **AES** for encryption.
- Configure **S3CuR31!** as the security key. **Note**: The security key is case

References

LabSim for PC Pro, Section 6.8.
[pcpro2016_all_questions_en.exm WIRELESS3-PB]

Question 32: Incorrect

You are putting together a system for a graphic artist and need to make sure you get a display that meets her needs. The display needs to have very good color reproduction quality and viewing angles. The display needs to run cool and be power efficient.

Which type of display is most likely to meet these needs?

- LCD display with IPS panel
- LCD display with TN panel
- Plasma display with no motion blur
- ~~OLED display with wide angle viewing~~

Explanation

LCD displays with IPS panels have the best color reproduction quality and viewing angles among LCDs. TN panels have imperfect color reproduction due to the fact that only 6-bits per color can be displayed and have poor viewing angles. LCDs with IPS panels use far less power and run much cooler than plasma displays. They are more expensive than LCDs with TN panels but are still more affordable than OLED displays.

References

LabSim for PC Pro, Section 4.4.
[pcpro2016_all_questions_en.exm LCD: TN VS IPS_02]

Question 33: Incorrect

Which component in a laser printer charges the paper to attract toner?

- Transfer roller
- ~~Primary corona~~

- ◯ Fuser
- ◯ Drum

Explanation

The *transfer roller* charges the paper to attract the toner. The primary corona prepares the photosensitive drum for writing by causing it to receive a negative electrostatic charge. Depending on the printer, the primary corona will be wires or rollers. A laser beam changes the charge on the surface of the drum in a pattern of the page's image. The toner sticks to the charged areas on the drum. Fusing rollers attach the toner to the paper by pressing and melting it.

References

LabSim for PC Pro, Section 7.1.
[pcpro2016_all_questions_en.exm PRINTER_13]

Question 34: Correct

There are critical times when memory problems often manifest themselves.

Match the critical times on the left with the corresponding descriptions on the right of the causes of the memory problems.

This can require more memory and can cause problems if there is not enough memory at this time

✓ Software installation

Memory is not properly seated, missing, or the motherboard is defective

✓ First boot of a new computer

Incompletely or improperly doing this can cause errors that appear to be memory related

✓ Hardware installation or removal

The memory is not compatible and was not installed and configured properly

✓ Memory upgrade

Explanation

At these critical times memory problems can manifest themselves:

- First boot of a new computer - memory is not properly seated, missing, or the motherboard is defective.
- After a memory upgrade - ensure that the memory is compatible and was installed and configured properly.
- After software installation - new software can require more memory and can cause problems if there is not enough memory for the software.
- After hardware installation or removal - incompletely or improperly installed hardware can cause errors that appear to be memory related.

References

LabSim for PC Pro, Section 3.9.
[pcpro2016_all_questions_en.exm CRITICAL TIMES-PB]

Question 35: Correct

You have just finished installing Windows on a system that contains four physical hard disks. The installation process has created a system volume and a C: volume on the first disk (Disk 0). The installation process also initialized the second disk (Disk 1) and the third disk (Disk 2) but did not create any volumes on these disks.

Which of the following would you expect to see as the status of Disk 1 and Disk 2?

- Formatting
- Unavailable
- Unreadable
- Initializing
- ➡ Unallocated
- Healthy

Explanation

A disk that has been initialized will show as *Unallocated* if no volumes have been created.

The Healthy or Online status indicates that the disk is turned on and can be accessed. The volume on the disk is valid and has no errors. The Formatting status is shown for volumes during the formatting process. After formatting, the status for the volume changes to Healthy. The Initializing process shows while a disk is being converted from a basic disk to a dynamic disk. After the conversion, the status for the volume changes to Healthy. The Unavailable status indicates that errors have occurred on physical or dynamic disks. The Unreadable status indicates a hardware failure, I/O errors, or other corruption but might also be caused by a delay in reading the disk in Disk Management.

References

LabSim for PC Pro, Section 5.6.
[pcpro2016_all_questions_en.exm UNALLOCATED]

Question 36: Correct

Which of the following would most likely cause random system lockups?

- Faulty mouse or keyboard
- Failing network adapter
- ➡ Overheated processor
- Loose monitor cable

Explanation

An overheated processor is the most likely cause of random system lockups.

A loose monitor cable will only affect the display and cause the image to cut out or distort. A faulty mouse or keyboard only causes problems with user input. A failing network adapter will cause networking issues, such as Internet connection loss, but the system will still be able to run.

References

LabSim for PC Pro, Section 3.14.
[pcpro2016_all_questions_en.exm PC16_COOLING_TRB_03]

Question 37: Correct

You recently upgraded the processor in your laptop computer to a faster processor. The computer runs, but after using it for several minutes, it shuts down unexpectedly. Which of the following should you do first?

- Charge the battery, then run the laptop from the battery.
- Use a multimeter to test the inverter.

- ◯ Test the memory for errors.
- ➡ ◯ Make sure the case fans are plugged in.

Explanation

Because you have recently replaced the processor, check things related to the processor or to items you had to disconnect and reconnect when replacing the processor. In addition, periodic shutdowns are often caused by overheating. Because of the limited space in a notebook case, the processor uses a heat pipe to pull heat towards the side of the case where a small fan can vent the heat from the case. Make sure the system case fans are plugged in and work properly.

References

LabSim for PC Pro, Section 8.4.
[pcpro2016_all_questions_en.exm TRB NOTEBOOK_06]

Question 38: Incorrect

What technology was designed to replace the BIOS and is a firmware solution for controlling the startup process and loading the computer operating system into memory?

- ◯ BIOS 2
- ◯ CMOS
- ◉ ~~EEPROM~~
- ➡ ◯ UEFI

Explanation

UEFI was designed to replace the BIOS and is a firmware solution for controlling the startup process and loading the computer operating system into memory. CMOS is a legacy computer chip technology that was used for storing system information prior to the introduction of EEPROM. EEPROM is a non-volatile memory chip that stores the system startup information configured through UEFI. BIOS 2 does not exist.

References

LabSim for PC Pro, Section 3.10.
[pcpro2016_all_questions_en.exm UEFI]

Question 39: Incorrect

What is an advantage of RAID 5 over RAID 1?

- ➡ ◯ RAID 5 improves performance over RAID 1.
- ◯ RAID 5 provides redundancy for the disk controller.
- ◉ ~~RAID 5 provides redundancy; RAID 1 does not.~~
- ◯ RAID 5 continues to operate with a failure in two disks; RAID 1 can only operate with a failure of one disk.

Explanation

RAID 5 provides both fault tolerance and improved performance. RAID 1 (mirroring) provides only fault tolerance with no performance benefit. Both RAID 5 and RAID 1 can only sustain a loss of one disk in the set. Use multiple disk controllers to provide redundancy for the disk controller.

References

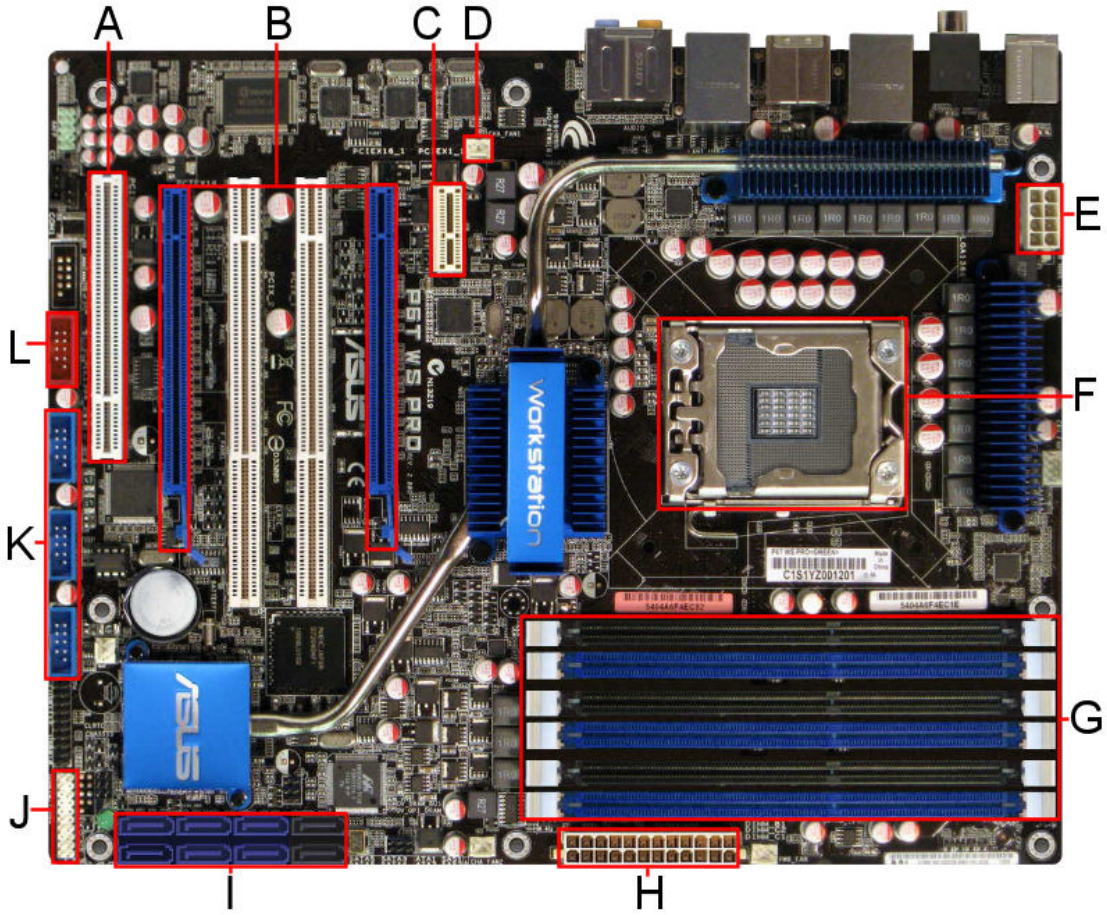
LabSim for PC Pro, Section 5.4.

[pcpro2016_all_questions_en.exm RAID 5_01]

Question 40: Correct

Consider the following diagram of a typical motherboard.

Drag the label on the left to the letter on the right that best identifies the associated connector.



A	B	C	D
✔ PCI	✔ PCIe x16	✔ PCIe x1	✔ Case fan power
E	**F**	**G**	**H**
✔ CPU power	✔ CPU	✔ Memory	✔ Power supply
I	**J**	**K**	**L**
✔ SATA	✔ Front/top panel	✔ USB	✔ IEEE 1394

Explanation

The connectors on the motherboard have the following functions:

- PCI slots: Used to connect PCI expansion boards.
- PCIe slots: Used to connect PCIe expansion boards.
- CPU fan power: Used to provide DC power to the CPU fan.
- CPU power: Provides additional DC power to the processor itself.
- CPU socket: Provides an interface for connecting the CPU to the motherboard.
- Memory slots: Provides an interface for connecting memory modules to the motherboard.
- Power supply connector: Provides an interface for connecting the power supply (PSU) to the motherboard.
- SATA connectors: Used to connect SATA storage devices.
- Front panel connectors: Used to connect front panel buttons and lights to the motherboard.

- IEEE 1394: Used to connect external FireWire devices.
- USB: Used to connect external USB devices.

References

LabSim for PC Pro, Section 3.3.
[pcpro2016_all_questions_en.exm PC16_MOTHERBOARDS_05-PB]

Question 41: Correct

You want to use a wireless printer at home. The printer will be used by two computers in two different rooms. Which interfaces could be used to do this?

- (selected) Wireless Ethernet
- Infrared (IrDA)
- USB
- IEEE 1394
- IEEE 1284

Explanation

You could use an 801.11 wireless Ethernet connection for the printer. 802.11 wireless Ethernet has a greater range than infrared, and will go through walls. The other interfaces are wired interfaces. IEEE 1394 is Firewire. IEEE 1284 is parallel.

References

LabSim for PC Pro, Section 6.9.
[pcpro2016_all_questions_en.exm BLUETOOTH_06]

Question 42: Incorrect

How do switches and bridges learn where devices are located on a network?

- When a frame enters a port, the destination IP address is copied from the frame header.
- (selected) ~~When a frame enters a port, the destination MAC address is copied from frame header.~~
- When a frame enters a port, the source IP address is copied from the frame header.
- (correct) When a frame enters a port, the source MAC address is copied from the frame header.

Explanation

Bridges and switches learn addresses by copying the MAC address of the source device and placing it into the MAC address table. The port number which the frame entered is also recorded in the table and associated with the source MAC address. The switch or the bridge cannot record the destination MAC address because it does not know the port that is used to reach the destination device. Bridges and switches operate at Layer 2 and do not use IP addresses (which exist at Layer 3).

References

LabSim for PC Pro, Section 6.2.
[pcpro2016_all_questions_en.exm NET DEVICE_07]

Question 43: Correct

You are testing a printer you just installed, so you use the operator panel on the printer to print a test page. Later, you use the printer properties on your computer to print a test page. Instead of a normal test page, you receive several pages with garbled characters on them. What is the most likely cause of the problem?

- ○ Wrong toner cartridge
- ○ Bad printer memory
- ➡ ◉ Wrong print driver
- ○ A problem with the printer power supply or the power cable

Explanation

When you print a test page from your computer and it does not work properly, you most likely have an incorrect print driver or a printer cable that is not fastened properly. Memory or power supply problems are rare in printers. You would probably not be able to install an incorrect toner cartridge into the printer.

References

LabSim for PC Pro, Section 7.6.
[pcpro2016_all_questions_en.exm TRB_PRINTER_22]

Question 44: Incorrect

This question includes a lab to help you answer the question. **View Lab**

Click the **View Lab** button. When the simulated computer starts, press the **F2** or **Delete** key on your keyboard to enter the BIOS setup program. Explore the current BIOS settings to find the answers to the following questions.

What brand of processor is installed?

Intel ✓

How much memory is installed in the computer?

4096 MB ✓

What is the BIOS version number?

✓

How many hard drives are installed?

3 ✓

What is the status of the integrated NIC?

Enabled ✓

Which drive is configured as first in the boot sequence?

Internal HDD Diskette Drive

Tip: When working in the lab, write down the answers to these questions before closing the lab.

Explanation

On the General > System Information page the following BIOS/UEFI information is shown:

- Processor Type: **Intel**
- Memory Installed: **4096**
- BIOS version: **1610**

- Installed drives: **3** drives are installed (SATA-0, SATA-1, SATA-2)

On the System Configuration > Integrated NIC page the following BIOS/UEFI information is shown:

- The integrated NIC status: **Enabled**

On the General > Boot Sequence page the following BIOS/UEFI information is shown:

- The first drive listed in the boot sequence: **Diskette Drive**

References

LabSim for PC Pro, Section 3.10.
[pcpro2016_all_questions_en.exm FIND BIOS1]

Question 45: Correct

Which tool would be the best choice to remove and replace the motherboard BIOS chip?

- Combination ratchet
- Needle-nose pliers
- Screwdriver
- IC extractor

Explanation

An IC extractor is a tweezer-like tool, usually spring loaded in the open position, used to remove integrated circuit chips. Using other tools, such as pliers or a screwdriver, could potentially damage the chip or the motherboard. A combination ratchet has interchangeable bits with a ratcheting handle that provides multiple features in a single tool.

References

LabSim for PC Pro, Section 2.3.
[pcpro2016_all_questions_en.exm PC 2016 IC EXTRACTOR]

Question 46: Correct

Why would you recommend a dye sublimation printer?

- When print jobs are detailed photographic reproductions.
- When cheap or surplus solid ink wax sticks are available.
- When a faster printer is needed.
- When an inexpensive way to add another printer is needed.

Explanation

Dye sublimation printers produce images by heating a colored dye, transferring the dye in gas form to paper where the dye cools and solidifies. This process is ideal for producing photographic quality images on a variety of media. Dye sublimation printers are typically more expensive than other types of printers, print on special photographic paper, and take over one minute to produce a single page.

References

LabSim for PC Pro, Section 7.1.
[pcpro2016_all_questions_en.exm PRINTER_01]

Question 47: Correct

To which of the following objects should thermal paste be applied?

- Fan
- CPU
- Motherboard
- Heat sink
- CPU power connector

Explanation

Thermal paste should be applied to the CPU such that it will facilitate heat dissipation from the CPU to the heat sink. The thermal paste helps create a good contact between the CPU and the heat sink so that heat can move between the two. Processors require some form of heat dissipation system to function properly. Without a heat dissipation system, a processor will overheat and burn out in less than a minute. Most modern CPUs require a heat sink and a fan.

References

LabSim for PC Pro, Section 3.14.
[pcpro2016_all_questions_en.exm THERMAL PASTE_01]

Question 48: Correct

You have a computer that has four DDR2 memory slots. Currently there are two 512 MB memory modules installed. You check the motherboard documentation and find that the system has a 4 GB memory limitation. You want to add as much memory as possible without replacing the existing modules.

What is the maximum total amount of RAM that can be installed in this system?

- 3.5 GB
- 4.5 GB
- 3 GB
- 2 GB
- 4 GB
- 1.5 GB

Explanation

You can add more memory to the system bringing the total to 3 GB. The system currently has 1 GB of RAM. Because the motherboard has a 4 GB memory limit, there is also a 1 GB limit for each memory slot. Adding two 1 GB modules brings the total to 3 GB.

References

LabSim for PC Pro, Section 3.8.
[pcpro2016_all_questions_en.exm MEMORY LIMITATIONS]

Question 49: Correct

For a special project, you have been asked to recommend the lowest profile desktop computers available. You are attempting to put together the specifications for these machines. Which of the following types of cards are attached to the motherboard to allow expansion cards to plug into them instead of the motherboard?

- VESA Local Bus
- Riser

- Communications and Networking Riser
- PCMCIA

Explanation

Riser cards attach to the motherboard and have expansion cards plug into them instead of the motherboard. The primary benefit of a riser card is that by installing expansion cards parallel to the motherboard, it is possible to create a low-profile design. Communications and Networking Riser (CNR) is a type of expansion slot found on some motherboards that is used for network and sound expansion boards. Personal Computer Memory Card International Association (PCMIA) cards were used several years ago to add devices to laptops. VESA Local Bus was also a type of expansion slot found on older motherboards that was primarily used for the video interface.

References

LabSim for PC Pro, Section 3.11.
[pcpro2016_all_questions_en.exm RISER EXPANSION CARD]

Question 50: Correct

A departmental manager complains that print jobs are not being printed on the private laser printer in her office. The printer connects directly to her workstation with a USB cable. When you inspect the printer, you see no output displayed on the printer's LCD control panel. You notice that the printer's power switch is set to the ON position and that the printer is plugged into the wall outlet. What should you do?

- Run a printer self-test.
- Replace the printer's power supply.
- Install print server hardware in the printer and configure the user's workstation to send print jobs to it over the network.
- Replace the fuser assembly.

Explanation

The fact that the printer is plugged in and powered on, but has nothing displayed on its built-in control panel indicates that its power supply has probably failed. This can be verified by listening for fan noises or feeling for heat being radiated by the printer. If the power supply is bad, then running a self test, connecting the printer to the network, or replacing the fuser assembly will not resolve the issue.

References

LabSim for PC Pro, Section 7.6.
[pcpro2016_all_questions_en.exm TRB_PRINTER_NEW_02]

Question 51: Correct

Your motherboard has two memory slots and supports a maximum of 8 GB of RAM. After installing two 4 GB modules and booting your system, you find that Windows only recognizes 3.5 GB of RAM. What should you do?

- Make sure that both modules are seated properly in their slots.
- Reboot the computer and run memory diagnostic tests on the memory.
- Change the memory timings in the BIOS to a slower (higher) setting.
- Return both modules for a replacement.
- Upgrade to a 64-bit version of Windows.

Explanation

In this situation, you are most likely using a 32-bit version of Windows, which can only address a maximum of 4 GB of RAM. Some of the 4 GB is used by drivers, hence it only reports 3.5 GB of system RAM. Upgrading to a 64-bit version of Windows should fix the problem.

The BIOS should display the total amount of system memory during POST. If it does not count the proper amount of memory, verify that the memory is inserted correctly. In most cases, you will not need to change the memory timings. When you do, it is typically because the system is unstable or crashes. Testing memory helps you identify when specific memory storage locations are going bad. Device Manager will not enable memory not recognized by the BIOS.

References

LabSim for PC Pro, Section 3.4.
[pcpro2016_all_questions_en.exm TRB MB_04]

Question 52: Incorrect

Which component in a laser printer prepares the photosensitive drum for writing by causing it to receive a negative electrostatic charge?

- Organic photoconductor (OPC) drum
- Primary corona
- Fuser
- ~~Transfer corona~~

Explanation

The primary corona (also called the main corona or the charge corona) prepares the photosensitive drum for writing by causing it to receive a negative electrostatic charge. Depending on the printer, the primary corona will be wires or rollers. The Organic photoconductor (OPC) drum is just another name for the photosensitive drum. The transfer corona (sometimes called the secondary corona) charges the paper to attract the toner. Fusing rollers attach the toner to the paper by pressing and melting it.

References

LabSim for PC Pro, Section 7.1.
[pcpro2016_all_questions_en.exm PRINTER_12]

Question 53: Incorrect

Which of the following tasks would you complete as part of a SATA installation?

- Use the 4-pin molex power connector.
- Configure the device ID using a jumper.
- ~~Complete a low-level format of the drive.~~
- Set the master/slave relationship using a jumper.
- Plug the 15-pin power connector into the SATA drive.

Explanation

SATA devices use a special 15-pin power connector that supplies 3.3, 5, and 12 volts. Using the 4-pin Molex connector for a SATA device requires an adapter cable. The master setting only applies to IDE drives, and is used to determine the active controller with multiple devices on the same cable channel. Device IDs are used with SCSI devices, not SATA devices. Low-level formatting is done at the factory by the drive manufacturer.

References

LabSim for PC Pro, Section 5.2.
[pcpro2016_all_questions_en.exm SATA INSTALLATION_01]

Question 54: Incorrect

List the general steps that are used to configure a SOHO router and set up the network. (Assume that the wireless router does not also function as a modem.)

Use the arrows to move the correct steps from the left to right. Use the up and down arrows to put the steps in the correct order, from the first step at the top to last step at the bottom.

Tip: Not all steps on the left will be used.

Configure the Internet connection ~~blank~~
Configure the wireless router ~~blank~~
Enable NAT ~~blank~~
Configure DHCP ~~blank~~
Secure the SOHO network ~~blank~~

Explanation

The general steps you would use to configure a SOHO router and set up the network are as follows:

• **Configure the Internet connection**--Begin by connecting the wireless router to the DSL or cable modem that provides the Internet connection, using the router's WAN port. If the router does not automatically detect and configure the Internet connection, follow the configuration instructions provided by the Internet Service Provider.
• **Configure the wireless router**--Before setting up the network, the default administrator username and password should be changed and the firmware on the router should be updated to fix bugs or security vulnerabilities.
• **Enable NAT**--Before the network host devices (computers, mobile devices, and printers) can receive IP addresses, NAT must be enabled on the router. NAT allows multiple computers to share a single public IP address used on the Internet. The host devices will communicate with each other using private network addresses from one of the private address ranges.
• **Configure DHCP**--after NAT is configured to use a range of private network addresses, DHCP can be configured to assign IP addresses from that range to the host devices.
• **Secure the SOHO network**--Secure the SOHO network by; configuring the firewall on the router, configuring content filtering and parental controls, and physically securing the router.

There are other wireless communication technologies, but Wi-Fi based on the 802.11 standard is the only practical option for the typical SOHO environment. A SOHO network does not need a server so you will generally not configure a network server. A SOHO network only uses one subnet, so there is no need to design a subnetting scheme. Using a wireless router means the physical network star topology is already determined.

References

LabSim for PC Pro, Section 6.11.
[pcpro2016_all_questions_en.exm SOHO_02-PB]

Question 55: Correct

How many devices does a single IEEE 1394 bus support?

- (●) 63
- ( ) 127
- ( ) 256
- ( )

8

Explanation

An IEEE 1394 bus can have up to 63 devices. The USB bus supports up to 127 devices. Older SCSI buses support 7 devices (or 8 including the host adapter).

References

LabSim for PC Pro, Section 4.3.
[pcpro2016_all_questions_en.exm IEEE 1394 BUS SUPPORT]

Question 56: Incorrect

You have just purchased a new laptop with built-in 802.11 wireless and Bluetooth capabilities. When you boot into Windows, you do not see a Bluetooth adapter listed in Device Manager. What should you do first?

- ~~Enable the Bluetooth device in Device Manager.~~
- Enable Bluetooth in the BIOS/UEFI configuration.
- Update the device driver in Windows.
- Replace the wireless card in the laptop.

Explanation

You can enable and disable built-in devices in the system BIOS/UEFI configuration. Check the BIOS/UEFI configuration first before trying to replace components. You cannot enable the device or update the driver in Windows until Windows can see the device. With the device disabled in the BIOS/UEFI configuration, Windows does not know that the device exists.

References

LabSim for PC Pro, Section 8.4.
[pcpro2016_all_questions_en.exm TRB NOTEBOOK_05]

Question 57: Incorrect

For the past several days, the print jobs from the inkjet printer are missing colors and leaving gaps. What should you do to resolve the problem?

- Use the automatic print head cleaning feature.
- ~~Recalibrate the printer's color profile.~~
- Check the gap between the printer head and the paper.
- Add additional memory to the printer.

Explanation

Use an inkjet's automatic cleaning feature if letters have missing lines and there are gaps. With inkjet printers, the nozzles sometimes become clogged, preventing ink from leaving the nozzles and reaching the paper.

On dot matrix printers, you should check the gap between the printer head and the paper to avoid printer images from becoming faint. Color profiles are typically created by the manufacturer, and correct problems when the printed colors don't match what you see on the screen. Add memory to a printer if the end of a printed page is missing.

References

LabSim for PC Pro, Section 7.6.
[pcpro2016_all_questions_en.exm TRB_PRINTER_07]

Question 58: Correct

What should you do (if possible) before updating the UEFI firmware? (Select two.)

- [ ] Upgrade the processor.
- [ ] Password protect the system.
- [x] Connect the computer to a UPS.
- [ ] Change the motherboard battery.
- [x] Backup existing UEFI settings.

Explanation

If possible, you should connect the computer to an uninterruptible power supply (UPS) before updating the UEFI firmware. Losing power during the update process can cause catastrophic problems. You should also backup your existing UEFI settings before updating. Most BIOS/UEFI setup programs provide an option to save existing settings to a file.

Upgrading the processor, changing the motherboard battery, or setting a system password are not required prior to updating the UEFI firmware.

References

LabSim for PC Pro, Section 3.4.
[pcpro2016_all_questions_en.exm TRB BIOS]

Question 59: Incorrect

Which of the following objects is installed between the system case and the motherboard's back I/O ports?

- (•) ~~Standoffs~~
- ( ) Fan
- ( ) Faceplate
- ( ) Heat spreader

Explanation

The I/O shield (also called a faceplate) is placed between the motherboard and the system case. The shield protects the case from dust and debris.

Standoffs are placed between the motherboard and the case and prevent the motherboard circuits from touching the system. Heat spreaders are placed on memory modules to help cool them. Fans are installed in the system case, but not between the system case and the back I/O panel. The support manual is a booklet that contains information about the motherboard.

References

LabSim for PC Pro, Section 3.3.
[pcpro2016_all_questions_en.exm PC16_MOTHERBOARD_INST_02]

Question 60: Incorrect

Which type of printer heats the ink in its print head to print?

- ( ) Bubble jet (inkjet)
- (•) ~~Thermal~~
- ( ) Piezoelectric crystal inkjet

Laser

Explanation

The bubble jet inkjet printer applies heat to the ink and squirts it through tiny nozzles in the print head and onto the paper. A laser printer also uses heat, but the heat is applied to thermal rollers (not a print head). A piezoelectric printer uses pressure, not heat, to apply the ink. A thermal printer uses heat to cause a reaction on specially treated paper.

References

LabSim for PC Pro, Section 7.1.
[pcpro2016_all_questions_en.exm PRINTER_07]

Question 61: Correct

What is the approximate bus speed of DDR2 memory rated at PC2-5300?

533 MHz

5300 MHz

333 MHz

400 MHz

667 MHz

Explanation

DDR2 memory rated at PC2-5300 has a bus speed of 333 MHz and an internal frequency of 667 MHz (or DDR2-667). The bandwidth is around 16 times the bus speed and 8 times the DDR- designation. For DDR2, the PC2- designation identifies the bandwidth instead of a number derived from the bus speed. For DDR, DDR2, DDR3, and DDR4 the number following the DDR- designation is always twice that of the bus speed, specifying that the double data rate memory transfers double the data in a single clock cycle. This means that DDR2-667 has a bus frequency (speed) of 333 MHz.

References

LabSim for PC Pro, Section 3.7.
[pcpro2016_all_questions_en.exm DDR2 BUS SPEED]

Question 62: Incorrect

Which of the following actions is not recommended for keeping your computer cool?

Add heat sinks to memory, video, and chipset components.

Remove unused expansion card slot covers.

~~Add a liquid cooling system.~~

Keep internal components clean.

Use rounded cables.

Explanation

Do not remove unused expansion slot covers from a system case. The system case is a pressurized system, with carefully designed airflow that directs outside air across components and then out of the case. When you remove the system cover or expansion card covers, you modify the airflow path, which typically reduces the cooling effectiveness of the system fans.

References

LabSim for PC Pro, Section 3.14.
[pcpro2016_all_questions_en.exm COOLING_01]

Question 63: Incorrect

You need to replace the hard disk in your laptop computer. Which of the following hard drive sizes would you likely choose for the laptop?

- 5.25"
- ~~3.5"~~
- 2.5"
- 1.25"

Explanation

Notebook hard drives and SSD drives are typically 2.5". 3.5" drives are normal sized drives for desktop computers. 5.25" are older hard drives and floppy drives.

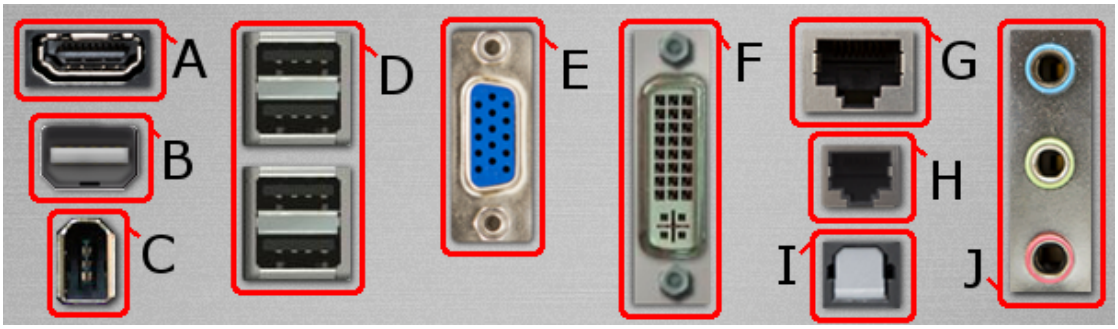
References

LabSim for PC Pro, Section 8.2.
[pcpro2016_all_questions_en.exm NOTEBOOK_COMPONENTS_19]

Question 64: Incorrect

Consider the external ports for a typical PC system (pictured below).

Drag the port type on the left to the letter on the right that best identifies it. (Each type can be used once.)



A	B	C	D	E	F	G
HDMI	Thunderbolt	IEEE 1394	USB	VGA	DVI	RJ45

H	I	J
RJ11	Fiber S/PDIF	Audio Jack

Explanation

In this example, the computer back panel has the following ports:

- HDMI - connects HDMI display devices
- Thunderbolt - combines PCI Express (PCIe) and DisplayPort signals into a single interface
- IEEE 1394 - connects devices that require fast communication speeds
- USB - connects external USB devices (e.g., keyboard, mouse, printer, and storage devices)
- VGA - connects VGA display devices
- DVI - connects DVI display devices
- RJ45 - connects the computer to an Ethernet network
- RJ11 - used by telephones and modems to send analog signals
- Fiber S/PDIF - sends a digital audio signal to high-end audio devices, such as home theatre

systems.
- Audio jacks - connects analog audio devices (e.g., speakers, headphones, microphones)

References

LabSim for PC Pro, Section 1.3.
[pcpro2016_all_questions_en.exm PC16_COMPUTER_PORTS_05-PB]

Question 65: Incorrect

Which of the following utilities can you use from the command line on a Linux system to see a list of the installed network interfaces, along with their current status and configuration?

- netinfo
- netstat
- ~~ipconfig~~
- netconfig
- iflookup
- ifconfig

Explanation

ifconfig is used on Linux (and Mac OS) systems to display the installed network interfaces, their current status, and the current configuration settings for each interface, including the MAC address, IP address, broadcast address, and subnet address.

ipconfig is used on Windows systems to view the installed network interfaces and their IP address, subnet mask, and default gateway configuration. **netstat** is used on a Windows system to display IP-related statistics. netconfig, iflookup and netinfo are not the names of real networking utilities.

References

LabSim for PC Pro, Section 6.12.
[pcpro2016_all_questions_en.exm NETUTIL_02]

Question 66: Incorrect

Which utility would you use to view current connections and active sessions and ports on a computer?

- ~~nslookup~~
- netstat
- ipconfig
- ping

Explanation

Netstat shows IP-related statistics including:

- Incoming and outgoing connections
- Active sessions, ports, and sockets
- The local routing table

Ipconfig displays IP configuration information for network adapters. Use ipconfig to view IP address, subnet mask, and default gateway configuration. Nslookup resolves (looks up) the IP address of a host name. Ping sends an ICMP echo request/reply packet to a remote host. A

response from the remote host indicates that both hosts are correctly configured and a connection exists between them.

References

LabSim for PC Pro, Section 6.12.
[pcpro2016_all_questions_en.exm NETUTIL_03]

Question 67: Correct

Which of the following printers would produce the highest print quality?

- 18-pin
- 24-pin
- 600 DPI
- 300 DPI

Explanation

The dots per inch (DPI) describe the level of detail produced by a printer. The higher the DPI, the higher the print quality.

References

LabSim for PC Pro, Section 7.1.
[pcpro2016_all_questions_en.exm PRINTER_03]

Question 68: Correct

Which of the following commands verifies that TCP/IP is working correctly on the local computer?

- ping -a localhost
- netstat
- nslookup localhost
- ping 127.0.0.1

Explanation

Use ping 127.0.0.1 to test the TCP/IP configuration of the local system. The special address of 127.0.0.1 is a loopback address that identifies the local host. A successful ping test to the local host identifies that TCP/IP is correctly configured. Use nslookup to find the IP address for a given hostname. Use ping -a to find the hostname for a given IP address. Netstat shows IP-related statistics.

References

LabSim for PC Pro, Section 6.14.
[pcpro2016_all_questions_en.exm TRB NETWORKING_15]

Question 69: Incorrect

What type of RAM might slow system performance because it holds memory addresses or data to improve stability on systems with more than 1 GB of RAM before it is transferred to the memory controller?

- ~~Parity RAM~~
- Unbuffered
- EEPROM
- Buffered

Explanation

Buffered (or registered) RAM has a buffer that holds memory addresses or data before it is transferred to the memory controller. Buffered RAM improves stability on systems with a lot of RAM (over 1 GB) but it might slow system performance.

Unbuffered memory does not have a buffer to hold memory addresses or data before it is transferred to the memory controller. Unbuffered memory can be found in servers and high-end workstation. Parity memory is a type of memory that checks for common kinds of internal data corruption. It does not correct internal data corruption. Non-parity memory does not perform error checking. EEPROM is RAM chip that holds non-volatile memory used in computers and other electronic devices to store relatively small amounts of data.

References

LabSim for PC Pro, Section 3.8.
[pcpro2016_all_questions_en.exm BUFFERED VS UNBUFFERED_01]

Question 70: Incorrect

Which of the following paper types should not be used in inkjet printers?

- Any colored paper
- ~~Multi-purpose paper~~
- Paper that is not specifically marked "for inkjet printers."
- Very glossy paper

Explanation

Early inkjet printers required paper specially manufactured for inkjet printers. Now, inkjet printer paper is not necessary. However, you still need to consider factors such as how the paper absorbs the ink. Very glossy paper that does not absorb ink very well can be problematic.

References

LabSim for PC Pro, Section 7.6.
[pcpro2016_all_questions_en.exm TRB_PRINTER_13]

Question 71: Incorrect

Which of the following is true when the DHCP setting is disabled in a wireless network?

- Wireless clients must use the correct encryption key with its packets.
- ~~Wireless clients must use the correct wireless access point identifier (i.e., SSID) to connect to the network.~~
- Wireless clients with specific MAC addresses are denied access to the network.
- Wireless clients must use a static IP address within the correct IP address range to connect to the network.

Explanation

Disabling DHCP prevents addresses from being automatically assigned to wireless systems. If DHCP is disabled, clients must use a static IP address and only those who know the IP address range and other parameters will be able to connect. Enabling MAC address filtering denies access to clients with unauthorized MAC addresses. Encryption keys are only needed when wireless networks implement some type of encryption (i.e., WEP, WPA, and WPA2). The SSID is the identifier for the wireless access point, and is used to associate wireless clients to the access point.

References

LabSim for PC Pro, Section 6.8.
[pcpro2016_all_questions_en.exm WIRELESS STATIC ADDRESS]

Question 72: Incorrect

You are designing an update to your client's wireless network. The existing wireless network uses 802.11b equipment, which your client complains runs too slowly. She wants to upgrade the network to run at 150 Mbps. Due to budget constraints, your client wants to upgrade only the wireless access points in the network this year.

Next year, she will upgrade the wireless network boards in her users' workstations. She has also indicated that the system must continue to function during the transition period.

Which 802.11 standard will work best in this situation?

- 802.11b
- ~~802.11g~~
- 802.11n
- 802.11a
- 802.11d

Explanation

802.11n is the best choice for this client. Both 802.11a and 802.11g each operate at a maximum speed of 54 Mbps. 802.11a isn't compatible with 802.11b network boards. 802.11n access points, on the other hand, are backwards-compatible with 802.11b equipment and run at speeds of up to 300 Mbps. Using this type of access point will allow the wireless network to continue to function during the transition.

References

LabSim for PC Pro, Section 6.8.
[pcpro2016_all_questions_en.exm 802.11 SPECS_04]

Question 73: Incorrect

Which of the following input devices uses a stylus?

- Trackpoint
- Digitizer
- ~~Touch screen~~
- Touch pad

Explanation

A digitizer pad is used in Tablet PCs to receive input. Input is written onto the pad with a stylus pen, then those motions are transferred into data that is processed by the system. A touchpad and a touch screen uses your fingers to receive input to move or click the mouse. A trackpoint or pointing stick is a knob that moves the cursor.

References

LabSim for PC Pro, Section 8.2.
[pcpro2016_all_questions_en.exm NOTEBOOK_COMPONENTS_10]

Question 74: Incorrect

You need to trace the route that a Cat 6 UTP cable takes through the ceiling and walls of your building. Which tool should you use?

- Tone probe
- Punchdown tool
- Multimeter
- ~~Cable tester~~

Explanation

A tone probe is used to trace a UTP cable through walls and ceilings. A tone generator is attached to one end of the cable. Then the probe is used to audibly trace the wire.

A multimeter is used to measure electrical voltage and resistance. A cable tester tests UTP cables for continuity and resistance. A punchdown tool is used to connect UTP cabling to a punchdown block.

References

LabSim for PC Pro, Section 2.3.
[pcpro2016_all_questions_en.exm PC16 TONE PROBE]

Question 75: Correct

Which of the following is not one of the ranges of IP addresses defined in RFC 1918 that are commonly used behind a NAT router?

- 10.0.0.1 - 10.255.255.254
- 172.16.0.1 - 172.31.255.254
- 192.168.0.1 - 192.168.255.254
- 169.254.0.1 - 169.254.255.254

Explanation

169.254.0.1 - 169.254.255.254 is the range of IP addresses assigned to Windows DHCP clients if a DHCP server does not assign the client an IP address. This range is known as the Automatic Private IP Addressing (APIPA) range. The other three ranges listed in this question are defined as the private IP addresses from RFC 1918 which are commonly used behind a NAT server.

References

LabSim for PC Pro, Section 6.11.
[pcpro2016_all_questions_en.exm NAT_02]

Question 76: Correct

A user recently used her notebook to make a presentation that required her to display her screen from a projector in the conference room. She is now back at her desk, her notebook is still on, but the display is blank.

What should you do first to try to restore the display?

- Repair the video card, which typically means replacing the motherboard.
- Reboot the computer.
- Use the Fn keys to toggle the display output to the laptop monitor.
- Connect an external monitor to the laptop and use the Fn keys to toggle the display output to the external monitor.
- Check for cracks in the bezel around the display to see if it has been damaged.

Explanation

The first step to try to restore the display is to use the Fn keys to toggle the display output to the laptop monitor. It is very likely that the Fn keys were used to toggle the display output to the projector for the presentation and then not toggled back to the laptop monitor.

Rebooting the computer will probably restore the default display output, but is not the best first solution to try. The other steps might become necessary in some cases, but only after the easiest and likeliest solutions are tried.

References

LabSim for PC Pro, Section 8.4.
[pcpro2016_all_questions_en.exm LAPTRB_03]

Question 77: Incorrect

To answer this question, complete the lab using information below. **Launch Lab**

You did not complete the lab correctly.

You work part-time at a computer repair store. You are in the process of configuring a new system. You would like to install the operating system on a RAID array that provides both fault tolerance and improved performance.

Your task in this lab is to:

- Add the *minimum* number of disks to the computer to create the RAID array that meets the scenario requirements. Do not remove extra disks from the Shelf.
- Connect all disks to the motherboard and provide power for the disks.
- Boot the computer and configure a RAID array using the motherboard RAID configuration utility.
  - Choose the RAID level based on the scenario requirements.
  - Configure the array to use all of the disk space on the installed disks.

References

LabSim for PC Pro, Section 5.4.
[pcpro2016_all_questions_en.exm RAID2-PB]

Question 78: Correct

Which of the following are considered computer hardware? (Select two.)

- [ ] Microsoft Office
- [ ] Operating System
- [x] Motherboard

- [ ] Drivers
- [x] Printer

Explanation

The physical components that compose a computer system or network. Common hardware components include the following:

- Keyboard, mouse, monitor, printer
- Connectors and cables
- Hard Disk Drives
- Circuit boards

Instructions or data that are stored electronically, either on a hard drive or a special chip. Software components include the following:

- Operating systems
- Program applications
- Hardware drivers (special programs that tell the operating system how to use the hardware)

References

LabSim for PC Pro, Section 1.3.
[pcpro2016_all_questions_en.exm PC16_COMPUTING_BASICS_01]

Question 79: Incorrect

To test a power supply, you want to use a multimeter to measure the voltage on a Molex hard disk drive connector. To do this, you need to turn the power supply on. Which pins on the 24-pin motherboard connector coming from the power supply can be shunted to turn the power supply on? (Select two.)

- [ ] Pins 17 and 18
- [ ] Pins 7 and 8
- [x] ~~Pins 15 and 17~~
- [ ] Pins 16 and 17
- [ ] Pins 15 and 16

Explanation

Shunting pins 15 and 16 or pins 16 and 17 will turn the power supply on, allowing you to measure the voltage it is supplying on its various connectors. Pin 16 is the Power_On pin, so shunting it with any grounding pin in the motherboard connector will turn the power supply on. Pins 7, 15, 17, and 18 are all ground pins in the connector. Pin 8 is the Power_Good wire, which the motherboard uses to determine whether the power supply is providing sufficient power for it to turn on.

References

LabSim for PC Pro, Section 3.2.
[pcpro2016_all_questions_en.exm PS TESTING]

Question 80: Correct

What is a DB-15 connector on a sound card typically used for? (Select two.)

- [ ] Head phones
- [ ] Microphone

- [x] MIDI port
- [x] Joystick
- [ ] Speakers

Explanation

Use a DB-15 connector on a sound card to connect MIDI devices or game joysticks. Headphones, speakers, and microphones connect to TRS ports.

References

LabSim for PC Pro, Section 3.10.
[pcpro2016_all_questions_en.exm DB-15 CONNECTOR]

Question 81: Incorrect

Which type of printer uses an inked ribbon?

- ( ) Dot matrix
- (•) ~~Ink jet~~
- ( ) Dye sublimation
- ( ) Laser

Explanation

Dot matrix printers use an inked ribbon. The printing mechanism strikes the ribbon to put ink onto the paper. A dye sublimation printer is a non-impact printer that uses film-embedded dye. Ink jet printers are quiet non-impact printers with ink stored in a reservoir. Bubble jet printers are the most popular form of ink jet printers. Laser printers use lasers and electrical charges to transfer images to paper.

References

LabSim for PC Pro, Section 7.1.
[pcpro2016_all_questions_en.exm PRINTER_04]

Question 82: Correct

You have purchased an LED monitor and connected it to the HDMI port on your computer using an HDMI cable. You configure the screen resolution to 1280 x 768 with 32-bit color. The images displayed on the screen appear to be overly large.

What should you do to correct the problem?

- (•) Set the display resolution to the native resolution of the monitor.
- ( ) Increase the hardware acceleration setting on the video driver.
- ( ) Change the screen resolution to 1280 X 720.
- ( ) Decrease the color depth of the video driver to 24-bit color.
- ( ) Use a VGA cable to connect the monitor instead of an HDMI cable.

Explanation

LED and LCD monitors have a native display resolution. You should set the resolution of the video board to the native resolution of the monitor (whatever it might be). In this scenario, the display resolution has been set to a resolution that is much smaller than the native resolution, causing the images on the display to appear over-sized.

Changing connection types will not correct an incorrectly set display resolution, nor will increasing the hardware acceleration or installing an updated driver.

References

LabSim for PC Pro, Section 4.5.
[pcpro2016_all_questions_en.exm TRB OVERSIZED IMAGES]

Question 83: Correct

You are installing networking cable in the air space between the ceiling and the roof of a building. Which type of cabling should you use?

- STP
- Multi-mode fiber
- ➡ Plenum
- PVC

Explanation

Plenum cable is fire resistant and non-toxic, making it optimal for wiring above ceiling tiles. PVC cable cannot be used to wire above ceilings because it is toxic when burned. Both STP and fiber optic cables can be rated for plenum areas, but are not in themselves fire resistant.

References

LabSim for PC Pro, Section 6.3.
[pcpro2016_all_questions_en.exm PLENUM]

Question 84: Correct

Which of the following methods can be used to connect a printer to a network? (Select two.)

- ➡ ☑ Connect your printer to an external print server device that is connected to the network.
- ☐ Plug a USB-to-Ethernet adapter in your printer's USB port.
- ➡ ☑ Plug an Ethernet cable into the network port in the printer.
- ☐ Plug a network cable into your printer's serial port.
- ☐ Plug a network cable into your printer's USB port.

Explanation

There are two common ways to make a printer a network printer. Most printers come with an integrated network card or have a slot for adding a network card. Otherwise it is possible to connect it to the network using an external printer server. The external print server functions as a gateway between the printer's parallel interface and the network topology. While a USB-to-Ethernet adapter can be used to connect a workstation to a wired network, it won't work with a printer as software drivers must be loaded on the host for the adapter to work.

References

LabSim for PC Pro, Section 7.3.
[pcpro2016_all_questions_en.exm PRT_NETWORK_01]

Question 85: Correct

Which system utility would you use to troubleshoot hardware devices, examine and control the resources used by specific devices, and install updated device drivers?

- ➡ Device Manager

- ◯ System Restore
- ◯ Network
- ◯ Control Panel
- ◯ Notification Area

Explanation

Use Device Manager to troubleshoot hardware devices, examine and control the resources used by specific devices, and install updated device drivers. System Restore takes periodic snapshots, called restore points, of the system configuration. Network acts as a built-in network browser showing all networks and shared folders to which the user has access. The Notification Area displays icons that represent the applications and processes that are running behind the scenes on your computer such as audio volume, security programs, and connectivity to the network. It also displays the time and date. The Control Panel contains various utilities that change how a computer looks and behaves.

References

LabSim for PC Pro, Section 4.7.
[pcpro2016_all_questions_en.exm TRB_DEVICES]

Question 86: Incorrect

Which of the following devices use the 4-pin peripheral (Molex) connector? (Select two.)

- ☑ PATA CD-ROM
- ☐ Case fan
- ☐ SATA hard disk drive
- ☐ CPU
- ☐ Solid state drive

Explanation

The 4-pin peripheral power connector (colloquially called a 4-pin Molex connector) is used by the following components:

- PATA CD-ROM
- IDE hard drives
- Case fans

Solid state drives and SATA hard disk drives use SATA power connectors. If a CPU needs auxiliary power, it uses either a 4-pin 12 V (P4) connector or an 8-pin EPS12V CPU connector.

References

LabSim for PC Pro, Section 3.2.
[pcpro2016_all_questions_en.exm PC16_POWER_SUPPLY_07]

Question 87: Correct

Your computer currently runs Windows 10 Professional edition. You want to create a RAID 10 array using four newly-installed SATA disks. When you go to Disk Management, the option to create the RAID 10 array is not available. What should you do?

- ◯ Upgrade the disks to dynamic disks.
- ◯ Create a simple volume first, then add the remaining disks to the volume.

- Install an add-on RAID controller.
- Upgrade to Windows 10 Enterprise edition.

Explanation

Windows 10 desktop operating systems support creating RAID 0 and RAID 1 arrays in Disk Management, but do not support configuring RAID 5 or RAID 10. To use RAID 10 on a client computer, you will need to use a RAID controller installed into an expansion slot or integrated into the motherboard.

References

LabSim for PC Pro, Section 5.10.
[pcpro2016_all_questions_en.exm TRB RAID 10_02]

Question 88: Correct

Upon reviewing the specifications for a motherboard, you find that it uses an F CPU socket.

Which manufacturer's CPUs can be used in this motherboard?

- IBM
- Cyrix
- AMD
- Intel

Explanation

The F motherboard CPU socket is designed for processors made by AMD. It is used by the AMD Opteron and Athlon 64 FX processors.

Intel and IBM processors are not compatible with AMD motherboard sockets. Even if the Intel or IBM CPU fits in the Intel socket, they are electrically different and will very likely be destroyed upon power-up.

Cyrix made CPUs in the mid-1990s, but was acquired by another semi-conductor company and ceased making CPUs in the late 1990s.

References

LabSim for PC Pro, Section 3.3.
[pcpro2016_all_questions_en.exm PC16_MOTHERBOARDS_10]

Question 89: Incorrect

Which of the following connectors are part of the system case and connect to header pins on the motherboard? (Select two.)

- ~~24-pin ATX power~~
- SATA power
- 8-pin EPS12V
- HDD LED activity
- Power switch

Explanation

The system case typically includes wires that connect to the motherboard and provide the following functions:

- Power switch
- Reset switch
- HDD LED activity
- Case speaker

The 24-pin ATX, SATA power, and 8-pin EPS12V connectors are provided by the power supply, not the system case.

References

LabSim for PC Pro, Section 3.3.
[pcpro2016_all_questions_en.exm PC16_MOTHERBOARD_INST_03]

Question 90: Incorrect

Your company has decided to hire a full-time video editor. You have been asked to find a system with the level of display quality needed by someone who will be working with video all day.

Which of the following video card specifications will have the greatest impact on display quality? (Select two.)

- [ ] Memory
- [ ] Refresh rate
- [x] Resolution
- [x] ~~Display connector type~~
- [ ] GPU configuration

Explanation

The quality of video is determined by both the video card and the external display. When selecting a video card, the following specifications should be considered:

- **Resolution**: the number of pixels displayed on the screen. A higher resolution means that more information can be shown on the screen (screen "real estate"). A video card is rated by its max resolution, which is the highest possible resolution it can display (e.g., 1920 × 1080 or 4096 × 2160). A video editor is going to need as much real estate as you can afford.
- **Refresh rate**: the number of times in one second that the GPU draws a frame. Refresh rates are measured in hertz. A refresh rate of 70 Hz or lower may cause eye fatigue. An optimal refresh rate is between 75 Hz and 85 Hz.

The display specifications should match the video card specifications.

Memory, GPU configuration, and display connection type are all factors that will contribute to video performance or compatibility with the display. But these factors do not directly determine the display quality.

References

LabSim for PC Pro, Section 3.12.
[pcpro2016_all_questions_en.exm DISPLAY SETTINGS_02]