

4.3.10 Lesson Review

Date: 11/22/2025, 8:16:13 PM

Time Spent: 31:03

Score: 93%

Passing Score: 80%



Question 1

✓ Correct

The contrast on your projector's output is not displaying properly. In addition, the images continually flicker.

What is the MOST likely cause of the projector's display problems?

- ☐ The wrong cable is connected to the HDMI port.
- ☐ An outdated projector driver is in operation.
- ☒ A bulb is close to burning out. ✓ Correct
- ☐ The high-definition files are not in sync with the audio files.

Explanation

A bulb on the verge of burning out can cause a projector's screen contrast to display incorrectly and induce flickering.

An incorrect cable would not be the source of contrast and flickering problems.

An outdated projector driver could cause the projector to not display anything at all. However, it would not cause contrast or flickering problems.

High-definition files that are not in sync with audio files would not cause contrast or flickering problems.

Related Content



4.3.6 Troubleshoot Missing Video Issues



4.3.7 Troubleshoot Video Quality Issues

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Question 2

✔ Correct

Since it has no moving parts, a CPU will usually work properly for several years.

Which of the following is a common factor that might cause a CPU to fail prematurely?

- ☐ Electromagnetic interference
- ☒ Electrostatic discharge (ESD) ✓ Correct
- ☐ Magnetic field
- ☐ High CPU usage
- ☐ Unsupported memory modules

Explanation

Electrostatic discharge (ESD) is a sudden flow of electricity between two electrically charged objects caused by contact or a short circuit. ESD can damage sensitive electronic components, including CPUs, by creating a high-voltage surge that can destroy or degrade the delicate circuits within the processor. While CPUs are designed to last several years under normal operating conditions, they are highly sensitive to ESD during handling or installation. For example, if a technician does not use proper grounding techniques (such as wearing an anti-static wrist strap), static electricity from their body can discharge into the CPU, causing irreparable damage. This is why ESD is a common factor that might cause a CPU to fail prematurely.

While unsupported memory modules can cause system instability or prevent the system from booting, they do not directly cause physical damage to the CPU. The CPU itself is not likely to fail prematurely due to incompatible memory; instead, the system may simply not function correctly.

High CPU usage does not inherently cause a CPU to fail prematurely. Modern CPUs are designed to handle high workloads and include thermal protection mechanisms, such as throttling or shutting down, to prevent overheating. However, sustained high usage without adequate cooling could lead to overheating, which might indirectly damage the CPU over time, but this is not as immediate or common as ESD.

Magnetic fields generally do not affect CPUs because they are not magnetic storage devices. CPUs are made of silicon and other non-magnetic materials, so they are not susceptible to damage from magnetic fields in the same way that hard drives or other magnetic storage devices might be.

Electromagnetic interference (EMI) can cause temporary disruptions in electronic signals and may lead to performance issues or data corruption. However, it does not typically cause permanent physical damage to a CPU. EMI is more of a concern for communication devices or systems with sensitive signal processing.

Related Content



4.3.3 Physical Damage



4.3.4 Troubleshoot Performance Issues



14.4.11 Troubleshoot Performance Issues

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Question 3

✔ Correct

You have just finished upgrading your desktop system's CPU. After running for about 15 minutes, the system spontaneously shuts down.

Which steps should you take FIRST to begin troubleshooting the issue? (Select two.)

- ☐ Check the power supply voltage switch.
- ☐ Replace the power supply.
- ☒ Make sure that you used thermal paste for the CPU. ✔ Correct
- ☒ Check the CPU fan power. ✔ Correct
- ☐ Remove any unnecessary components and run the system.

Explanation

After upgrading a CPU, one of the most critical components for its proper functioning is the cooling system. If the CPU fan is not powered or functioning correctly, the processor can quickly overheat, leading to spontaneous shutdowns as a protective measure. Ensuring that the CPU fan's power cable is securely connected and that the fan is operational is a crucial first step in troubleshooting overheating issues. A non-functional fan can cause the CPU to reach unsafe temperatures within minutes, triggering the system to shut down to prevent damage.

Thermal paste is essential for effective heat transfer between the CPU and the heat sink. Without thermal paste, the heat generated by the CPU cannot be efficiently dissipated, leading to overheating and system shutdowns. Ensuring that thermal paste was applied correctly during the CPU installation is another critical step in diagnosing and resolving

Question 4

✓ Correct

A technician is troubleshooting an issue with a computer. Although the computer is on the network, the server will not authenticate the user. What kind of problem does this indicate?

☒ Inaccurate date/time ✓ Correct

☐ Disk failure

☐ Cabling issues

☐ Overheating

Explanation

If the computer does not correctly synchronize the date and time with other computers on the network, security systems such as authentication will not work.

A hard disk drive (HDD) is most likely to fail due to mechanical problems either in the first few months of operation or after a few years.

The technician not securely connecting the cables at both ends, the cable has become stretched or crimped, or an incorrect cable specification may all cause cabling issues.

Unusual odors, such as a burning smell or smoke, will almost always indicate that something (probably the power supply) is overheating.

Related Content



4.3.5 Troubleshoot Inaccurate System Date/Time

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Question 5

✔ Correct

You are an IT technician tasked with resolving a recurring issue where a user's computer frequently locks up and reboots unexpectedly.

After confirming that software issues are not the cause, you suspect a hardware problem. The user reports that the issue often occurs after the computer has been running for a few hours.

Based on this scenario, what is the MOST appropriate action to apply next?

☒ Check the CPU fan and heat sink to ensure they are functioning properly and not causing overheating. ✔ Correct

☐ Update the computer's BIOS to the latest version available from the manufacturer.

☐ Replace the computer's RAM modules with new ones to see if the problem resolves.

☐ Run a full antivirus scan to double-check for any missed malware.

Explanation

The problem occurring after the computer has been running for a while suggests a thermal issue. Checking the CPU fan and heat sink is a practical application for troubleshooting overheating, which can cause system lockups and reboots.

Replacing RAM without first confirming it as the source of the problem is not an efficient application of troubleshooting skills. The scenario suggests a thermal issue rather than a memory problem.

The scenario states that software issues, including malware, have already been ruled out. Therefore, running another antivirus scan is not an appropriate application for troubleshooting in this context.

Updating the BIOS is not directly related to addressing the symptoms described in the scenario. The issue is more likely related to overheating, as indicated by the timing of the lockups and reboots.

Related Content

 4.3.1 Troubleshoot Component Issues

 4.3.3 Physical Damage

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Question 6

✕ Incorrect

A company employee reports that their computer, which was recently upgraded with additional RAM and a new SSD, is still experiencing sluggish performance. As an IT analyst, you need to determine the underlying cause of the issue.

Which of the following analyses would BEST help you identify the root cause of the sluggish performance?

- ☒ Analyze the system configuration to ensure that the new RAM is operating in dual-channel mode and the SSD is properly configured. ✓ Correct
- ☐ Analyze the network traffic to determine if bandwidth limitations are affecting the computer's performance.
- ☐ Analyze the system's temperature logs to check for any signs of overheating that might throttle performance.
- ☐ Analyze the software applications running on the system to identify any resource-intensive processes. ✕ Incorrect

Explanation

Ensuring that the RAM is in dual-channel mode and the SSD is configured correctly can reveal misconfigurations that might be causing the sluggish performance.

While overheating can cause performance throttling, the scenario involves recent hardware upgrades. Analyzing temperature logs is more about preventing thermal issues rather than addressing potential misconfigurations related to new hardware.

Network traffic analysis is more relevant to diagnosing network-related performance issues. The scenario focuses on hardware upgrades, so network bandwidth is unlikely to be the root cause of the sluggish performance.

While identifying resource-intensive processes is important, the scenario specifically involves recent hardware upgrades. The focus should be on analyzing hardware configurations rather than software processes to identify the root cause of the performance issue.

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14.4.11 Troubleshoot Performance Issues

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Question 7

✔ Correct

A technician must determine why a computer is overheating. Which of the following may be the cause? (Select two.)



The area is too warm. ✔ Correct



Blanking plates are covering slots.



A fan is not working. ✔ Correct



There is an invalid cable specification.

Explanation

A computer can overheat because a fan is not working. Proper cooling is vital to the lifespan and performance of the processor.

A computer can overheat because an area is too warm. The technician should check whether the PC is near a hot radiator or in direct sunlight.

A technician should always use blanking plates to cover up slots in the back or front of the PC. Holes can create gaps, allowing dust and debris to make their way to computing components.

An invalid cable specification can cause display issues. If the display is on and the technician can rule out a problem with the input source, they should check the cable.

Related Content

3.4.5 CPU Features



4.2.1 Troubleshoot Power Issues



4.3.2 Overheating



4.3.4 Troubleshoot Performance Issues



14.4.11 Troubleshoot Performance Issues

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Question 8

✔ Correct

You are tasked with evaluating a computer system that frequently experiences random shutdowns and OS blue screen errors. After eliminating software issues, you suspect a hardware problem.

Which of the following actions would be the MOST effective in evaluating the stability of the system's power supply?

- ☐ Visually inspect the power supply for any physical damage or burnt smells.
- ☐ Replace the power supply with a new one to see if the problem persists.
- ☐ Check the system's event logs for any power-related error messages.
- ☒ Use a multimeter to measure the output voltages of the power supply. ✓ Correct

Explanation




Using a multimeter to measure the output voltages allows you to accurately evaluate whether the power supply is providing stable and correct voltages to the system. This method provides direct and quantitative data about the power supply's performance.

While a visual inspection can reveal obvious physical damage or burnt smells, it does not provide a comprehensive evaluation of the power supply's stability or voltage output.

Replacing the power supply without first evaluating the current one does not provide an understanding of the existing power supply's condition. It is more of a trial-and-error approach rather than an evaluative one.

While checking event logs can provide insights into power-related issues, it does not directly evaluate the power supply's voltage stability. Event logs are more useful for identifying patterns or symptoms rather than evaluating hardware components.

Related Content

-  4.2.8 Troubleshoot OS Errors and Crash Screens
-  4.3.1 Troubleshoot Component Issues
-  4.3.3 Physical Damage

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Question 9

✓ Correct

When diagnosing performance issues in a computer system, which of the following steps is crucial to ensure that overheating is not the cause of the problem?

- ☐ Use diagnostic tests to compare CPU performance against known baselines.
- ☒ Monitor temperature sensors and fan speeds. ✓ Correct
- ☐ Verify the compatibility of new components with the motherboard.
- ☐ Rule out operating system and application issues.

Explanation







Monitoring temperature sensors and fan speeds is directly related to diagnosing overheating issues. High temperatures can cause components to throttle performance to prevent damage, making this step crucial in identifying overheating as a potential cause of performance problems.

While verifying component compatibility is important for diagnosing performance issues, it specifically addresses misconfigurations that might occur after a new build or upgrade. It does not directly relate to checking for overheating.

Using diagnostic tests to compare CPU performance against known baselines is useful for verifying the problem and isolating performance issues to specific subsystems. However, it does not specifically address overheating, which requires monitoring temperature and cooling systems.

Ruling out software and configuration issues is important for diagnosing performance problems, but it does not specifically address overheating. This step focuses on ensuring that the problem is not software-related before assuming a hardware issue.

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-  4.2.1 Troubleshoot Power Issues
-  4.3.2 Overheating
-  4.3.4 Troubleshoot Performance Issues
-  14.4.6 Update and Driver Roll Back
-  14.4.11 Troubleshoot Performance Issues



14.4.12 Troubleshoot System Fault Issues

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Question 10

✔ Correct

A customer complains that a recently purchased monitor no longer displays a picture. You verify that the monitor is powered on and that the video cable is securely fastened to the video port.

Which of the following actions is the BEST to take next?

- ☐ Return the monitor to the manufacturer.
- ☒ Check the brightness and contrast settings using the monitor's controls. ✓ Correct
- ☐ Unload and then reload the video card's software driver.
- ☐ Open the computer and switch the video card to a different slot.

Explanation

When troubleshooting a monitor that no longer displays a picture, it is important to start with the simplest and most accessible solutions before moving on to more complex or invasive steps. In this case, checking the brightness and contrast settings using the monitor's on-screen controls is the best next step. Sometimes, the brightness or contrast may have been accidentally adjusted to a level where the screen appears blank or too dim to see. This is a common and easily overlooked issue that can be resolved quickly without requiring any hardware changes or software adjustments. Additionally, the monitor's controls can also help verify if the monitor is functioning properly by allowing you to navigate its on-screen display (OSD) menu.

Returning the monitor to the manufacturer should only be considered as a last resort after all troubleshooting steps have been exhausted. Since the issue could be something as simple as incorrect brightness or contrast settings, returning the monitor at this stage would be premature and unnecessary.

Opening the computer and switching the video card to a different slot is a more advanced troubleshooting step that is not appropriate at this stage. The issue may not even be related to the video card, and such an action could introduce additional variables or risks (e.g., damaging components). It is better to rule out simpler causes, such as monitor settings, before attempting hardware changes.

Reloading the video card's driver is a software troubleshooting step that is more relevant if the issue is determined to be related to the video card or its driver. However, since the monitor itself is not displaying a picture, it is more logical to first verify the monitor's settings and functionality before addressing potential software issues.

Related Content



4.3.7 Troubleshoot Video Quality Issues

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Question 11

✓ Correct

You have just purchased 10 new notebook computers for your users. You are concerned that users will leave the notebooks on for long periods of time, which could result in display burn-in.

What should you do to prevent this from happening?

- ☐ Configure each computer to automatically power off after five minutes of inactivity.
- ☐ Increase the hardware acceleration setting on each computer.
- ☐ Install a software utility on each computer that is designed to fix stuck pixels.

☒ Configure a screen saver on each computer. ✓ Correct

Explanation

Burn-in can happen when the same image is displayed on the screen for an extended period of time. The best way to prevent this from happening is to configure a screen saver on each computer.

Configuring the computers to automatically power off after five minutes of inactivity can prevent burn-in, but this will also make the notebooks very inconvenient to use.

Increasing hardware acceleration settings will not prevent burn-in from occurring.

Installing a software utility on each system that is designed to fix stuck pixels is a solution for repairing a burnt-in display, but this will not prevent burn-in from happening in the first place.

Related Content

4.3.7 Troubleshoot Video Quality Issues

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Question 12

✔ Correct

While trying to use a projector for a presentation, you receive an error that states, "No signal detected."

What is the MOST likely cause of this error?

- ☒ A loose HDMI cable ✓ Correct
- ☐ Weak remote control batteries
- ☐ Obstructed air vents on the projector
- ☐ A burned-out bulb

Explanation

A loosely connected HDMI cable often causes a projector to be unable to detect a signal.

A burned-out bulb would cause the projector to be unable to display anything at all.

Obstructed vents could cause the bulb to burn out or could cause a sensor to trigger a shutdown.

Weak batteries in the remote control would affect the remote control's ability to communicate with the projector, but this would not result in a "No signal detected" error.

Related Content

4.3.6 Troubleshoot Missing Video Issues

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Question 13

✔ Correct

A user reports that their computer is running sluggishly after a recent upgrade. As an IT specialist, you need to evaluate the situation to determine the most likely cause.

Which of the following actions would BEST help you assess whether the sluggish performance is due to a hardware bottleneck?

- ☐ Verify the compatibility of the new components with the motherboard.
- ☒ Use diagnostic tests to compare the system's performance against known baselines. ✓ Correct
- ☐ Check for overheating by monitoring temperature sensors and fan speeds.
- ☐ Rule out software and configuration issues by checking for faulty network login scripts.

Explanation




Using diagnostic tests to compare the system's performance against known baselines directly evaluates the system's performance by comparing it to known baselines, helping to identify if a specific component is underperforming and causing a bottleneck. It provides a quantitative assessment of the system's capabilities.

While checking for overheating is important, it primarily addresses thermal issues rather than directly evaluating whether a hardware bottleneck is causing sluggish performance. Overheating can lead to throttling but it does not specifically identify a bottleneck.

Ensuring compatibility is crucial to prevent misconfigurations, but it does not directly evaluate the system's current performance against expected standards. Compatibility checks are more preventive than evaluative in nature.

While ruling out software issues is necessary, this step focuses on eliminating non-hardware causes of sluggishness. It does not evaluate the hardware's performance or identify bottlenecks within the system's components.

Related Content

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-  4.3.4 Troubleshoot Performance Issues
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14.4.11 Troubleshoot Performance Issues



14.4.12 Troubleshoot System Fault Issues

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Question 14

✓ Correct

After working without problems for a couple of years, your computer has begun to lock up. You suspect that it is a thermal issue, but you can't find any component that is not functioning correctly.

You have not replaced the CPU or installed any new devices. The CPU cooling fan and the power supply fan are working properly. The lock-ups are happening with increasing frequency.

Which of the following is the MOST common condition that explains these symptoms?

- ☒ An accumulation of dust has gradually built up. ✓ Correct
- ☐ The internal temperature sensor is beginning to malfunction intermittently.
- ☐ The power supply has been switched to the wrong voltage setting.
- ☐ The BIOS has never been flashed and has gotten more and more out of date.

Explanation




Over time, an accumulation of dust can gradually build up and cause significant overheating (which results in lock-ups) by constricting airflow through the system case. Vent holes and heat sinks can become clogged with dust, which prevents heat dissipation. Remove the dust with compressed air or with an anti-static vacuum.

You should always flash the BIOS when firmware updates become available, but failing to do so will not lead to the system overheating.

Switching the power supply to the wrong voltage can damage system components, but this would not lead to the system locking up more frequently over time. The damage would happen immediately.

A malfunctioning heat monitor could cause the system to lock up, but the frequency is likely to be intermittent, not consistently increasing.

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Question 15

✓ Correct

A technician is troubleshooting a projector that keeps randomly shutting down. What is the most likely cause?

- ☐ Burned-out bulb
- ☒ Overheating ✓ Correct
- ☐ Incorrect data source
- ☐ Loose cable between the monitor and the display

Explanation


Overheating typically causes intermittent projector shutdown. Check that the projector's fan is working, that the vents are free from dust and obstructions, and that the ambient temperature is not too high.

A completely failed bulb is known as a burned-out bulb. A technician might hear the bulb "pop" and observe scorch marks on the inside or a broken filament.

If the projector is on, but there is no image displayed, the technician should check the cable and connectors between the video card and monitor.

The technician may also need to adjust the image or select the appropriate data source or input channel if no image is displayed.

Related Content

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