

2.2.18 Lesson Review

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Time Spent: 13:11

Score: 100%

Passing Score: 80%

Question 1

✓ Correct

How does the type of motherboard affect a computer system?

- ☐ It allows any CPU model to be installed.
- ☒ It affects the range of devices and adapter cards that can be installed. ✓ Correct
- ☐ It determines the CPU speed.
- ☐ It limits the number of software applications that can run.

Explanation

The type of motherboard impacts system speed and dictates which devices, CPU models, and adapter cards can be installed, affecting compatibility and expandability. Motherboards do not directly control RAM size for open applications, nor do they support any CPU model without compatibility considerations. Storage options are also influenced by the motherboard's specifications and connections.

Related Content

resources\questions\q_mb_type_considerations.question.xml

Question 2

✔ 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 that you want to use.

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

Which steps must you take for the Micro-ATX motherboard to work in the ATX case?



No additional steps are necessary. You can install the Micro-ATX motherboard in the ATX case.

✔ Correct



Drill new holes in the ATX case to match the mounting hole pattern in the Micro-ATX motherboard.



Drill new holes in the Micro-ATX motherboard to match the mounting hole pattern in the ATX case.



Return the motherboard and replace it with an ATX form factor motherboard, as the Micro-ATX motherboard does not fit without modifying the case.

Explanation

ATX mid-tower cases support all ATX form factors, including Micro-ATX. The main difference between ATX and Micro-ATX is the number of bus and memory slots on the motherboard.

You do not need to return the motherboard, and drilling holes in the motherboard or case can compromise or damage the integrity of both.

Related Content

2.2.7 Motherboard Form Factors

resources\questions\q_mb_micro_atx_in_atx_pp7.question.xml

Question 3

✓ Correct

Why is mass storage necessary in a computer system?

- ☐ To store only non-essential data temporarily
- ☒ To preserve data and files when the computer is turned off ✓ Correct
- ☐ To increase the processing speed of the CPU
- ☐ To control the motherboard's system clock

Explanation

Mass storage is necessary to retain data and files even when the computer is powered off. It does not affect CPU processing speed or control the system clock, and it is used for both essential and non-essential data rather than just temporary storage.

Related Content

resources\questions\q_mb_mass_storage_purpose.question.xml

Question 4

✓ Correct

You are in the process of installing a motherboard in a system case.

Which of the following objects should you place between the motherboard and the system case?

- ☐ Passive heat sink
- ☐ Support manual
- ☐ Fans
- ☐ Heat spreaders

☒ Standoffs ✓ Correct

Explanation

Standoffs go between the motherboard and the case. Standoffs prevent the motherboard circuits from touching the system case and grounding or shorting.

Heat spreaders go on memory modules to help cool them.

Fans are installed in the system case but not between the motherboard and the case.

Passive heat sinks are installed with chipsets and low-performance processors.

The support manual is a booklet that contains information about the motherboard.

Related Content

resources\questions\q_mb_inst_standoffs_pp7.question.xml

Question 5

✓ Correct

Which of the following expansion buses uses a point-to-point dedicated connection and provides a serial full-duplex method of transmission?


- ☐ PCI
- ☒ PCIe ✓ Correct
- ☐ PCI-X
- ☐ VESA local bus
- ☐ AGP


Explanation

PCIe was developed to replace PCI, PCI-X, and AGP. Instead of a shared bus, each PCIe slot links to a switch that prioritizes and routes data through a point-to-point dedicated connection and provides a serial full-duplex method of transmission.

The VESA local bus was a short-lived expansion bus that worked alongside the then-dominant ISA bus to provide a standardized high-speed conduit intended primarily to accelerate video (graphics) operations. VESA utilized a shared bus.

Related Content

 2.2.5 Peripheral Component Interconnect Express Interface

 2.2.6 Peripheral Component Interconnect Interface

 2.2.12 Video Cards

resources\questions\q_mb_pcie_exp_bus_def_pp7.question.xml

Question 6

✓ Correct









What distinguishes the M.2 interface from SATA regarding power requirements?

- ☐ The M.2 interface only supports low-power devices that do not require an external power source.
- ☐ The M.2 interface requires a SATA power cable for functionality.
- ☒ The M.2 interface supplies power over the bus. ✓ Correct
- ☐ The M.2 interface requires a separate Molex connector for power.

Explanation

The M.2 interface provides power over the bus itself, so it does not require a separate power cable. Unlike SATA, which often needs a SATA or Molex power connector, M.2 simplifies installation by integrating power directly through the slot. It supports various devices, not just low-power ones.

Related Content

-  2.2.4 Motherboard Storage Connectors
-  3.2.3 Solid-State Drives
-  3.2.11 Optical Drives
-  4.2.13 Troubleshooting Problems with Storage Drives & RAID Arrays
-  8.2.7 Cloud File Storage
-  12.4.2 Storage
-  15.2.2 Windows Domains and Active Directory
-  21.1.4 Backup Media Requirements

resources\questions\q_mb_m2_vs_sata_connectors.question.xml

Question 7

✔ Correct

What should be done when disassembling a computer to ensure correct reconnection of header connectors?

- ☐ Ignore the orientation of connectors because they fit only one way.
- ☐ Match connectors based on color alone.
- ☐ Only refer to the labels on the wires.
- ☒ Document the position and orientation of connectors. ✓ Correct

Explanation

Documenting the position and orientation of connectors using diagrams or photos is recommended to ensure correct reassembly, as labels can sometimes be small or difficult to interpret. Simply relying on connector color or assuming they fit one way can lead to improper connections.

Related Content

resources\questions\q_mb_reconnect_header_connectors.question.xml

Question 8

✓ Correct

The CEO of your small company has asked you to connect his laptop computer to the small conference room LED TV. The CEO will be showing a new promotional video that demonstrates the new company strategy through images and sound.

Which of the following cable types would work BEST for connecting his laptop to the display?

☐ Composite

☐ DVI

☐ VGA

☒ HDMI ✓ Correct

Explanation

HDMI is the default cable standard for newer electronic devices, such as Blu-ray players and LED TVs. HDMI can carry both digital video and audio signals. Most modern computers include an HDMI port.

DVI and VGA only support video signals.


Composite cables support video but not audio.

Related Content

 2.1.1 Personal Computers

 2.1.3 Peripheral Devices

 2.1.10 HDMI and DisplayPort Video Cables

 2.2.12 Video Cards

resources\questions\q_mb_specs_hdmi_video_and_audio_pp7.question.xml

Question 9

✓ Correct

Which connector is part of the system case and connects to header pins on the motherboard?

- ☐ SATA power
- ☐ 24-pin ATX power
- ☐ 8-pin EPS12V
- ☒ Power switch ✓ Correct


Explanation

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

- Power switch
- Reset switch
- Case speaker

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

Related Content

 2.2.10 Motherboard Headers and Power Connectors

 3.1.1 Power Supply Units

 3.1.4 Power Supply Connectors

resources\questions\q_mb_inst_sys_case_connectors_pp7.question.xml

Question 10

✓ Correct

Which of the following expansion slots are most commonly used for video cards in modern computer systems?

- ☐ PCI
- ☐ CNR
- ☒ PCIe ✓ Correct
- ☐ AMR

Explanation


The PCIe (or PCI Express) expansion buses are most commonly used for video cards in modern computer systems.


PCI buses are most commonly used for devices such as sound cards, modems, network cards, and storage device controllers. While you can use PCI for video, better performance is obtained from PCI Express.

CNR is a legacy on-motherboard slot to support networking, wireless communication, sound, or modem functions.

AMR slots are legacy buses on some motherboards that are used by riser cards to support sound or modem functions.

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 2.2.5 Peripheral Component Interconnect Express Interface

 2.2.6 Peripheral Component Interconnect Interface

 2.2.12 Video Cards

resources\questions\q_mb_inst_pci_express_common_bus_pp7.question.xml

Question 11

✔ Correct

You have just finished replacing the motherboard in your friend Ethan's computer with the same type of motherboard that the computer had originally. You tested the motherboard by powering it on and verifying that the operating system started and that the applications work.

Now Ethan is complaining that his computer no longer recognizes his external hard drive, which he had connected to the previous motherboard.

Which of the following is MOST likely causing the external hard drive not to function?

- ☐ The computer's power supply was not connected properly.
- ☒ The USB front panel connector was not properly connected. ✓ Correct
- ☐ The replacement motherboard does not support external hard drives.
- ☐ The hard drive has failed.

Explanation

The most likely cause is that the USB cable is not connected or is not connected properly.

If the motherboard is a replacement, and Ethan had the external hard drive connected previously, the new motherboard should also support the external hard drive.

It is unlikely that the hard drive suddenly failed in such a short time.

Since the operating system and applications are functioning properly, the power supply is functioning correctly as well.

Related Content

resources\questions\q_mb_inst_trblsht_ext_hard_drive_pp7.question.xml

Question 12

✔ Correct


Why is thermal paste applied when installing a CPU?

- ☐ To increase the electrical connection between the CPU and the motherboard
- ☐ To allow the CPU to operate at a higher voltage
- ☒ To improve heat transfer between the CPU and the heat sink ✓ Correct
- ☐ To secure the CPU in its socket

Explanation

Thermal paste is applied to improve heat transfer between the CPU and the heat sink, helping to manage the heat generated by the processor. It does not increase the electrical connection or secure the CPU physically, nor does it allow the CPU to operate at a higher voltage.

Related Content

 2.2.3 Motherboard CPU and System Memory Connectors

 3.1.11 Heat Sinks and Thermal Paste

resources\questions\q_mb_cpu_thermal_paste.question.xml

Question 13

✓ Correct

Why does a motherboard typically support only a limited range of CPU models?

- ☐ Motherboards have software restrictions that prevent the use of unsupported CPUs.
- ☐ A motherboard's BIOS can only recognize CPUs of the same generation.
- ☒ Different CPUs require unique power delivery and socket designs. ✓ Correct
- ☐ CPUs with different performance levels cannot share the same motherboard.

Explanation

Modern CPUs are designed with specific electrical, physical, and technological requirements. These include the type of socket (e.g., LGA1200, AM4) and the power delivery systems that the motherboard provides. A motherboard must match these specifications to ensure proper communication and operation with the CPU. For example, an AMD Ryzen processor cannot be installed in an Intel motherboard because of incompatible sockets and architectures.

While the BIOS plays a critical role in recognizing and supporting a CPU, it can often be updated to support newer CPUs within the same socket and architecture.

Software restrictions are not typically the main factor in CPU compatibility. Hardware design (such as socket type, chipset, and power delivery) are the primary limits.

Performance level alone does not determine compatibility. Many motherboards are designed to support CPUs with varying performance levels within a given socket and architecture.

Related Content

resources\questions\q_mb_cpu_support.question.xml

Question 14

✓ Correct

What is the primary function of a capture card?

- ☒ To record or stream video input from various sources ✓ Correct
- ☐ To generate an output signal for a monitor
- ☐ To increase the graphics processing power of a computer
- ☐ To serve as a primary video card in gaming computers

Explanation

A capture card is primarily used to record or stream video input, such as gameplay or footage from HDMI sources, by saving it as a file or streaming it live. Generating an output for a monitor, increasing graphics processing power, and serving as the main video card in gaming computers are functions associated with graphics cards, not capture cards.

Related Content

2.2.14 Capture Cards

resources\questions\q_mb_capture_card_purpose.question.xml

Question 15

✔ Correct

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

- ☐ Heat spreader
- ☐ Fan
- ☒ I/O shield ✔ Correct
- ☐ Standoffs

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.

Fans are installed in the system case but not between the system case and the back I/O panel.

Heat spreaders are placed on memory modules to help cool them.

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