Exam Report: 3.5.9 Practice Questions

Date: 2/24/2020 10:39:35 pm
Time Spent: 9:24

Candidate: Garsteck, Matthew
Login: mGarsteck

Overall Performance

Your Score: 47%

Passing Score: 80%

View results by: Objective Analysis Individual Responses

Individual Responses

Question 1: Incorrect

You have a computer with a dual-core 64-bit processor that uses the x86-x64 instruction set. You want to install the 32-bit application on the computer.

Which of the following BEST describes the action you should perform?

- Replace the processor with a 32-bit processor.
- Install the application normally.
- Edit the BIOS and configure the processor to run in 32-bit mode.
- ~~During installation, install the 32-bit compatibility drivers.~~

Explanation

You can install a 32-bit application on a system with a 64-bit processor. If the processor runs the x86-64 architecture, the processor itself is capable of running the 32-bit application without modifications.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_01]

Question 2: Correct

When using Intel chips, which of the following features BEST allows a single processor to run two threads in parallel instead of processing single threads linearly?

- Overclocking
- Multi-processing
- Hyper-threading
- Dual core

Explanation

Hyper-threading allows a single processor to run threads in parallel, as opposed to processing threads linearly. Multi-processing is an operating system's ability to use multiple CPUs. Overclocking causes the processor to operate at a higher speed. Dual Core is a type of processor that offers better performance by combining two or more independent processors into a single integrated chip.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_06]

Question 3: Correct

Which of the following refers to placing two processors on a single processor chip or die?

- Multi-core
- Multi-processor
- Multi-threading
- Hyper-threading

Explanation

A multi-core processor has multiple processor cores integrated into a single processor package.
A multi-processor motherboard allows you to install two (or more) processors on the same motherboard.
Hyper-threading is a feature of some Intel processors that allows a single processor to run threads in parallel, as opposed to the older and slower technology of processing threads linearly. Multi-threading is an operating system feature that allows more than one process to work at the same time.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_09]

Question 4: Incorrect

Which of the following is a characteristic of a multi-processor system?

- Multiple processor sockets on the motherboard
- Shared L2 cache
- ~~Multiple cores on the same die~~
- Ability to use over 4 GB of memory

Explanation

A multiple-processor system has multiple CPUs, with each CPU requiring a different processor socket on the motherboard.

A multi-core system is a processor with multiple CPUs on the same die. A multi-core system uses a single processor socket for multiple CPUs. L2 cache might be shared between two or more cores in a multi-core system, but would not be shared in a multiple-processor solution. 64-bit processors are required to be able to use more than 4 GB of memory.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_10]

Question 5: Correct

Assuming all other processor specifications are the same, which of the following processor sizes will consume the least amount of power?

- 90 nm
- 45 nm
- 65 nm
- 32 nm

Explanation

A 32 nm (nanometer) processor will consume the least amount of power (all other things being equal). A smaller process size means smaller transistors, which translates into a smaller CPU die with more transistors and less power consumption.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_11]

Question 6: Correct

Brian is a new employee on the development team. As part of his job, he runs three virtual machines (VMs) on his computer. Each VM runs a different Windows license. After a while, Brian notices that his VMs are not running as fast as he thought. He has asked you to explore the issue.

Which of the following BEST describes why Brian's VMs are running slowly?

- Brian's computer has a single dual-core CPU containing two central processing units.
- Brian's computer has a single-core CPU configured to use hyper-threading.
- Brian's computer has two physical CPUs, but hyper-threading has not been configured.
- Brian's computer has a quad-core processor, which does not support virtualization.

Explanation

A single physical CPU core with hyper-threading appears as two logical CPUs to an operating system. While the operating system sees two CPUs for each core, the actual CPU hardware only has a single set of execution resources for each core. The CPU acts as if it has more cores than it does, but uses its own logic to speed up program execution.

Two physical CPUs (even without hyper-threading) would be faster than a single-core CPU using hyper-threading. Likewise, a dual-core CPU is faster than a single core with hyper-threading. Quad-core processors support virtualization.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_PERF_01]

Question 7: Correct

Which of the following BEST describes the purpose of a CPU socket?

- A CPU socket allows computer memory (RAM) to be inserted in the computer.
- A CPU socket is a single connector between a microprocessor and the motherboard.
- A CPU socket allows you to connect external devices such as your monitor, speakers, keyboard, and mouse.
- A CPU socket is used to expand the computer's functionality, like a video card, network card, or sound card.

Explanation

The processor socket (also called a CPU socket) is the connector on the motherboard that houses a CPU and forms the electrical interface and contact with the CPU. Common sockets include pin grid array (PGA) and land grid array (LGA).

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_SOCKETS_02]

Question 8: Incorrect

You are in the process of purchasing several new computers to replace broken or outdated computers. After much research, you have determined to purchase computers that use AMD sockets.

Which of the following BEST describes an AMD and why you would select this option? (Select TWO).

- [ ] Typically, an AMD uses a Pin Grid Array (PGA) socket type.

- [ ] Typically, an AMD uses numbers to represent the number of pins on the socket.
- [x] ~~Typically, an AMD has a larger market share.~~
- [x] Typically, AMD chips are less expensive.
- [ ] Typically, an AMD uses a land grid array (LGA) socket type.

Explanation

Generally speaking, CPUs manufactured by AMD tend to be less expensive than those manufactured by Intel, but they also don't perform quite as well as Intel CPUs. AMD chips typically use a pin grid array (PGA) socket type and do not include a number in their name to represent the pins used on the chip.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_SOCKETS_03]

Question 9: Incorrect

You have been using the same computer for several years. To extend its service life, you decide to upgrade the processor. You check the motherboard documentation and purchase the fastest processor supported by the motherboard. However, when you start the computer, it beeps regularly, nothing is displayed on the screen, and it doesn't start.

While troubleshooting this computer, which of the following would be BEST to try first?

- (•) ~~Press F8 while booting the computer.~~
- ( ) Upgrade the motherboard.
- ( ) Update the UEFI firmware.
- ( ) Return the CPU for a new one.

Explanation

Flashing the BIOS or UEFI firmware is often required to upgrade system components that are part of the motherboard, such as upgrading to a faster processor. If the motherboard documentation lists the processor as supported but it is not correctly recognized, updating the BIOS or UEFI firmware to the latest version may fix the problem.

Pressing F8 while the system is booting displays the advanced boot menu on older versions of Windows. Replacing the motherboard is probably not required because the motherboard was working correctly previously and the documentation indicates that the new CPU is supported. You would only replace the CPU if you determined that it is faulty.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_INST_03]

Question 10: Incorrect

You have been using the same computer for several years. To improve performance, you decide to upgrade the processor. You check the motherboard documentation and purchase the fastest processor supported by the motherboard. However, when you try to start the computer, it beeps regularly, and nothing is displayed on the screen.

Which of the following actions would MOST likely rectify this issue? (Select TWO).

- [x] ~~Press F8 while booting the computer.~~
- [ ] Return the CPU for a new one.
- [ ] Verify that the CPU fan is connected to the motherboard.
- [x]

Flash the UEFI firmware.

Reinstall the old processor in the motherboard.

Explanation

Flashing the BIOS or UEFI firmware is often required to upgrade system components, such as upgrading to a faster processor. If the motherboard documentation lists the processor as supported but it is not correctly recognized, updating the BIOS or UEFI firmware to the latest version may fix the problem. Before you can do this, you must reinstall the old processor in the system to get it back up and running again.

Pressing F8 while booting the system displays the advanced boot menu on older versions of Windows. Replacing the motherboard probably isn't required because the motherboard was working correctly with the older CPU and the documentation indicates that the new CPU is compatible. Only replace the CPU if you have determined that it is faulty.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_INST_04]

Question 11: Incorrect

Your motherboard has two memory slots and supports a maximum of 8 GB of RAM. You are using a 32-bit version of Windows. After installing two 4 GB modules and booting your system, you find that Windows only recognizes 3.5 GB of RAM.

Which of the following would MOST likely fix this issue?

~~Make sure that both modules are seated properly in their slots.~~

Change the memory timings in the BIOS to a slower (higher) setting.

Upgrade to a 64-bit version of Windows.

Return both modules for a replacement.

Reboot the computer and run memory diagnostic tests on the memory.

Explanation

In this situation you are 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, so 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 do 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 does not enable memory the BIOS doesn't recognize.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_INST_05]

Question 12: Incorrect

Your computer has one single core processor installed. The motherboard supports processors with up to four cores. You want to upgrade your computer to a quad-core system. Which of the following will be part of your configuration?

Add a second processor that matches the speed of the first processor.

Replace the existing processor.

~~Configure the system to use dual channel memory.~~

Remove the terminating resistor from slots where the new processor will be installed.

Explanation

A multi-core system supports processors that have multiple processors on a single processor die. Multi-core systems have a single processor slot. To upgrade this system, you need to remove the existing processor and replace it with one that has four cores. Multi-processor systems have multiple processor slots on the motherboard. All processors in the system should be of the same speed. Unused slots are filled with a terminating resistor. Dual-channel memory does not affect using dual processors or dual core processors.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_INST_06]

Question 13: Correct

You would like to upgrade the processor in your system to a 64-bit processor. Which of the components will you most likely need to upgrade as well to take full advantage of the new processor?

- RAM
- Hard disk
- Operating system
- BIOS

Explanation

The motherboard and the operating system must be able to support the processor in use. Many 64-bit CPUs can run a 32-bit version of the operating system. However, the operating system will run only in 32-bit mode and will not take full advantage of the 64-bit processor. Even if you stick with the 32-bit operating system, chances are you will need to upgrade the hardware abstraction layer (HAL) to one that is compatible with the 64-bit processor. The BIOS must support the 64-bit processor. However, when you upgrade the motherboard, you will get a new BIOS chip, so upgrading the BIOS will not be an issue.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_INST_07]

Question 14: Correct

You are a high school student learning about computers and how to build them. As a class project, you have built a new computer.

You power on your computer and begin to configure the system. After a short while, you notice smoke coming from the PC, and shortly after that, the computer stops working. After removing the computer case, you see that the CPU and surrounding areas are burnt and very hot. You realize that the costly mistake you made was not using a heat sink.

When rebuilding your computer, which of the following cooling systems would MOST efficiently remove heat from the CPU?

- Heat sink, thermal paste, and fan
- Passive heat sink with thermal paste
- Active heat sink, thermal paste, liquid pipes, and fan
- Passive heat sink
- Passive heat sink, thermal paste, liquid pipes, and fan

Explanation

At a minimum, a heat sink should always be used in conjunction with a fan. The fan's job is to blow air over the heat sink to increase the air flow which, in turn, removes heat from the heat sink faster.

Although this is a good solution for many systems, a better cooling system is one that incorporates a heat sink, fan, and pipes filled with water.

The heat pipes that are filled with a liquid absorbs heat from the CPU. Doing this actually causes the liquid within the pipe to evaporate. Since vapor is less dense than the liquid around it, the vapor rises towards the heat sink on the other end of the heat pipe. This type of heat sink also includes a fan that cools the vapor, causing it to re-condense back into a liquid, which then drops back down to the CPU on the other end of the heat pipe. This cycle repeats indefinitely to remove heat from the CPU.

In all cases, heat sinks should be attached using a thermal paste.

Active heat sinks use an electric power to run the fan or any other devices to actively divert heat away from the components.

Passive heat sinks have no mechanical parts, making them dependable and easy to install.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_INST_09]

Question 15: Incorrect

You work at a computer repair store. You just upgraded the processor (CPU) in a customer's computer. The computer starts, but it shuts down shortly after starting Windows.

Which of the following is MOST likely causing the computer to automatically shut down?

- The fan has no power.
- The computer has a virus.
- ~~The CPU is not supported by the BIOS.~~
- The CPU is bad.

Explanation

Today, most computers are designed to turn off automatically if inner components overheat. In this case, the power connector for the fan was not connected to the motherboard. Either this cable was intentionally unplugged while the upgrade was performed or the cable was accidently disconnected.

If the CPU was bad or not supported, the computer would most likely not boot to the operating system. Although a virus could cause this symptom, the computer was not shutting down before you ever worked on it. And since you did not need to connect to the internet to upgrade the CPU, a virus is an unlikely cause.

References

TestOut PC Pro - 3.5 Processors
[e_proc_pp6.exam.xml Q_CPU_INST_10]