

## Exam Report: 3.14.3 Practice Questions

Date: 3/12/2020 9:22:35 pm  
Time Spent: 15:28

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## Overall Performance

Your Score: 64%



Passing Score: 80%

View results by: ☐ Objective Analysis ☒ Individual Responses

## Individual Responses

### ▼ Question 1: Incorrect

Which of the following processor features used is MOST likely to dynamically reduce power consumption based on current operating conditions?

- ☐ Hyper-threading
- ☐ Overclocking
- ➡ ☐ Throttling
- ☒ Caching
- ☐ Multi-core

### Explanation

Throttling modifies the operating characteristics of a processor based on current conditions.

Overclocking is a feature offered on special motherboards that causes the processor to operate at a higher speed. A multi-core processor has multiple processor cores integrated into a single processor package. Hyper-threading is a feature of some Intel processors that allows the CPU to process threads in parallel. Caching, when used to describe processors, is a temporary storage area for data that is waiting for the processor.

### References

TestOut PC Pro - 3.14 Cooling  
[e\_cool\_pp6.exam.xml Q\_COOLING\_01]

### ▼ Question 2: Incorrect

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

- ☐ Installing a water cooling system.
- ➡ ☐ Removing the case side panel.
- ☐ Installing heat spreaders and heat sinks on internal components.

- ☒ ~~Cleaning off the inside of the computer case.~~
- ☐ Adding thermal paste or a thermal pad between the CPU and the heat sink.

### Explanation

Removing the case side panel will not keep a system from overheating. The system case is 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

TestOut PC Pro - 3.14 Cooling  
[e\_cool\_pp6.exam.xml Q\_COOLING\_02]

#### ▼ Question 3: Correct

What is the correct order for installing a processor for proper cooling?

- ➡ ☒ CPU, thermal paste, heat sink, fan
- ☐ Heat sink, CPU, thermal paste, fan
- ☐ CPU, heat sink, thermal paste, fan
- ☐ Thermal paste, CPU, heat sink, fan

### Explanation

The following is the correct order for applying devices to cool a processor:

- CPU
- Thermal paste
- Heat sink
- Fan

### References

TestOut PC Pro - 3.14 Cooling  
[e\_cool\_pp6.exam.xml Q\_COOLING\_03]

#### ▼ Question 4: Correct

Which of the following thermal solutions might you find on memory modules?

- ☐ Liquid cooling
- ➡ ☒ Passive heat sink
- ☐ Active heat sink
- ☐ Surface area dissipation

### Explanation

Memory modules use passive heat sinks (also called heat spreaders). They do not have a fan because they rely on increased surface area and passive air movement to cool them.

Surface area dissipation is a generic term for cooling used by both active and passive cooling systems. Active heat sinks are used by components that generate more heat, such as CPUs, high-end video cards, and some motherboard chipsets with integrated graphics. Liquid cooling systems are used when air cooling is not sufficient. Liquid-based cooling systems are composed of tubes, cooling plates, a reservoir, and a radiator; they are primarily used for high-end gaming computers and high-performance systems.

## References

TestOut PC Pro - 3.14 Cooling  
[e\_cool\_pp6.exam.xml Q\_COOLING\_04]

### ▼ Question 5: Incorrect

Match the cooling system types on the left with the appropriate characteristics and uses on the right. Each cooling system type can be used once, more than once, or not at all.

Used for cooling high-end video cards

~~Liquid cooling~~

Active heat sink

Used for cooling high-end gaming computers

✓ Liquid cooling

Has a fan attached to the heat sink

✓ Active heat sink

Used for cooling CPUs

✓ Active heat sink

Exhausts hot air out of the back of the case

~~Active heat sink~~

Power supply

Used for cooling memory modules

✓ Passive heat sink

Used for cooling high-performance systems

✓ Liquid cooling

Has no fan attached to the heat sink

✓ Passive heat sink

## Explanation

Active heat sinks have an attached fan that helps cool off the component at a faster rate. Active heat sinks are used with the following components:

- CPUs

- High-end video cards

Passive heat sinks do not have a fan and instead rely on increased surface area and passive air movement to cool the component. Passive heat sinks are used with the following components:

- Low-end video cards
- Memory modules

ATX power supplies aid in cooling by exhausting hot air out the back of the case. Liquid cooling systems are used when air cooling is not sufficient. Because liquid cooling can dissipate heat much faster than air cooling, it is primarily used for high-end gaming computers and high-performance systems. Case fans create a pressurized system that allows air to flow through the case in a specific way.

## References

TestOut PC Pro - 3.14 Cooling  
[e\_cool\_pp6.exam.xml Q\_COOLING\_05]

### ▼ Question 6: Incorrect

Which of the following accurately describes case fans? (Select TWO).

- ☐ Do not have a specific design for moving air.
- ☐ Only necessary on high-end gaming systems.
- ➡ ☐ Create a pressurized system inside the case.
- ☒ ~~To reduce dust and debris, they should all exhaust hot air.~~
- ➡ ☒ Pull cool air from the front and blow hot air out the back.

## Explanation

Case fans create a pressurized system that allows air to flow through the case in a specific way.

- Intake fans (at the front) pull air inside the case to cool components.
- Outtake fans (at the back and top) exhaust warm air from inside the case.

Because all computers generate heat, case fans are necessary on even basic computers to properly dissipate heat and prevent overheating issues. Even though intake case fans will pull in dust and debris, having all the case fans exhaust air would be extremely inefficient and could cause overheating issues. Case fan filters can be installed if dust and debris is an issue.

## References

TestOut PC Pro - 3.14 Cooling  
[e\_cool\_pp6.exam.xml Q\_COOLING\_06]

### ▼ Question 7: Correct

Which of the following will ensure optimal system cooling? (Select THREE).

- ➡ ☒ Bundle cables together and secure unused cables to the case.

- ☐ Remove unused expansion slot covers to increase air flow.
- ➔ ☒ Keep the ambient temperature below 80° F.
- ➔ ☒ Leave space between the case and any walls or obstructions.
- ☐ Stack hard drives next to each other.
- ☐ Remove the side panel on the case.

## Explanation

Consider the following recommendations to ensure optimal system cooling:

- Keep the case free of dust and debris. Excess dust can restrict airflow and prevent proper heat transfer.
- Reduce the number of airflow obstructions.
  - Employ proper cable management (bundle cables together and secure unused cables to the case).
  - Space out multiple hard disk drives instead of stacking them next to each other.
- Maintain appropriate ambient temperatures. Optimal ambient temperatures are between 60 and 80 degrees Fahrenheit.
- Ensure proper ventilation; leave space between the computer and any walls or desks.
- Preserve negative pressure inside the case by keeping all covers and shields installed (unused expansion cards, I/O shield, front drive bays).

## References

TestOut PC Pro - 3.14 Cooling  
[e\_cool\_pp6.exam.xml Q\_COOLING\_07]

### ▼ Question 8: Correct

Which of the following characteristics accurately describe passive heat sinks?

- ☐ Used by liquid-based cooling systems
- ☐ Used on high-end video cards
- ☐ More efficient than active heat sinks
- ➔ ☒ More reliable than active heat sinks

## Explanation

Passive heat sinks do not have a fan and instead rely on increased surface area and passive air movement to cool the component. Because they do not use a fan, passive heat sinks are 100% reliable. Passive heat sinks are used with the following components:

- Most motherboard chipsets
- Low-end video cards
- Memory modules (heat sinks on memory modules are also called heat spreaders)

## References

TestOut PC Pro - 3.14 Cooling  
[e\_cool\_pp6.exam.xml Q\_COOLING\_08]

### ▼ Question 9: Correct

You have just finished upgrading the CPU in your desktop system. After running the system for about 10 minutes, the system locks up and automatically restarts.

Which of the following is the BEST first step in troubleshooting the problem? (Select TWO).

- ☐ Replace the power supply.
- ☐ Remove any unneeded components and run the system.
- ➡ ☒ Make sure the heat sink is properly mounted and has thermal paste.
- ➡ ☒ Check the CPU fan power.
- ☐ Check the power supply voltage switch.

## Explanation

System lockups and restarts can be caused by several problems, including an overheated processor. Because the CPU has just been replaced, this is the most likely cause of the problem. First, you should make sure the CPU fan is running. After that, you should check if the heat sink is properly mounted and has thermal paste between it and the CPU.

## References

TestOut PC Pro - 3.14 Cooling  
[e\_cool\_pp6.exam.xml Q\_COOLING\_09]

### ▼ Question 10: Correct

Where should the thermal paste go when installing a processor?

- ☐ Between the heat sink and fan
- ☐ Between the motherboard and CPU
- ➡ ☒ Between the heat sink and CPU
- ☐ Between the CPU and fan

## Explanation

Thermal paste or a thermal pad is found between the heat sink and the CPU. The thermal paste helps to make 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

TestOut PC Pro - 3.14 Cooling

[e\_cool\_pp6.exam.xml Q\_COOLING\_10]

▼ **Question 11:**      Correct

A computer was brought into your help desk center for repair. You have been told that it randomly locks up.

Which of the following is MOST likely causing this issue?

- ➡ ☒ Overheated processor
- ☐ Failing network adapter
- ☐ Faulty mouse or keyboard
- ☐ 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

TestOut PC Pro - 3.14 Cooling  
[e\_cool\_pp6.exam.xml Q\_COOLING\_11]