Exam Report: 3.2.6 Practice Questions

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Time Spent: 6:50

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Overall Performance

Your Score: 14%

Passing Score: 80%

View results by: Objective Analysis Individual Responses

Individual Responses

Question 1: Incorrect

A computer's power supply converts mains AC to low-voltage regulated DC power for the internal components of a computer. You are building a new computer. You are deciding which type of power supply to install.

Which of the following definitions BEST describes a valid type of power supply?

- ~~A dual-rail power supply provides separate rails (PCB traces) used to provide equal wattage to the devices attached to each rail.~~
- A dual-rail power supply provides separate rails (PCB traces) used to balance the power load between multiple circuits, which prevents any one circuit from becoming overloaded.
- A single-rail power supply provides one rail (PCB trace). This provides the best safety for the computer by providing a single point of shutdown in the event of a short circuit.
- A single-rail power supply provides one rail (PCB trace) used to always provide equal wattage to all devices attached to the power supply.

Explanation

A voltage rail refers to a single voltage provided by the power supply unit (PSU). A dual-rail power supply provides separate rails used to balance the power load between multiple circuits, which prevents any one circuit from becoming overloaded. A high-capacity power supply designed to deliver all of its power over a single rail can melt the insulation from the wires and may cause a fire.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_01]

Question 2: Incorrect

You are building a new computer from both new and used parts. The video card is a PCIe video card that requires an 8-pin power connector. However, your power supply doesn't have an 8-pin PCIe power connector. Which solution would be the least expensive option for your system?

- Purchase a new video card that does not require a power connector.
- Use an adapter cable to connect two 4-pin Molex connectors to the 8-pin PCIe connector.
- ~~Connect the 8-pin processor cable to the video card.~~
- Purchase a new power supply with the necessary connector.

Explanation

Use an adapter cable to convert 4-pin Molex connectors to the connectors you require. You can typically purchase adapters for PCIe video, SATA power, or processor power cables. Purchasing a new power supply or video card would work, but would be more expensive than using an adapter.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_02]

Question 3: Incorrect

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

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

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

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_06]

Question 4: Incorrect

Your company relocated you from the United States to their United Kingdom office in London. You brought your personal computer with you and are in the process of setting it up. Your computer was previously configured to receive 115 VAC, but the electricity in London uses 230 VAC.

Which of the following would allow your computer to run on 230 VAC?

- ( ) Toggle the voltage switch on the power supply to the different voltage.
- ( ) Purchase a voltage converter and plug your computer into the converter box.
- (•) ~~Edit the BIOS and modify the voltage input setting.~~
- ( ) Purchase a new power supply that is compatible with 230 VAC.

Explanation

Most power supplies have the capacity to receive either 115 and 230 volts of power just by toggling a switch on the power supply case. You can use this switch when using the power supply in other countries. 115 volts setting is used in the United States. 230 volts is used in Europe and the United Kingdom.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_07]

Question 5: Incorrect

You need to replace the power supply in your home desktop computer.

Which of the following specifications are the most likely to affect your power supply choice? (Select THREE).

- [x]

- [ ] Type and number of connectors
- [ ] Output wattage
- [ ] Output voltage
- [ ] Form factor
- [ ] Input voltage

Explanation

When choosing a power supply:

- Select the power supply form factor that matches the motherboard and case form factor (ATX, Micro-ATX, Mini-ITX, etc.).
- Make sure that the power supply has the correct type and number of power connectors for all of your devices.
- Select a power supply with sufficient watts to power all devices. The higher the watts, the more internal and external devices that can be supported.

Nearly all power supplies can accept between 100 and 240 volts AC input. Use the switch on the back to specify the input power appropriate for the voltage used in that country. All power supplies output +/-5 and +/-12 volts DC power.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_10]

Question 6: Incorrect

You are servicing a client's computer that has been randomly restarting. You decide to test the power supply using a multimeter. You connect the positive lead to the yellow wire on one of the Molex connectors.

Which of the following BEST describes the action you should take based on the multimeter reading shown below?

- [ ] Replace the power supply because it is failing.
- [ ] Continue using the power supply until the voltage on the yellow wire drops to less than 9 volts.
- [ ] Keep using the power supply, but stop using that particular Molex connector.
- [x] ~~Switch the voltage selector on the back of the power supply to 230 volts AC.~~

Explanation

The power supply in this scenario is failing. Any time the voltage on the yellow wire of a Molex connector drops below about 11 volts, the power supply should be replaced.

Switching the power supply to use 230 volts AC will not fix the issue. Low voltage issues aren't contained to a single connector, so even if you stop using that particular Molex connector, the system will still have problems.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_11]

Question 7: Incorrect

An employee submitted a support ticket stating that her computer will not turn on.

Which of the following troubleshooting steps should you take first? (Select TWO).

- [ ] Make sure the surge protector is turned on.
- [ ] Make sure the keyboard and mouse are plugged in.
- [ ] Make sure the power cord is plugged into the wall.
- [x] ~~Open the computer and replace the power supply.~~
- [ ] Use a multimeter to test the power supply.

Explanation

When troubleshooting the power supply, always check the following before opening up the computer:

- Make sure the power cord is plugged into the wall.
- Verify that any surge protectors are plugged in and in the On position.
- Make sure the power supply's switch is in the On position.

Only after you identify that the power supply is the problem should you replace it. The keyboard and mouse being unplugged will not prevent the computer from powering on. Test the power supply using a multimeter only after the obvious potential issues are ruled out.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_13]

Question 8: Incorrect

You are testing the power supply in a PC system by measuring the voltage available on the 4-pin Molex connector. The voltage on the red wire is +5.1 volts. What should you do?

- (•) ~~Disconnect all devices drawing power from the power supply before testing it.~~
- ( ) Nothing. The power supply is working normally.
- ( ) Replace the power supply.
- ( ) Switch the voltage selector on the back from 220 VAC to 110 VAC.

Explanation

The red wire on a Molex connector should provide +5 volts DC, so this power supply is functioning normally.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_14]

Question 9: Incorrect

You are testing the power supply in a PC system by measuring the voltage available on the 4-pin Molex connector. The voltage on the yellow wire is +10.1 volts. What should you do?

- ( ) Replace the power supply.
- (•) ~~Switch the voltage selector on the back from 220 VAC to 110 VAC.~~
- ( ) Disconnect all devices drawing power from the power supply before testing it.

- ◯ Nothing. The power supply is working normally.

Explanation

The yellow wire on a Molex connector should provide +12 volts DC. The fact that this power supply is only supplying 10.1 volts DC indicates that it is failing and should be replaced.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_15]

Question 10: Correct

You have a desktop computer that uses a 250-watt power supply. You recently added a four-disk RAID 10 array to the system, and now it spontaneously shuts down.

Which of the following would MOST likely rectify this issue?

- ◯ Use the switch on the power supply to switch from 115 VAC to 230 VAC.
- ◯ Upgrade to smaller capacity hard drives.
- ◯ Upgrade to a power supply that provides more volts.
- ➡ ◉ Upgrade to a power supply that provides more watts.

Explanation

The number of devices a powers supply can support is directly related to the number of watts the power supply provides. In this situation, the new RAID array, along with all of the other components in the system, is drawing more watts than the power supply can provide. A watt is a rating of the amount of work that the power supply can do.

Volts are a measure of electrical pressure and are not directly related to the number of devices it will support. The voltage is dependent on the wall socket's voltage. The voltage switch on the power supply should match the voltage at the wall outlet. 115 is used in the United States, while 230 is typically used in Europe.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_16]

Question 11: Incorrect

You need to replace the power supply in your home desktop computer.

As you choose the replacement power supply, which of the following specifications are the MOST likely to affect your choice? (Select THREE).

- ➡ ☑ Output wattage
- ☑ ~~Input voltage~~
- ☐ Output frequency
- ☑ ~~Input frequency~~
- ☐ Output voltage
- ➡ ☐ Form factor
- ➡ ☐ Processor connector

Explanation

When choosing a power supply:

- Select the power supply form factor that matches the motherboard and case form factor (AT, ATX, BTX, etc.).
- Make sure that the power supply has the correct power connector for your processor.

Most newer processors require an additional 4-pin connector in addition to the 20-pin connector. Some motherboards combine these connectors into a single 24-pin connector. Select a power supply with sufficient watts to power all devices. The higher the watts, the more internal and external devices can be supported. Nearly all power supplies can accept between 100 and 240 volts 50-60 Hz AC input. Use the switch on the back to specify the input power. All power supplies output +/-5 and +/-12 volts DC power, which have no frequency.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_17]

Question 12: Incorrect

You are trying to troubleshoot a desktop power supply issue using a voltmeter.

Which of the following options are the MOST common voltages produced by the power supply? (Select TWO).

- [ ] +/- 110 v
- [ ] +/- 12 v
- [ ] +/- 10 v
- [x] +/- 5 v
- [x] ~~+/- 120 v~~

Explanation

The computer power supply provides +/- 5 v and +/-12 v.

Many power supplies also provide +/- 3.3 volts, although 3.3 volts is not used in many newer components and is optional in recent specifications. Most power supplies accept AC 110/115 or 220/230 volts as input.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_18]

Question 13: Correct

You have a laptop with a dual-core processor that has the following characteristics:

- 1024 KB L2 cache
- 125 Watts
- 45nm process size

You want to upgrade the processor to one that uses less power.

Which of the following characteristics would MOST likely identify a processor that uses less power?

- ( ) 32nm process size
- (•) 90 Watts
- ( ) 512 KB L2 cache
- ( ) Single-core processor

Explanation

Power consumption for a processor is measured in Watts. A 90-Watt processor consumes less power than a 125-Watt processor. It is possible that a single-core processor, one with less cache, or one with a smaller process size will consume less power. However, only the Watt rating will tell you for sure how much power the processor requires.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_19]

Question 14: Incorrect

You have a desktop computer that you want to upgrade. You add several internal components and external components. You realize that you need to ensure that your power supply can support all of the new devices.

Which of the following power supply ratings BEST describes the rating used to determine this?

- Resistance rating
- DC voltage rating
- ~~AC voltage rating~~
- Watt rating

Explanation

The number of devices that can be supported by a power supply is directly related to the number of watts the power supply is rated for. A power supply's Watt rating determines its maximum power output.

AC voltage and DC voltage is a measure of electrical pressure and is not directly related to the number of devices it will support. The voltage is dependent on the voltage of the wall socket. The voltage switch on the power supply should match the voltage at the wall outlet. 115 is used in the United States, while 230 is typically used in Europe. Resistance is a measure of how much an electrical device reduces the electric current flow through it.

References

TestOut PC Pro - 3.2 Power Supplies
[e_ps_pp6.exam.xml Q_PWRSUPPLY_20]