

Skilled Trades

ASE-xEV-Level-1

Automotive Service Excellence: xEV Electrical Safety Awareness Certification (Level 1)

Questions And Answers PDF Format:

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Version = Product



Latest Version: 6.0

Question: 1

Where should the high-voltage battery disconnects be while working on the EV?

- A. With your tools
- B. In the vehicle
- C. In a secured container
- D. It doesn't matter

Answer: C

Explanation:

When removing the high-voltage battery disconnects, they should be placed in a secured container. This action prevents injury and electrical shock.

You don't want the battery disconnects to remain in the vehicle or with your tools. Your employer should have an appropriate location to store them.

Question: 2

How should the technician verify the color coding of high-voltage components?

- A. Asking employer
- B. Online schematics
- C. ASE study guide
- D. Through the Original Vehicle Manufacturer (OEM)

Answer: D

Explanation:

All color coding must be verified with the Original Vehicle Manufacturer (OEM) prior to starting any repair work or maintenance. High-voltage cables should be orange unless they are within electrical protection barriers.

Technicians should never assume that they know which cables are high-voltage until comparing the system against documentation from the manufacturer.

Question: 3

What is the term used to describe a mechanical device that physically prevents the release or transmission of energy?

- A. Power off device

- B. Energy isolating device
- C. Roadblock device
- D. Electrical stop device

Answer: B

Explanation:

An energy isolating device is a mechanical component that physically prevents energy from being released or transmitted. The type of device used depends on the environment and circumstances. Examples of this device include a manually-operated electrical circuit breaker or a disconnect switch. It could also be a line valve or a block.

Question: 4

Why is it important to have high-voltage electrical safety awareness?

- A. To maintain EVs
- B. To repair EVs
- C. To identify hazards and reduce risk
- D. To repair electrical power lines

Answer: B

Explanation:

By learning about high-voltage electrical safety awareness, you can identify hazards and reduce risk for yourself and those around you. These are important qualifications for anyone working around EVs. These skills won't necessarily help you maintain or repair an EV, but they do give you a foundation to move further with training.

Question: 5

Working on or near high-voltage electrical equipment and systems can present hazards, such as which of the following?

- A. Flooding
- B. Power outage
- C. Gas leak
- D. Arc flashes and blasts

Answer: D

Explanation:

When working around high-voltage electrical systems, arc flashes and blasts are a safety concern. When proper safety precautions aren't followed, high voltage can be dangerous.

In addition to arc flash and blast, you must also be concerned about electrical shock. These situations can lead to injury or death.

Question: 6

Who needs medical attention after an electrical shock?

- A. Everyone
- B. If they have trouble breathing
- C. A person with burn mark on the skin
- D. Only if confusion exists

Answer: A

Explanation:

Electrical shock may leave a burn mark on the skin, but not always. In some cases, there can be no symptoms of lingering problems, even if there's damage done to the internal organs. Electrical shock can also lead to cardiac arrest or death.

It's always recommended to take the shocked person to a healthcare provider.

Question: 7

What cables need to be covered in orange to warn of high voltage?

- A. Any over 20V AC or 50 V DC
- B. Any over 10V AC or 40 V DC
- C. Any over 30V AC or 60 V DC
- D. Any over 15V AC or 45 V DC

Answer: C

Explanation:

US FMVSS 305 S5.4.1.2 (Federal Motor Vehicle Safety Standards) specify that high-voltage cables with sources over 30V AC or 60 V DC must be wrapped or insulated in orange to alert of the danger. This ruling does not apply to any cables that are located within the electrical protection barriers.

Cables not marked in orange can be assumed to be low-voltage, although it's always safest to read the service manual before touching any wires in the EV.

Question: 8

When getting help for someone subjected to high voltage, how do you best protect yourself?

- A. Reach out to the person with an object to see if they have electrical current running through them
- B. Don't touch the person
- C. Turn off the vehicle if it is running

D. Move the person away from the power source

Answer: B

Explanation:

If someone is being subjected to a high-voltage shock, you should never touch them. Attempting to move the person from the power source or touch them with an object could result in you being shocked. Additionally, you shouldn't touch the vehicle to turn it off until first responders have accessed the situation.

Question: 9

What technician is qualified to repair and maintain non-high-voltage systems on an EV?

- A. Level 1
- B. Level 2
- C. Level 3
- D. All three

Answer: D

Explanation:

The Level 1 technician can work on the EV, with the non-high-voltage systems. They are also qualified to handle the non-high-voltage components of the vehicle.

Level 2 and Level 3 technicians are trained to work with the high-voltage systems. These should not be touched by the Level 1 technician.

Question: 10

What is the condition called when the heart stops beating?

- A. Insomnia
- B. Cardiac arrest
- C. Arrhythmia
- D. Heart attack

Answer: B

Explanation:

Cardiac arrest is the term used to describe the sudden failure of the heart to beat. It's considered an electrical problem because the heart is no longer receiving the signal to beat.

A heart attack is when the blood flow to the heart is blocked. In many cases, the victim of a heart attack remains conscious during the event, but could enter into cardiac arrest as a result of the blockage. An arrhythmia is when the heart beat is irregular.

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