

Construction Wiring 2 Practice Test (Sample)

Study Guide



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SAMPLE

Questions

- 1. What safety measures should be used when installing electrical fixtures?**
 - A. Wear gloves only**
 - B. Ensure power is off and follow manufacturer instructions**
 - C. Install without brackets**
 - D. Use metal tools exclusively**
- 2. What precautions should be taken when working with live electrical circuits?**
 - A. Use uninsulated tools and wear rubber gloves**
 - B. Always wear appropriate PPE and follow lockout/tagout procedures**
 - C. Work without supervision for efficiency**
 - D. Disconnect all devices before starting work**
- 3. What is the purpose of a disconnect switch?**
 - A. To regulate power flow to different circuits**
 - B. To allow safe disconnection of electrical equipment**
 - C. To measure the current in a circuit**
 - D. To convert AC power to DC power**
- 4. Phase conductors that are 6 AWG and smaller are permitted to be re-identified as equipment ground conductors using which method?**
 - A. Yellow tape**
 - B. Red paint**
 - C. Green paint or tape**
 - D. White stripes**
- 5. What defines LED bulbs compared to incandescent bulbs?**
 - A. They are less energy-efficient and shorter-lived**
 - B. They have a longer lifespan and lower heat output**
 - C. They produce more ultraviolet light**
 - D. They require a higher voltage to operate**

- 6. The ampacity of Type NM cable shall be in accordance with which conductor temperature rating?**
- A. 75 C (167 F)**
 - B. 60 C (140 F)**
 - C. 90 C (194 F)**
 - D. 100 C (212 F)**
- 7. What is a key characteristic of a GFCI outlet?**
- A. It can control light fixtures**
 - B. It interrupts the circuit if a ground fault is detected**
 - C. It only works in wet locations**
 - D. It measures electrical power**
- 8. What does a circuit tester do?**
- A. Checks for insulation resistance**
 - B. Measures resistance in circuits**
 - C. Check for voltage and continuity**
 - D. Tests the temperature of wires**
- 9. Which one of these is a common application for GFCI protection?**
- A. Wiring for ceiling lights**
 - B. Receptacles for outdoor tools**
 - C. Grounded extension cords used indoors**
 - D. Receptacles in laundry rooms**
- 10. Liquidtight flexible nonmetallic conduit is subject to which of the following limitations?**
- A. Cannot be used in direct sunlight**
 - B. Can become brittle in extremely cold temperatures**
 - C. Both of these**
 - D. None of these**

Answers

SAMPLE

- 1. B**
- 2. B**
- 3. B**
- 4. C**
- 5. B**
- 6. B**
- 7. B**
- 8. C**
- 9. B**
- 10. C**

SAMPLE

Explanations

SAMPLE

1. What safety measures should be used when installing electrical fixtures?

- A. Wear gloves only**
- B. Ensure power is off and follow manufacturer instructions**
- C. Install without brackets**
- D. Use metal tools exclusively**

Ensuring the power is off and following manufacturer instructions is a crucial safety measure when installing electrical fixtures. This step helps prevent electrical shock, which can occur if a person works on a live circuit. By de-energizing the system, the installer eliminates the risk of inadvertently touching live wires and being electrocuted. Additionally, following manufacturer instructions is vital because different fixtures may have specific installation requirements that, if ignored, could lead to improper installation, malfunction, or even hazards such as fires or injuries. This guideline encapsulates best practices in electrical safety, combining both a proactive approach (ensuring power is off) and adherence to exact specifications provided by the manufacturer, which is essential for safe and effective electrical work. Other options, such as wearing gloves only, neglect the importance of de-energizing the circuit and proper instructions, while installing without brackets and using metal tools exclusively overlook fundamental aspects of proper installation and material choices, potentially leading to safety risks or equipment failure.

2. What precautions should be taken when working with live electrical circuits?

- A. Use uninsulated tools and wear rubber gloves**
- B. Always wear appropriate PPE and follow lockout/tagout procedures**
- C. Work without supervision for efficiency**
- D. Disconnect all devices before starting work**

When working with live electrical circuits, it is essential to always wear appropriate personal protective equipment (PPE) and follow lockout/tagout procedures. Proper PPE may include insulated gloves, safety glasses, and flame-resistant clothing, which help protect the worker from electrical hazards such as shocks, sparks, or arc flashes. Lockout/tagout procedures are critical because they ensure that electrical circuits are properly shut off and cannot inadvertently be turned back on while work is being conducted. This practice not only safeguards the worker but also promotes a culture of safety within the workplace. By following these procedures, the risk of accidental electrocution or other electrical injuries is significantly reduced. Using uninsulated tools or working without supervision does not provide adequate protection against the dangers associated with live circuits. Disconnecting devices, while a precautionary measure, is not always feasible when work must be performed live, thus the focus on proper PPE and lockout/tagout becomes paramount in ensuring worker safety.

3. What is the purpose of a disconnect switch?

- A. To regulate power flow to different circuits**
- B. To allow safe disconnection of electrical equipment**
- C. To measure the current in a circuit**
- D. To convert AC power to DC power**

The purpose of a disconnect switch is to allow safe disconnection of electrical equipment. This device is critical for ensuring the safety of maintenance personnel and the integrity of electrical systems. By providing a means to completely isolate a piece of equipment from the power source, a disconnect switch enables safe troubleshooting, repair, or maintenance without the risk of electrical shock or arc flash. When electrical systems require servicing, it is essential to ensure that no power is present. The disconnect switch makes this possible by providing a clear method to cut off power. This is especially important in environments where workers may be working near high voltage or sensitive electrical equipment. The switch can typically be locked in the off position to further protect personnel from accidental re-energization. Other functions related to electrical systems, such as regulating power flow to different circuits or measuring current, are not within the scope of what a disconnect switch is designed to accomplish, and converting AC power to DC power pertains to a different set of equipment entirely, such as rectifiers. Therefore, while those options describe important aspects of electrical systems, they do not accurately define the specific purpose of a disconnect switch.

4. Phase conductors that are 6 AWG and smaller are permitted to be re-identified as equipment ground conductors using which method?

- A. Yellow tape**
- B. Red paint**
- C. Green paint or tape**
- D. White stripes**

Phase conductors that are 6 AWG and smaller can be re-identified as equipment ground conductors using green paint or tape. This method is in accordance with the National Electrical Code (NEC), which specifies that equipment grounding conductors must be identified by a green color. The use of green paint or green tape effectively communicates to anyone handling the wiring that it is intended for grounding purposes, ensuring safety and compliance with electrical codes. Using the appropriate color for identification is crucial in preventing electrical accidents and ensuring that individuals can easily recognize the function of the conductors. Green is universally accepted for grounding conductors, making it clear that these conductors are meant to protect people and equipment by providing a safe path for fault currents. This clear identification helps maintain safety standards in electrical installations.

5. What defines LED bulbs compared to incandescent bulbs?

- A. They are less energy-efficient and shorter-lived**
- B. They have a longer lifespan and lower heat output**
- C. They produce more ultraviolet light**
- D. They require a higher voltage to operate**

LED bulbs are highly regarded for their longer lifespan and lower heat output compared to incandescent bulbs. One of the most significant advantages of LED technology is its energy efficiency; LED bulbs can last up to 25,000 hours or more, significantly outlasting the typical 1,000-hour lifespan of incandescent bulbs. This longevity means that, over time, fewer replacements are needed, contributing to reduced waste and lower costs for users. Additionally, LED bulbs operate at a cooler temperature than incandescent bulbs, which convert a substantial portion of electricity into heat rather than light. This lower heat output not only enhances safety by minimizing the risk of burns or fire hazards but also contributes to energy savings since less energy is wasted as heat. In contrast, options like the first choice incorrectly state that LED bulbs are less energy-efficient and shorter-lived, misrepresenting their primary advantages. The third choice about producing more ultraviolet light is inaccurate, as LED bulbs typically emit less UV radiation than incandescent bulbs. Lastly, the fourth choice regarding a higher voltage requirement does not apply broadly, as LED bulbs can operate effectively on both low and high voltages, depending on their design and intended use.

6. The ampacity of Type NM cable shall be in accordance with which conductor temperature rating?

- A. 75 C (167 F)**
- B. 60 C (140 F)**
- C. 90 C (194 F)**
- D. 100 C (212 F)**

In the context of ampacity for Type NM (non-metallic sheath) cable, the correct conductor temperature rating is 60 C (140 F). This rating is significant because it establishes the maximum temperature that the conductors can safely handle, directly impacting their overall capacity to carry electrical current without overheating. Type NM cable is typically used in residential and commercial buildings, and its design includes a combination of insulation and conductors that are rated for these temperature limits. Using this rating ensures safe operation under expected loads and contributes to the overall safety and reliability of electrical installations. Using a higher temperature rating, such as 75 C or 90 C, would not be appropriate for Type NM cable, as the cable's materials and construction are not designed to handle those higher thermal limits. Therefore, referencing the 60 C rating is essential for determining the proper ampacity and ensuring compliance with electrical codes.

7. What is a key characteristic of a GFCI outlet?

- A. It can control light fixtures
- B. It interrupts the circuit if a ground fault is detected**
- C. It only works in wet locations
- D. It measures electrical power

A key characteristic of a Ground Fault Circuit Interrupter (GFCI) outlet is that it interrupts the circuit when it detects a ground fault. This is an important safety feature designed to prevent electrical shocks. A ground fault occurs when electricity finds an unintended path to the ground, which can happen if a person comes into contact with electrical current. By interrupting the circuit quickly—usually in milliseconds—a GFCI outlet minimizes the risk of severe injury or death from electric shock. The other options do not accurately describe the primary function of a GFCI outlet. While GFCI outlets are typically placed in wet locations like bathrooms and kitchens for enhanced safety, they can also be used in dry areas, making the option that claims they only work in wet locations misleading. Additionally, controlling light fixtures is not a specific function of GFCI outlets since they do not provide dimming or switching capabilities. Finally, measuring electrical power is not a function of a GFCI outlet; it is primarily focused on protecting people from ground faults rather than monitoring energy usage.

8. What does a circuit tester do?

- A. Checks for insulation resistance
- B. Measures resistance in circuits
- C. Check for voltage and continuity**
- D. Tests the temperature of wires

A circuit tester is a tool used to ensure that electrical circuits are functioning properly. Its primary function includes checking for voltage presence and ensuring continuity, which means it can determine if there is a complete path for current to flow. This is essential for troubleshooting electrical systems, as it allows electricians to verify whether power is reaching a particular point in the circuit and if there are any breaks in the connection. While measuring resistance in circuits and checking for insulation resistance are important electrical testing tasks, these are typically not the primary functions of a basic circuit tester. A circuit tester is not designed to gauge the temperature of wires, which involves entirely different equipment such as thermal imaging cameras or infrared thermometers. The ability to check voltage and continuity makes the circuit tester a fundamental tool for anyone working with electricity, ensuring safety and functionality in electrical installations and repairs.

9. Which one of these is a common application for GFCI protection?

- A. Wiring for ceiling lights**
- B. Receptacles for outdoor tools**
- C. Grounded extension cords used indoors**
- D. Receptacles in laundry rooms**

GFCI (Ground Fault Circuit Interrupter) protection is essential in areas where electrical devices may come into contact with water, as it helps prevent electric shock by cutting off the current when it detects an imbalance between incoming and outgoing currents. The common application of GFCI protection for receptacles used with outdoor tools is crucial because these tools often operate in wet or damp conditions, such as gardens or yards where rainwater may be present. Using GFCI protection for outdoor tools enhances safety by reducing the risk of electrocution while using equipment like lawnmowers, trimmers, or other power tools outside. It ensures that if a fault occurs, the power is interrupted almost instantly, thereby protecting the user from serious injury. While receptacles in laundry rooms and grounded extension cords used indoors may also be areas where GFCI protection is advisable, outdoor tools specifically face a higher risk of water exposure, making them a prime application for GFCI technology. Wiring for ceiling lights, on the other hand, is less likely to require GFCI protection unless the lights are installed in a location prone to moisture, rendering them a less common application for GFCIs compared to outdoor tools.

10. Liquidtight flexible nonmetallic conduit is subject to which of the following limitations?

- A. Cannot be used in direct sunlight**
- B. Can become brittle in extremely cold temperatures**
- C. Both of these**
- D. None of these**

Liquidtight flexible nonmetallic conduit (LFNC) is designed for a variety of applications, but it does have certain limitations that should be considered during installation and use. One significant limitation is its performance in direct sunlight. Exposure to ultraviolet (UV) rays can degrade the material over time, leading to brittleness and potential failure of the conduit. This means it is generally advisable to avoid using LFNC in applications where it will be directly exposed to sunlight for prolonged periods unless it is specifically rated for UV exposure. Additionally, LFNC can also become brittle at extremely cold temperatures. The material used in LFNC may lose its flexibility and become rigid, which can lead to cracking or breaking under mechanical stress in cold environments. Therefore, both limitations—vulnerability to UV light and brittleness in low temperatures—are critical considerations when selecting and installing liquidtight flexible nonmetallic conduit. Recognizing these limitations ensures that the conduit will function safely and effectively within its intended environment.