Washington Master Specialty Electrician – Limited Energy System (06) Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Table of Contents

Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- **Practice answering questions under realistic conditions,**
- **Improve accuracy and speed,**
- **Review explanations to strengthen weak areas, and**
- **Approach the exam with greater confidence.**

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here’s how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don’t just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There’s no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

1. **An acceptable location for the disconnecting means required for all ungrounded conductors includes which of the following?**

   A. Inside the building

   B. Outside the building

   C. Where the conductor passes through the building

   D. All of the above

2. **Which term describes the required space around electrical equipment with exposed, energized parts?**

   A. Minimum required dimensions for clear work space

   B. Entrance requirement for large equipment

   C. Access direction for energized equipment

   D. Location of conductors in tunnel installations

3. **GFCI protection is required for a branch circuit installed on solidly grounded wye electrical systems between which voltages?**

   A. 150 volts to ground and 600 volts phase-to-phase

   B. 120 volts to ground and 240 volts phase-to-phase

   C. 208 volts to ground and 480 volts phase-to-phase

   D. 0 to 120 volts only

4. **Before applying demand factors, what calculation is typically performed for feeders?**

   A. Total calculated feeder load.

   B. To determine the number of feeders.

   C. To estimate conductor cost.

   D. To evaluate environmental conditions.

5. **Which of the following statements is true regarding equipment supplying an individual dwelling unit in a two-family dwelling?**

   A. It may supply public area lighting circuits

   B. It cannot supply public area lighting circuits

   C. It must be on a dedicated 60 A feeder

   D. It can supply public areas only if on weekends

6. Are overcurrent protection devices required for branch-circuit conductors and equipment?

A. Yes

B. No

C. Only for feeders

D. Only for outdoor circuits

7. Load calculation for household electric clothes dryers uses which basis?

A. Greater of 5000 watts or the nameplate rating

B. Nameplate rating only

C. 5000 watts only

D. Kilovolt-amperes

8. For a 10-foot show window, how many receptacles are required within 18 inches of the top of the window?

A. One 125-volt single-phase, 15- or 20-ampere-rated receptacle

B. Two 125-volt single-phase receptacles

C. Three 125-volt receptacles

D. Four 125-volt receptacles

9. Single feeder supplying two dwelling units uses which load value?

A. Lesser of the two loads

B. Greater of the two loads

C. Sum of the two loads

D. Product of the two loads

10. An enclosure is required to prevent accidental contact with energized parts where there are bare terminals. This applies to which equipment?

A. Transformers, switches, and motor controllers

B. Lighting fixtures

C. Circuit breakers only

D. Ground rods

Answers

1. D
2. A
3. A
4. A
5. B
6. A
7. A
8. A
9. B
10. A

Explanations

1. An acceptable location for the disconnecting means required for all ungrounded conductors includes which of the following?

A. Inside the building

B. Outside the building

C. Where the conductor passes through the building

D. All of the above

The key idea is that a disconnecting means for ungrounded conductors just has to be readily accessible and able to disconnect all the ungrounded conductors feeding the equipment. Because that requirement is about accessibility and the ability to shut off all hot conductors, the physical location can vary. It's acceptable to place the disconnect inside the building, outside the building, or at the point where the conductors pass through the building, as long as you can readily reach it and it can simultaneously disconnect all ungrounded conductors. So any of these locations satisfy the requirement.

2. Which term describes the required space around electrical equipment with exposed, energized parts?

A. Minimum required dimensions for clear work space

B. Entrance requirement for large equipment

C. Access direction for energized equipment

D. Location of conductors in tunnel installations

The essential idea is that there must be a safe, unobstructed area around equipment with exposed, energized parts so a worker can access and service it safely. The term that best describes this is the minimum required dimensions for clear work space, because it specifically identifies the measured space that must be kept clear around the equipment for safe operation and maintenance. Other phrases describe different concepts that don't specify the workspace itself: entrances, directions for accessing energized gear, or where conductors are located in tunnels. They don't convey the idea of a defined, measured safety space around the equipment.

3. GFCI protection is required for a branch circuit installed on solidly grounded wye electrical systems between which voltages?

A. 150 volts to ground and 600 volts phase-to-phase

B. 120 volts to ground and 240 volts phase-to-phase

C. 208 volts to ground and 480 volts phase-to-phase

D. 0 to 120 volts only

GFCI protection for a branch circuit on a solidly grounded wye electrical system is required when the system voltage qualifies as a ground-fault hazard, specifically within a defined voltage window: from 150 volts to ground up to 600 volts phase-to-phase. This range targets three-phase, four-wire systems where line-to-ground voltages are significant enough that a ground fault could create a dangerous shock or fire condition, while also staying within the practical limits where GFCI protection is intended and effective. The idea is that any branch circuit operating in this range should have GFCI protection to quickly trip on an imbalance between live conductors and the neutral/ground return path. Choices that fall below the 150-volt-to-ground lower bound or that don't align with the phase-to-phase maximum (600 V) don't fit the standard requirement for these solidly grounded wye systems.

4. Before applying demand factors, what calculation is typically performed for feeders?

A. Total calculated feeder load.

B. To determine the number of feeders.

C. To estimate conductor cost.

D. To evaluate environmental conditions.

When sizing feeders, you first add up all the connected loads to get the total calculated feeder load. This gives the baseline amount the feeders would carry if every device were on at once. Demand factors are then applied to this baseline to reflect the reality that not all loads peak simultaneously. So the key step before applying demand factors is determining that total calculated feeder load. Other options aren't the immediate calculation before demand factors: the number of feeders is a later design consideration, estimating conductor cost is a cost-based step, and evaluating environmental conditions addresses installation context rather than the load the feeders must carry.

5. Which of the following statements is true regarding equipment supplying an individual dwelling unit in a two-family dwelling?

A. It may supply public area lighting circuits

B. It cannot supply public area lighting circuits

C. It must be on a dedicated 60 A feeder

D. It can supply public areas only if on weekends

The key point is that the equipment feeding an individual dwelling unit in a two-family building is intended to serve only that unit. Public area lighting—hallways, stairwells, lobbies—belongs to the building's common-system and must be supplied from the building's own service equipment or a separate feeder dedicated to the common areas. If the unit's equipment fed the public areas, turning off power to that unit or its disconnect could unintentionally affect the lighting in shared spaces, and it would complicate protection and coordination of circuits. Feeder size isn't fixed to a specific value like 60 A; it's determined by load calculations for the building and its common areas. The idea that public areas would be allowed only on weekends doesn't fit electrical practice at all.

6. Are overcurrent protection devices required for branch-circuit conductors and equipment?

A. Yes

B. No

C. Only for feeders

D. Only for outdoor circuits

Overcurrent protection is required for branch-circuit conductors and the equipment on those circuits. The idea is to limit the amount of current to what the conductors can safely carry, and to shut the circuit off if a fault causes excessive current. This protects both the wiring from overheating and the connected devices from damage. In practice, a protective device (like a circuit breaker or fuse) is placed at the start of the branch circuit and sized to the conductor's ampacity. For example, a circuit with 14 AWG conductors is protected at 15 amperes, while 12 AWG conductors use 20 amperes. This requirement applies to all branch circuits, regardless of whether they feed outlets, lighting, or outdoor equipment. The other options would be incomplete because protection isn't limited only to feeders, nor restricted to outdoor circuits. Hence, the correct understanding is that overcurrent protection devices are required for branch-circuit conductors and the equipment they feed.

7. Load calculation for household electric clothes dryers uses which basis?

A. Greater of 5000 watts or the nameplate rating

B. Nameplate rating only

C. 5000 watts only

D. Kilovolt-amperes

For dwelling load calculations, electric clothes dryers have a minimum load consideration. You use the greater of the dryer's nameplate wattage or 5,000 watts. This means if the nameplate rating is less than 5 kW, you still count 5 kW for the dryer; if the nameplate rating is higher than 5 kW, you use that higher value. The idea is to avoid underestimating the service load by forcing a floor of 5 kW, while not overestimating when the dryer is actually rated higher. Kilovolt-amperes aren't the basis here because these calculations are based on real power (watts) for this appliance.

8. For a 10-foot show window, how many receptacles are required within 18 inches of the top of the window?

A. One 125-volt single-phase, 15- or 20-ampere-rated receptacle

B. Two 125-volt single-phase receptacles

C. Three 125-volt receptacles

D. Four 125-volt receptacles

Display windows must have power outlets accessible for lighting and display equipment. The rule requires a receptacle located within 18 inches of the top of the window, and you need at least one receptacle for every 10 feet of window width. A 10-foot show window therefore requires one receptacle. The standard rating for this outlet is 125 volts, single-phase, and either 15- or 20-ampere. If the window were longer, you'd add another receptacle for each additional 10-foot portion (or fraction thereof).

9. Single feeder supplying two dwelling units uses which load value?

A. Lesser of the two loads

B. Greater of the two loads

C. Sum of the two loads

D. Product of the two loads

When a single feeder serves two dwelling units, the capacity is governed by the larger single-unit demand. The feeder must be able to supply the worst-case load of any one unit, and the other unit's load can be accommodated within that same capacity (often using demand factors or non-simultaneous loading). So you size the feeder for the greater of the two loads to avoid overloading. For example, if one dwelling could draw up to a higher amount than the other, the feeder is sized to meet that higher demand. Summing the two loads would assume both are at full demand simultaneously and is not the basis for this sizing in many multi-unit feeder situations. The lesser load does not set the required capacity, and the product option doesn't apply here.

10. An enclosure is required to prevent accidental contact with energized parts where there are bare terminals. This applies to which equipment?

A. Transformers, switches, and motor controllers

B. Lighting fixtures

C. Circuit breakers only

D. Ground rods

Enclosures protect people from touching live parts by keeping exposed energised terminals out of reach. Transformers, switches, and motor controllers often have accessible bare terminals or conductors that could be touched during installation or servicing, so enclosing them is essential to prevent accidental contact. Lighting fixtures usually have their live parts housed within the fixture, and circuit breakers are already inside protective housings designed for safe touch; ground rods aren't energised parts. Therefore, the requirement applies to transformers, switches, and motor controllers.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://wamasterelectricianlimenergysys.examzify.com

We wish you the very best on your exam journey. You've got this!