A large, stylized globe with a grid of latitude and longitude lines, rendered in a light green and white color scheme. The globe is the central background element for the text.

STUDY GUIDE

*ELECTRICAL CONSTRUCTION
(Sample Pages)*

NOCTI offers study guides for many of our job-ready exams. These guides are intended to give students and teachers an idea of what the testing experience will be like and where to focus their time in preparing for a NOCTI exam.

This booklet contains sample pages from a student study guide and provides additional information about what content is provided in these guides.

For information on pricing and how to order study guide sets, see our website at www.nocti.org or call our customer service department at 800-334-6283

TABLE OF CONTENTS

	PAGE
How to Use this Study Guide	1
What are NOCTI Tests Like?	3
What's in THIS Test?	6
Study Checklists:	
General Information	8
Safety	9
Meters, Measurements, and Testing	10
Identification of Tools, Materials, and Components	11
National Electric Code	12
Blueprints, Drawings, Diagrams, and Symbols	13
Planning, Layout, and Estimating	14
AC Theory, Conductors, and Magnetic Theory	15
Electronics	16
DC: Basic Electric and Electron Theories	17
Low Voltage Systems	18
Wiring, Circuits and Installation	19
Raceway and Conduit Bending	20
Transformers	21
Motors, Motor Control Circuits, and PLCs	22
Lighting	23
Basic Computer Skills	24
The Performance Test	25
Sample Questions and Answer Key	26
Where Can I Get More Information?	29

HOW TO USE THIS STUDY GUIDE

This guide is intended to help you prepare to take the NOCTI Electrical Construction Assessment.



The information provided in this guide is divided into 5 sections:

Information about NOCTI's general testing process. If you have never taken a NOCTI test, this will give you some idea of what to expect the testing session to be like.

Information on the major content areas of the test. Here you will find information on the major topic areas that are covered on the test, how much of the written test measures each topic area, and what you'll do in the performance assessment. This will give you an idea of what major areas are stressed in the test.

Study checklists for each topic. Here you'll find a study checklist for each major topic area on the written test and for all the jobs of the performance test. These will give you information about what's on the test and help you to focus your studying.

Sample items. Here you will find 26 test items that are similar to the types of items you will find on the written test. The items are **NOT** the same ones that appear on the test, but do cover some of the same topic areas, and are written in the same style.

A list of other resources. Here you will find a list of additional resources that you may find useful.

You also have access to online sample items! When your school purchased these study guides, they also got access to a set of items that you can use to practice online. These are the same sample items as are in this book but will give you an idea of what the online test will be like. Ask your teacher for more information!

Below are some suggestions to help you get the most out of this study guide:

Feel free to write in this guide and use this as an active study tool!



Pay particular attention to the Study Checklists--use them as a guide to help you study:

- ✓ Focus your studying on the duties and sub-topics listed
- ✓ Record where you feel weak in the "Things I Need to Focus On" section, so you can focus on those areas, or ask your teacher for help
- ✓ Each time you review the material for that duty, put the date at the top so you know how long it's been since you've studied that material
- ✓ As you feel you have mastered a topic, check it off (but be sure to review it briefly before the test)
- ✓ Use the space after each subtopic to write down where you found the information (such as what pages in your textbook), so it's easy to review later

Use the sample items in the back as another way to prepare:

- ✓ When you check your answers against the Answer Key take note of any that you missed. Refer back to the duty they're linked to and see what else you need to focus on
- ✓ For any sample items that you missed and don't understand why, try to look up the information in your textbook, or ask your teacher for help



As your NOCTI test approaches, review these checklists and sample items often to help make sure you're prepared!

Sample Pages from a NOCTI Student Study Guide

WHAT'S IN THIS TEST?

NOCTI's Electrical Construction assessment covers 17 major work duties (topic areas). In the written assessment, these 17 duties are tested with 185 multiple choice items. The duties don't all have the same number of questions, though. The table below lists the major duties and how much of the test covers each one.

Written Assessment Breakdown

Duty	Percent of Test
General Information	2%
Safety	6%
Meters, Measurements, and Testing	10%
Identification of Tools, Materials, and Components	8%
National Electric Code	18%
Blueprints, Drawings, Diagrams, and Symbols	5%
Planning, Layout, and Estimating	4%
AC Theory, Conductors, and Magnetic Theory	7%
Electronics	2%
DC: Basic Electric and Electron Theories	10%
Low Voltage Systems	2%
Wiring, Circuits and Installation	7%
Raceway and Conduit Bending	4%
Transformers	4%
Motors, Motor Control Circuits, and PLCs	6%
Lighting	2%
Basic Computer Skills	3%

This section also contains: a breakdown and description of the jobs on the performance test

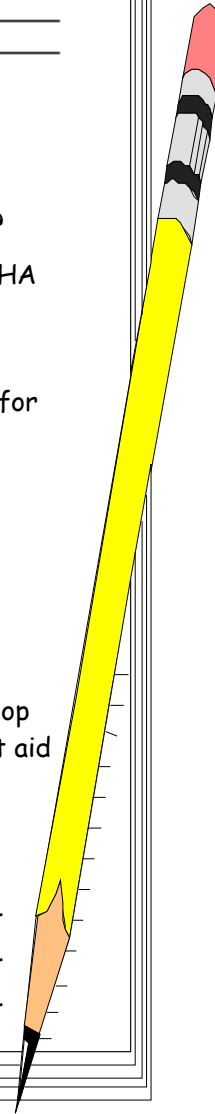
Duty 2: Safety Study Checklist

Dates
Reviewed:

Do you know:

- _____ How to use appropriate personal protective equipment (e.g., safety glasses)?
- _____ How to safely use hand and power tools?
- _____ How to correctly and safely lift heavy objects?
- _____ How to use ladders safely and according to OSHA rules?
- _____ How to safely work on live circuits (e.g., GFCI protection, grounding procedures, OSHA rules for lockout/tagout)?
- _____ How to rescue a victim from a live electrical conductor?
- _____ What fire extinguishers are appropriate for different types of fires (e.g., combustibles, flammables)?
- _____ How to interpret color codes in an electrical shop (e.g., colors for fire protection equipment, first aid equipment)?

Things I Need to Focus On:



This section contains: study checklists for every subject area included on the written exam and every job on the performance test, to help students better focus their study efforts.

Sample Pages from a NOCTI Student Study Guide

SAMPLE QUESTIONS

Below are some sample questions to help give you an idea of the types of questions you will see on the written assessment. These exact questions will **NOT** appear on the test, and how well you do on these questions is not necessarily a sign of how you will do on the test. However, they **WILL** help give you an idea of what types of questions are asked on the test and how they are generally written. For each item below, circle the answer you think is correct. Then check your work with the answer key at the back!

1. The government organization whose purpose is to set and enforce worksite safety and health standards is
 - A. OPM
 - B. EEOC
 - C. NLRB
 - D. OSHA
2. The proper angle for setting up a ladder is to place its base a/an _____ of the working length of the ladder from the wall or other vertical surface.
 - A. sixteenth
 - B. eighth
 - C. quarter
 - D. third
3. A ____ fire extinguisher should be used on an electrical fire.
 - A. Class A
 - B. Class B
 - C. Class C
 - D. Class D
4. The peak-to-peak value of an alternating current signal that measures $240V_{RMS}$ is
 - A. 169.7 volts
 - B. 339.4 volts
 - C. 678.8 volts
 - D. 852.4 volts

Each study guide contains: about 25 sample items and the answer key for those items. These are available in the guides AND online to give students a chance to practice with the online system.

Study Guides also contain a description of what to expect (rules, process, etc.) when taking a NOCTI test, and suggestions for additional resources students may want to check out when preparing for the test.

NOCTI study guide sets also come with a Teacher Companion Guide!

The Teacher Companion Guide includes all of the information in the student study guide **PLUS** additional resources for teachers, such as:

- Tips for actively using the study guides and incorporating them into classroom instruction
- Tips for incorporating the online items into instruction
- Suggestions for helping the students prepare for the test, including:
 - Use of effective study skills
 - Reviewing material before the test
 - Test taking skills
 - Strategies for dealing with test anxiety
- Information about which areas of the test students typically struggle with
- Explanations for each of the sample items, including why the correct answer is correct and what about the incorrect answers makes them incorrect
- Detailed instruction on how to access the sample items online

Study Guide Package Pricing

A Study Guide Package Includes:

- One Teacher Companion Guide
- Ten Student Study Guides
- Access to Ten Online Sample/
Practice Tests

PRICE \$35.00 (plus shipping)

Additional Student Study Guides and online
sample/practice test codes in sets of FIVE

PRICE \$10.00/set (plus shipping)

How to Order Study Guide Packages:

Contact the NOCTI Site Coordinator at your school. He/she can access the online order system in the Client Services Center to place the order.

Questions?

800.334.6283 Customer Service
nocti@nocti.org



500 North Bronson Avenue
Big Rapids, MI 49307
800.334.6283
www.nocti.org