

Electrical Theory Outline of Training

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Section 1: Introduction of instructor and training session

Introduction of Instructor and qualifications/ welcome the group

Make sure everyone has signed the training roster for the session

a. Have everyone introduce themselves in the room to the group and tell of their job or where they went or are going to school if they want.

b. Ice breaker: Explain a time you use electrical theory in your job.

Purpose of this training; It is our intention that we present to you information about electrical hazards in a way that you understand the level of risk and danger there is when working with and around electrical equipment. It is our belief when you understand electrical theory you will be able to better judge an electrical hazard and identify a situation that can be remedied before it becomes a hazard to work on and around. We want you to be able to understand and describe the dangers of electricity and identify different types of electrical hazards. Everyone has the right to go home safe and live your life.

Section 2: Short pretest: offer calculators if trainees do not have one

Section 3 : Introduction To OSHA

- a. The Occupational Safety and health Act of 1970 states” to assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health

Whistle blower act; Always report a safety concern of any kind to your immediate supervisor and work with your place of employment to better the safety environment for all employees and yourself. Osha does have whistle blower rights complaint procedures if safety situation is not managed. See OSHA.gov whistle blower

https://www.osha.gov/OshDoc/data_General_Facts/whistleblower_rights.pdf

We have a whistleblower fact sheet for you to take with you if you want at the end of our session

Section 4: Power point presentation: Electrical Theory

Section 5: Theory of OHM's Law and why it is important to know theory when dealing with electrical safety issues. Formulas and calculations practice.

Section 6: Posttest give plenty of time to complete test

Section 7: Wrap up; Go over post-test and answer any questions about training session, give session evaluations to be filled out before exiting.

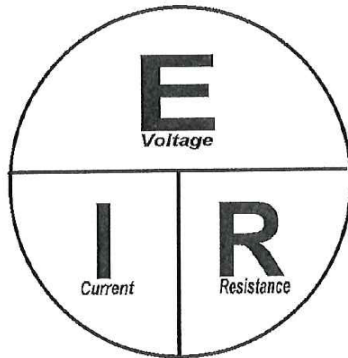
Offer electrical safety handouts for those who will take them includes **and OSHA FACTSHEET Your Rights as a Whistleblower**

Our wish is for you to work safe, recognize hazards and tell immediate supervisors at work about hazards and take control of your own personal safety at all times whether at work or home.

Basic Electrical Theory Worksheet Handout

Name _____ Date _____ Class number _____

Ohm's Law Worksheet



An electrical circuit has a voltage of 50 V and a resistance of 5 Ω . What is the value of current?

- a. 10 A
- b. 45 A
- c. 55 A
- d. 250 A

An electric motor is running on 120 V. The current is measured to be 2 A. How many ohms of resistance is the motor?

- a. 60
- b. 118
- c. 122
- d. 240

An electric circuit has a resistance of 20 Ω . The current is measured to be 6 A. How many volts are applied to the circuit?

- a. 3 1/3
- b. 14
- c. 26
- d. 120

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Basic Electrical Theory Pretest/Post-test

Instructor:

Class # _____

NAME _____ Date _____

1. An electrical circuit consists of _____.
 - a. power source
 - b. conductors
 - c. load
 - d. all the above

2. Ohm's Law demonstrates the relationship between circuit _____.
 - a. intensity
 - b. EMF
 - c. resistance
 - d. all of these

3. 120V supplies a load that has a resistance of 225 ohms. What is the current flow through the circuit?
 - a. .60 A
 - b. .53 A
 - c. 1.75 A
 - d. none of these

4. 120v supplies a load that has a current flow of 10 Amps. What is the resistance of the circuit?
 - a. 10 ohms
 - b. 13 ohms
 - c. 11 ohms
 - d. 12 ohms

5. 10 ohm load has a current flow of 12 Amps. What is the voltage of the circuit?
 - a. 100 volts
 - b. 110 volts
 - c. 120 volts
 - d. 125 volts

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Basic Electrical Theory Pretest/Post-test Answer Key

Instructor:

Class # _____

NAME _____ Date _____

1. An electrical circuit consists of _____.
 - a. power source
 - b. conductors
 - c. load
 - d. all the above (answer)

2. Ohm's Law demonstrates the relationship between circuit _____.
 - a. intensity
 - b. EMF
 - c. resistance
 - d. all of these (answer)

3. 120V supplies a load that has a resistance of 225 ohms. What is the current flow through the circuit?
 - a. .60 A
 - b. .53 A (answer)
 - c. 1.75 A
 - d. none of these

4. 120v supplies a load that has a current flow of 10 Amps. What is the resistance of the circuit?
 - a. 10 ohms
 - b. 13 ohms
 - c. 11 ohms
 - d. 12 ohms (answer)

5. 10 ohm load has a current flow of 12 Amps. What is the voltage of the circuit?
 - a. 100 volts
 - b. 110 volts
 - c. 120 volts (answer)
 - d. 125 volts

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