Mike Holt's

MASTER/CONTRACTOR PRACTICE EXAM

Suitable for all electrical exams based on the NEC® such as:
AMP, ICC, Local/State Examining Boards, Pearson VUE, Prometric, Prov, PSI

Theory • Code • Calculations **Based on the 2017 NEC®**

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PART 1

ELECTRICAL THEORY EXAM (4 HOURS)

The questions for this exam are extracted from *Mike Holt's Illustrated Guide to Basic Electrical Theory* textbook.

CHAPTER 1— ELECTRICAL FUNDAMENTALS

UNIT 1—MATTER

1. Providing a path to the earth often helps reduce electrostatic charge.

   (a) True
   (b) False

2. Lightning frequently terminates to a point of elevation and strikes nonmetallic as well as metallic objects with the same frequency.

   (a) True
   (b) False

3. The termination of the lightning stroke is unlikely to ignite combustible materials.

   (a) True
   (b) False

4. Lightning protection is intended to protect the building itself, as well as the electrical equipment on or inside the structure.

   (a) True
   (b) False

UNIT 3—MAGNETISM

5. Nonmagnetic metals are ferrous, meaning they do not contain any iron, and cannot be magnetized.

   (a) True
   (b) False

6. Magnetic lines of force can cross each other and they are called flux lines.

   (a) True
   (b) False

UNIT 4—ELECTRICITY

7. It is not the force of the magnetic field through a conductor that produces electricity; it is the relative motion of the field to the electrons within the conductor that produces the movement of electrons.

   (a) True
   (b) False

8. People become injured and death occurs when voltage pushes electrons through the human body causing the heart to go into ventricular fibrillation.

   (a) True
   (b) False

9. The severity of an electric shock is dependent on the current flowing through the body, which is impacted by circuit voltage and contact resistance.

   (a) True
   (b) False

PART
2

NATIONAL ELECTRICAL CODE EXAM (4 HOURS)

Please use the 2017 *Code* book to answer the following questions. If you need a copy of the *Code* book, visit www.MikeHolt.com/Code or call 888.632.2633

1. The outer sheath of Type MI cable is made of _____.

   (a) aluminum
   (b) alloy steel
   (c) copper
   (d) b or c

2. Where overcurrent protection is provided as part of an industrial machine, the machine shall be marked "_____."

   (a) Overcurrent Protection Provided At Machine Supply Terminals
   (b) This Unit Contains Overcurrent Protection
   (c) Fuses Or Circuit Breaker Enclosed
   (d) Overcurrent Protected

3. Each vented cell of a battery, as it relates to storage batteries, shall be equipped with _____ that prevents destruction of the cell due to ignition of gases within the cell by an external spark or flame.

   (a) pressure relief
   (b) a flame arrester
   (c) fluid level indicators
   (d) none of these

4. Audible and visual signal devices shall be provided on legally required standby systems, where practicable, to indicate _____.

   (a) malfunction of the standby source
   (b) that the standby source is carrying load
   (c) that the battery charger is not functioning
   (d) all of these

5. A conductor used for open wiring on insulators that penetrates a wall, floor, or other framing member shall be carried through a _____.

   (a) separate sleeve or tube
   (b) weatherproof tube
   (c) tube of absorbent material
   (d) grounded metallic tube

6. Flat cable assemblies shall consist of _____ conductors.

   (a) two
   (b) three
   (c) four
   (d) any of these

PART 3

ELECTRICAL CALCULATIONS EXAM (5 HOURS)

Questions 1–51 relate directly to *Mike Holt's Illustrated Guide to Electrical Exam Preparation, based on the 2017 NEC* textbook. Questions 52–65 relate to *Mike Holt's Illustrated Guide to Understanding Basic Motor Controls* textbook.

Visit www.MikeHolt.com/ExamPrep or call 888.632.2633.

CHAPTER 1—ELECTRICAL THEORY

UNITS 1 THROUGH 4—ELECTRICAL THEORY

1. If the output is 160W and the equipment is 88 percent efficient, what are the input amperes if the voltage is 120V?

   (a) 0.75A
   (b) 1.50A
   (c) 2.275A
   (d) 3.25A

2. A transformer winding that is 97 percent efficient produces _____ output for every 1 kW input.

   (a) 970W
   (b) 1,000W
   (c) 1,030W
   (d) 1,300W

CHAPTER 2—*NEC* CALCULATIONS

UNIT 5—RACEWAY AND BOX CALCULATIONS

3. A 200A feeder installed in Schedule 80 rigid nonmetallic conduit has three 3/0 THHN conductors, one 2 THHN conductor, and one 6 THHN conductor. What trade size raceway is required?

   (a) 2
   (b) 2½
   (c) 3
   (d) 3½

4. What trade size rigid metal nipple is required for three 4/0 THHN conductors, one 1/0 THHN conductor, and one 4 THHN conductor?

   (a) 1½
   (b) 2
   (c) 2½
   (d) 3

UNIT 6—CONDUCTOR SIZING AND PROTECTION CALCULATIONS

5. What is the ampacity of four current-carrying 1/0 THHN conductors in a raceway?

   (a) 111A
   (b) 136A
   (c) 153A
   (d) 171A