

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

PART 2

NATIONAL ELECTRICAL CODE EXAM (4 HOURS)



Please use the 2014 Code book to answer the following questions. If you need a copy of the Code book, visit www.MikeHolt.com/14Code or call 888.632.2633

- Wiring methods used in health care locations must comply with the *NEC* Chapter 1 through 4 provisions, except as modified by Article 517.
 - True
 - False
- All 15A and 20A, single-phase, 125V through 250V receptacles located within _____ ft of a fountain edge shall have GFCI protection.
 - 8
 - 10
 - 15
 - 20
- General purpose Type CL2, CM, or CATV cables are permitted within the raised floor area of an information technology equipment room.
 - True
 - False
- Type AC cable installed through, or parallel to, framing members shall be protected against physical damage from penetration by screws or nails.
 - True
 - False
- For a sign, outline lighting system, or skeleton tubing system, the equipment grounding conductor size shall be in accordance with _____, based on the rating of the over-current device protecting the conductors supplying the sign or equipment.
 - 250.66
 - 250.122
 - 310.13
 - 310.16
- When installing PVC conduit underground without concrete cover, there shall be a minimum of _____ in. of cover.
 - 6
 - 12
 - 18
 - 22
- Unused openings other than those intended for the operation of equipment, intended for mounting purposes, or permitted as part of the design for listed equipment shall be _____.
 - filled with cable clamps or connectors only
 - taped over with electrical tape
 - repaired only by welding or brazing in a metal slug
 - closed to afford protection substantially equivalent to the wall of the equipment

PART 3

ELECTRICAL CALCULATIONS EXAM (5 HOURS)

The questions in this part relate directly to *Mike Holt's Illustrated Guide to Electrical Exam Preparation* textbook.



2. The current of Lamp 2 (R_2) is ____ amperes.

- (a) 0.54
- (b) 0.63
- (c) 5.40
- (d) 6.30

CHAPTER 1—ELECTRICAL THEORY

UNITS 1 THROUGH 4— ELECTRICAL THEORY

3. The total power consumed of both circuits combined will be ____ watts.

- (a) 139
- (b) 150
- (c) 278
- (d) 300

Figure 1 applies to Questions 1 through 3.

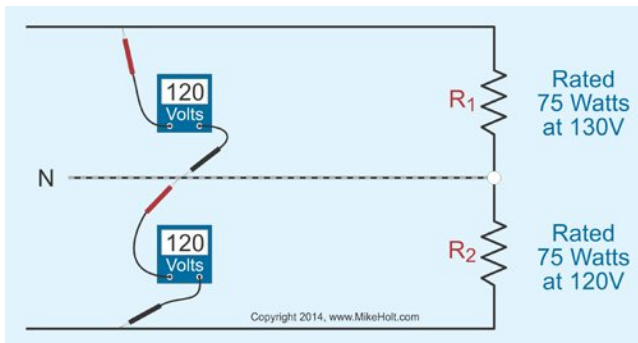


Figure 1

1. The resistance of R_1 is ____.

- (a) 19.20 ohms
- (b) 22.50 ohms
- (c) 192 ohms
- (d) 225 ohms

Figure 2 applies to Questions 4 and 5.

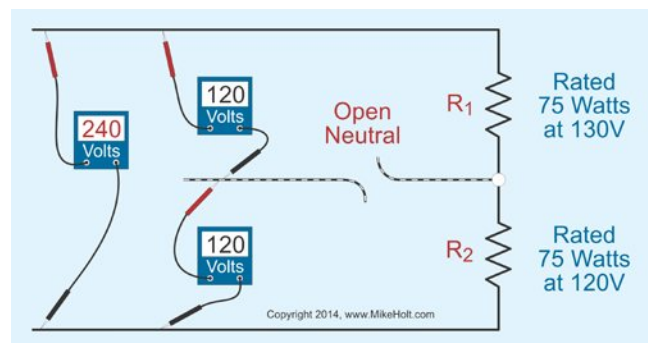


Figure 2

4. If the neutral path is opened as shown in Figure 2, the current of the circuit will be ____ amperes.

- (a) 0.58
- (b) 0.63
- (c) 0.93
- (d) a and b