

# ARTICLE 90

## Introduction to the *National Electrical Code*

### INTRODUCTION TO ARTICLE 90—INTRODUCTION TO THE *NATIONAL ELECTRICAL CODE*

Many *NEC* violations and misunderstandings wouldn't occur if people doing the work simply understood Article 90. For example, many people see *Code* requirements as performance standards. In fact, the *NEC* requirements are bare minimums for safety. This is exactly the stance electrical inspectors, insurance companies, and courts take when making a decision regarding electrical design or installation.

Article 90 opens by saying the *NEC* isn't intended as a design specification or instruction manual. The *National Electrical Code* has one purpose only, and that's the "practical safeguarding of persons and property from hazards arising from the use of electricity." It goes on to indicate that the *Code* isn't intended as a design specification or instruction manual. The necessity to carefully study the *NEC* rules can't be overemphasized, and the role of textbooks such as this one is to help in that undertaking. Understanding where to find the rules in the *Code* that apply to the installation is invaluable. Rules in several different articles often apply to even a simple installation.

Article 90 then describes the scope and arrangement of the *NEC*. The balance of Article 90 provides the reader with information essential to understanding those items you do find in the *Code*.

Typically, electrical work requires you to understand the first four chapters of the *NEC* which apply generally, plus have a working knowledge of the Chapter 9 tables. That knowledge begins with Article 90. Chapters 5, 6, and 7 make up a large portion of the *Code*, but they apply to special occupancies, special equipment, or other special conditions. They build on, modify, or amend the rules in the first four chapters. Chapter 8 contains the requirements for communications systems, such as telephone systems, antenna wiring, CATV, and network-powered broadband systems. Communications systems aren't subject to the general requirements of Chapters 1 through 4, or the special requirements of Chapters 5 through 7, unless there's a specific reference in Chapter 8 to a rule in Chapters 1 through 7.



Please use the 2011 *Code* book to answer the following questions, which are based on the 2011 *NEC*.

### QUESTIONS FOR ARTICLE 90—INTRODUCTION TO THE *NATIONAL ELECTRICAL CODE*

1. The *NEC* is \_\_\_\_\_.
  - (a) intended to be a design manual
  - (b) meant to be used as an instruction guide for untrained persons
  - (c) for the practical safeguarding of persons and property
  - (d) published by the Bureau of Standards
2. Compliance with the provisions of the *NEC* will result in \_\_\_\_\_.
  - (a) good electrical service
  - (b) an efficient electrical system
  - (c) an electrical system essentially free from hazard
  - (d) all of these
3. The *Code* contains provisions considered necessary for safety, which will not necessarily result in \_\_\_\_\_.
  - (a) efficient use
  - (b) convenience
  - (c) good service or future expansion of electrical use
  - (d) all of these

4. Hazards often occur because of \_\_\_\_\_.
  - (a) overloading of wiring systems by methods or usage not in conformity with the *NEC*
  - (b) initial wiring not providing for increases in the use of electricity
  - (c) a and b
  - (d) none of these
5. The *Code* isn't a design specification standard or instruction manual for the untrained and unqualified.
  - (a) True
  - (b) False
6. The following systems shall be installed in accordance with the *NEC* requirements:
  - (a) Signaling.
  - (b) Communications.
  - (c) Electrical conductors, equipment, and raceways.
  - (d) all of these
7. The *NEC* applies to the installation of \_\_\_\_\_.
  - (a) electrical conductors and equipment within or on public and private buildings
  - (b) outside conductors and equipment on the premises
  - (c) optical fiber cables
  - (d) all of these
8. This *Code* covers the installation of \_\_\_\_\_ for public and private premises, including buildings, structures, mobile homes, recreational vehicles, and floating buildings.
  - (a) optical fiber cables
  - (b) electrical equipment
  - (c) raceways
  - (d) all of these
9. The *NEC* does not cover electrical installations in ships, watercraft, railway rolling stock, aircraft, or automotive vehicles.
  - (a) True
  - (b) False
10. The *Code* covers underground mine installations and self-propelled mobile surface mining machinery and its attendant electrical trailing cable.
  - (a) True
  - (b) False
11. Installations of communications equipment that are under the exclusive control of communications utilities, and located outdoors or in building spaces used exclusively for such installations \_\_\_\_\_ covered by the *NEC*.
  - (a) are
  - (b) are sometimes
  - (c) are not
  - (d) may be
12. Electric utilities may include entities that install, operate, and maintain \_\_\_\_\_.
  - (a) communications systems (telephone, CATV, Internet, satellite, or data services)
  - (b) electric supply systems (generation, transmission, or distribution systems)
  - (c) local area network wiring on the premises
  - (d) a or b
13. Utilities may be subject to compliance with codes and standards covering their regulated activities as adopted under governmental law or regulation.
  - (a) True
  - (b) False
14. Utilities may include entities that are designated or recognized by governmental law or regulation by public service/utility commissions.
  - (a) True
  - (b) False

15. The *NEC* does not apply to electric utility-owned wiring and equipment \_\_\_\_\_.  
(a) installed by an electrical contractor  
(b) installed on public property  
(c) consisting of service drops or service laterals  
(d) in a utility office building
16. Chapters 1 through 4 of the *NEC* apply \_\_\_\_\_.  
(a) generally to all electrical installations  
(b) only to special occupancies and conditions  
(c) only to special equipment and material  
(d) all of these
17. Communications wiring such as telephone, antenna, and CATV wiring within a building shall not be required to comply with the installation requirements of Chapters 1 through 7, except where specifically referenced in Chapter 8.  
(a) True  
(b) False
18. The material located in the *NEC* Annexes are part of the requirements of the *Code* and shall be complied with.  
(a) True  
(b) False
19. The authority having jurisdiction shall not be allowed to enforce any requirements of Chapter 7 (Special Conditions) or Chapter 8 (Communications Systems).  
(a) True  
(b) False
20. The \_\_\_\_\_ has the responsibility for deciding on the approval of equipment and materials.  
(a) manufacturer  
(b) authority having jurisdiction  
(c) testing agency  
(d) none of these
21. By special permission, the authority having jurisdiction may waive specific requirements in this *Code* where it is assured that equivalent objectives can be achieved by establishing and maintaining effective safety.  
(a) True  
(b) False
22. The authority having jurisdiction has the responsibility for \_\_\_\_\_.  
(a) making interpretations of rules  
(b) deciding upon the approval of equipment and materials  
(c) waiving specific requirements in the *Code* and permitting alternate methods and material if safety is maintained  
(d) all of these
23. If the *NEC* requires new products that are not yet available at the time a new edition is adopted, the \_\_\_\_\_ may permit the use of the products that comply with the previous edition of the *Code* adopted by that jurisdiction.  
(a) electrical engineer  
(b) master electrician  
(c) authority having jurisdiction  
(d) permit holder
24. In the *NEC*, the words “\_\_\_\_\_” indicate a mandatory requirement.  
(a) shall  
(b) shall not  
(c) shall be permitted  
(d) a or b
25. When the *Code* uses “\_\_\_\_\_,” it means the identified actions are allowed but not required, and they may be options or alternative methods.  
(a) shall  
(b) shall not  
(c) shall be permitted  
(d) a or b

26. Explanatory material, such as references to other standards, references to related sections of the *NEC*, or information related to a *Code* rule, are included in the form of Informational Notes.
- (a) True
  - (b) False
27. Nonmandatory Informative Annexes contained in the back of the *Code* book \_\_\_\_.
- (a) are for information only
  - (b) aren't enforceable as a requirement of the *Code*
  - (c) are enforceable as a requirement of the *Code*
  - (d) a and b
28. Factory-installed \_\_\_\_ wiring of listed equipment need not be inspected at the time of installation of the equipment, except to detect alterations or damage.
- (a) external
  - (b) associated
  - (c) internal
  - (d) all of these
29. Compliance with either the metric or the inch-pound unit of measurement system shall be permitted.
- (a) True
  - (b) False