

# 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." The necessity of carefully studying 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*, and provides the reader with information essential to understanding the *Code* rules.

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 understanding 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 2014 *Code* book to answer the following questions.

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. The *Code* isn't intended as a design specification standard or instruction manual for untrained persons.
  - (a) True
  - (b) False
3. 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
4. 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
5. 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
6. The following systems shall be installed in accordance with the *NEC* requirements:
  - (a) signaling conductors, equipment, and raceways
  - (b) communications conductors, equipment, and raceways
  - (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 and raceways
  - (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. 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
15. Utilities may include entities that are designated or recognized by governmental law or regulation by public service/utility commissions.
  - (a) True
  - (b) False
16. 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
17. 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
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 most recent 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 (SI) or the inch-pound unit of measurement system shall be permitted.
- (a) True
  - (b) False