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05 changes-1 5 Hours of Credit

Article 90 Introduction

1. 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

Chapter 1 General

Article 100 Definitions

2. The localization of an overcurrent condition to restrict outages to the circuit or equipment affected, accomplished by the choice of overcurrent-protective devices is called _____.

- (a) overcurrent protection
- (b) interrupting capacity
- (c) selective coordination
- (d) overload protection

3. _____ is a single unit that provides independent living facilities for persons, including permanent provisions for living, sleeping, cooking, and sanitation.

- (a) two-family dwelling
- (b) one-family dwelling
- (c) dwelling unit
- (d) multifamily dwelling

The grounding electrode conductor is the conductor used to connect the grounding electrode to the equipment grounding (bonding) conductor and the grounded neutral conductor at _____.

- (a) the service
- (b) each building or structure supplied by feeder(s)
- (c) the source of a separately derived system
- (d) all of these

5. _____ is an accommodation with two or more contiguous rooms comprising a compartment, with or without doors between such rooms that provides living, sleeping, sanitary and storage facilities.

- (a) guest room
- (b) guest suite
- (c) dwelling unit
- (d) single family dwelling

6. A(n) _____ system is a premises wiring system whose power is derived from a source of electric energy or equipment other than a service, and that has no direct electrical connection, including a solidly connected grounded circuit conductor, to supply conductors originating in another system.

- (a) separately derived
- (b) classified
- (c) direct

(d) emergency

Article 110 Requirements for Electrical Installations

7. Accepted industry workmanship practices are described in ANSI/NECA 1-2000, *Standard Practices for Good Workmanship in Electrical Contracting*, and other ANSI approved installation standards.

- (a) True
- (b) False

8. For equipment rated 1,200A or more that contains overcurrent devices, switching devices, or control devices at least one entrance, measuring not less than 24 in. wide and 6 ft, 6 in. high, must be provided at each end of the working space. Where the entrance to the working space has a personnel door, the door _____.

- (a) must open either in or out with simple pressure and shall not have any lock
- (b) must open in the direction of egress and be equipped with panic hardware or other devices so the door can open under simple pressure
- (c) must be removed
- (d) must be equipped with an electronic opener

Chapter 2 Wiring and Protection

Article 200 Use and Identification of grounded neutral conductors

9. Grounded neutral conductors larger than 6 AWG must be identified by _____.

- (a) a continuous white or gray outer finish along their entire length
- (b) three continuous white stripes along their entire length
- (c) distinctive white or gray tape or paint at terminations
- (d) a, b, or c

10. The white conductor within a cable can be used for the ungrounded (hot) conductor, but the white conductor must be permanently reidentified to indicate its use as an ungrounded (hot) conductor at each location where the conductor is visible and accessible. Identification must _____.

- (a) be by painting or other effective means
- (b) be a color other than white, gray, or green
- (c) both a and b
- (d) none of these

Article 210 Branch Circuits

11. Where more than one nominal voltage system exists in a building, each _____ conductor of a branch circuit, where accessible, shall be identified by system.

- (a) grounded
- (b) ungrounded
- (c) grounding
- (d) all of these

12. GFCI protection is required for all 15 and 20A, 125V single-phase receptacles located within an arc measurement of 6 ft from the dwelling unit _____.

- (a) laundry sink
- (b) utility sink

- (c) wet bar sink
- (d) all of these

13. In other than dwelling units, GFCI protection is required _____.

- (a) for outdoor 15 and 20A, 125V single-phase receptacles accessible to the public
- (b) at an accessible location for HVAC equipment
- (c) both a and b
- (d) neither a or b

14. A receptacle outlet must be installed at each wall counter space that is 12 in. or wider so that no point along the wall line is more than _____, measured horizontally, from a receptacle outlet in that space.

- (a) 10 in.
- (b) 12 in.
- (c) 16 in.
- (d) 24 in.

15. One receptacle outlet must be installed at each island or peninsular countertop space with a long dimension of 2 ft or greater, and a short dimension of 12 in. or greater. When breaks occur in countertop spaces for appliances, sinks, etc., there is never a need for more than one total receptacle outlet.

- (a) True
- (b) False

16. In dwelling units, at least one wall receptacle outlet must be installed in bathrooms within _____ of the outside edge of each basin. The receptacle outlet must be located on a wall or partition that is adjacent to the basin or basin countertop.

- (a) 12 in.
- (b) 18 in.
- (c) 24 in.
- (d) 36 in.

17. Guest rooms in hotels, motels, and similar occupancies without permanent provisions for cooking must have receptacle outlets installed in accordance with 210.52(A) and 210.52(D).

- (a) True
- (b) False

18. A 15 or 20A, 125V, single-phase receptacle outlet must be installed at an accessible location for the servicing of heating, air-conditioning, and refrigeration equipment. The receptacle must be located on the same level and within _____ of the heating, air-conditioning, and refrigeration equipment.

- (a) 10 ft
- (b) 15 ft
- (c) 20 ft
- (d) 25 ft

Article 215 Feeders

19. The size of the grounded neutral conductor for a feeder must not be smaller than specified in _____.

- (a) Table 250.122

- (b) Table 250.66
- (c) Table 310.16
- (d) Table 430.52

Article 225 Outside Branch Circuits and Feeders

20. Raceways on exterior surfaces of buildings or other structures must be arranged to drain, and in _____ locations must be raintight.

- (a) damp
- (b) wet
- (c) dry
- (d) all of these

Article 230 Services

21. Additional services are permitted for different voltages, frequencies, or phases, or for different uses such as for _____.

- (a) gymnasiums
- (b) different rate schedules
- (c) flea markets
- (d) special entertainment events

22. The additional service disconnecting means for fire pumps or for emergency, legally required standby, or optional standby services permitted by 230.2, must be installed remote from the one to six service disconnecting means for normal service to minimize the possibility of _____ interruption of supply.

- (a) accidental
- (b) intermittent
- (c) simultaneous
- (d) prolonged

Article 240 Overcurrent Protection

23. Single-pole breakers with identified handle ties can be used to protect each ungrounded conductor for line-to-line connected loads.

- (a) True
- (b) False

24. The “next size up protection rule“ of 240.4(B) is permitted for transformer secondary tap conductors.

- (a) True
- (b) False

25. Overcurrent protection devices must be _____.

- (a) accessible (as applied to wiring methods)
- (b) accessible (as applied to equipment)
- (c) readily accessible
- (d) inaccessible to unauthorized personnel

Article 250 Grounding and Bonding

26. An effective ground-fault current path is created when all electrically conductive materials that are likely to be energized are bonded together and to the _____.

- (a) ground
- (b) earth
- (c) electrical supply source
- (d) none of these

27. The grounding electrode conductor at the service is permitted to terminate on an equipment grounding terminal bar if a (main) bonding jumper is installed between the grounded neutral conductor bus and the equipment grounding terminal.

- (a) True
- (b) False

28. A grounding electrode is required if a building or structure is supplied by a feeder or by more than one branch circuit.

- (a) True
- (b) False

29. The frame of a vehicle-mounted generator is not required to be connected to a _____ for a system supplied by cord and plug using receptacles mounted on the vehicle or the generator when the grounding terminals of the receptacles are bonded to the generator frame and the generator frame is bonded to the vehicle frame.

- (a) grounding electrode
- (b) grounded neutral conductor
- (c) ungrounded conductor
- (d) equipment grounding (bonding) conductor

30. Interior metal water piping located more than _____ from the point of entrance to the building cannot be used as a part of the grounding electrode system, or as a conductor to interconnect electrodes that are part of the grounding electrode system.

- (a) 2 ft
- (b) 4 ft
- (c) 5 ft
- (d) 6 ft

31. For electrical equipment supplementary electrodes:

- (1) A bond to the grounding electrode system is not required.
- (2) The bonding jumper to the supplementary electrode can be any size.
- (3) The 25 ohm resistance requirement of 250.56 does not apply.

- (a) True
- (b) False

32. Metal enclosures for grounding electrode conductors must be electrically continuous from the point of attachment to cabinets or equipment to the grounding electrode.

- (a) True
- (b) False

33. Service equipment, service raceways, and service conductor enclosures must be bonded _____.

- (a) to the grounded service conductor
- (b) by threaded raceways into enclosures, couplings, hubs, conduit bodies, etc.
- (c) by listed bonding devices with bonding jumpers
- (d) any of these

34. Exposed structural steel that is interconnected to form a steel building frame, is not intentionally grounded and is likely to become energized, must be bonded to:

- (a) The service equipment enclosure.
- (b) The grounded neutral conductor at the service.
- (c) The grounding electrode conductor where of sufficient size.
- (d) any of these

35. For flexible metal conduit (FMC) and liquidtight flexible metal conduit (LFMC), an equipment grounding (bonding) conductor is required regardless of the size of the overcurrent protection if the FMC or LFMC is installed for the reason of _____.

- (a) physical protection
- (b) flexibility
- (c) protection from moisture
- (d) communication systems

36. An equipment grounding (bonding) conductor must be identified by _____.

- (a) a continuous outer finish that is green
- (b) being bare
- (c) a continuous outer finish that is green with one or more yellow stripes
- (d) any of these

37. Where a metal box is surface-mounted, direct metal-to-metal contact between the device yoke and the box is permitted to ground the receptacle to the box. Unless the receptacle is listed as _____, at least one of the insulating retaining washers must be removed from the receptacles to ensure direct metal-to-metal contact between the device yoke and metal outlet box.

- (a) self-grounding
- (b) weatherproof
- (c) metal contact sufficient
- (d) isolated grounding

38. An equipment bonding jumper for a grounding-type receptacle must be installed between the receptacle and a flush-mounted outlet box, even when the contact device is listed as self-grounding.

- (a) True
- (b) False

Chapter 3 Wiring Methods and Materials

Article 300 Wiring Methods

39. When unable to maintain the minimum required distance from the edge of a wood framing member to a bored hole for cable or nonmetallic raceway installation, the cable or raceway must be protected from penetration by screws or nails by a steel plate or bushing at least _____ and of appropriate length and width to cover the area of the wiring. A thinner plate that provides equal or better protection may be used if listed and marked.

- (a) ¼ inch thick
- (b) 1/8 inch thick
- (c) 1/16 inch thick
- (d) 24 gauge

40. In both exposed and concealed locations, where a cable or nonmetallic raceway-type wiring method is installed parallel to framing members such as joists, rafters, or studs or furring strips, the nearest outside surface of the cable or raceway must be _____ the nearest edge of the framing member where nails or screws are likely to penetrate.

- (a) not less than 1¼ inch from
- (b) immediately adjacent to
- (c) not less than 1/16 inch from
- (d) 90° away from

41. Nonferrous raceways, cable trays, cablebus, auxiliary gutters, cable armor, boxes, cable sheathing, cabinets, elbows, couplings, nipples, fittings, supports and support hardware _____ must be provided with supplementary corrosion protection.

- (a) embedded or encased in concrete
- (b) in direct contact with the earth
- (c) likely to become energized
- (d) a or b

42. Nonmetallic raceways, cable trays, cablebus, auxiliary gutters, boxes, and cables with a nonmetallic outer jacket must be made of material approved for the condition and where exposed to chemicals, the materials or coatings must be _____.

- (a) listed as inherently resistant to chemicals
- (b) identified for the specific chemical reagent
- (c) both a and b
- (d) either a or b

43. Short sections of raceways used for _____ are not required to be installed complete between outlet, junction, or splicing points.

- (a) meter to service enclosure connection
- (b) protection of cables from physical damage
- (c) nipples
- (d) separately derived systems

Article 310 Conductors

44. Conductors installed in conduit exposed to direct sunlight in close proximity to rooftops have been shown, under certain conditions, to experience an increase in temperature of _____ °F above ambient temperature.

- (a) 70
- (b) 10
- (c) 30
- (d) 40

45. For individual dwelling units of _____ dwellings, Table 310.15(B)(6) can be used to size 3-wire, 1Ø, 120/240V service or feeder conductors that serve as the main power feeder to a dwelling unit.

- (a) one-family
- (b) two-family
- (c) multifamily
- (d) any of these

Article 314 Outlet, Device, Pull and Junction Boxes, Conduit Bodies, Fittings and Handhole Enclosures

46. When counting the number of conductors in a box, a conductor running through the box with no loop in it is counted as _____ conductor(s).

- (a) one
- (b) two
- (c) zero
- (d) none of these

47. In walls or ceilings constructed of wood or other combustible surface material, boxes, plaster rings, extension rings, or listed extenders must _____.

- (a) be flush with the surface
- (b) project from the surface
- (c) a or b
- (d) be set back no more than ¼ in.

48. Where a box is used as the sole support of a ceiling-suspended (paddle) fan, the box must be listed for the application and must be marked with the weight of the fan to be supported if over 35 lbs.

- (a) True
- (b) False

49. Handhole enclosures must be sized in accordance with 314.28(A) for conductors operating at 600 volts and below. For handhole enclosures without bottoms, the measurement to the removable cover is taken from the _____.

- (a) end of the conduit or cable assembly
- (b) lowest point in the hole
- (c) leveling marks provided
- (d) highest possible ground water level.

50. Handhole enclosure covers must have an identifying _____ that prominently identifies the function of the enclosure, such as “electric.”

- (a) mark
- (b) logo
- (c) a or b
- (d) manual

2005 NEC Code Part 1-Quiz Answer Sheet

- | | | | | | | | | | |
|----|---|---|---|---|----|---|---|---|---|
| 1 | a | b | c | d | 26 | a | b | c | d |
| 2 | a | b | c | d | 27 | a | b | c | d |
| 3 | a | b | c | d | 28 | a | b | c | d |
| 4 | a | b | c | d | 29 | a | b | c | d |
| 5 | a | b | c | d | 30 | a | b | c | d |
| 6 | a | b | c | d | 31 | a | b | c | d |
| 7 | a | b | c | d | 32 | a | b | c | d |
| 8 | a | b | c | d | 33 | a | b | c | d |
| 9 | a | b | c | d | 34 | a | b | c | d |
| 10 | a | b | c | d | 35 | a | b | c | d |
| 11 | a | b | c | d | 36 | a | b | c | d |
| 12 | a | b | c | d | 37 | a | b | c | d |
| 13 | a | b | c | d | 38 | a | b | c | d |
| 14 | a | b | c | d | 39 | a | b | c | d |
| 15 | a | b | c | d | 40 | a | b | c | d |
| 16 | a | b | c | d | 41 | a | b | c | d |
| 17 | a | b | c | d | 42 | a | b | c | d |
| 18 | a | b | c | d | 43 | a | b | c | d |
| 19 | a | b | c | d | 44 | a | b | c | d |
| 20 | a | b | c | d | 45 | a | b | c | d |
| 21 | a | b | c | d | 46 | a | b | c | d |
| 22 | a | b | c | d | 47 | a | b | c | d |
| 23 | a | b | c | d | 48 | a | b | c | d |
| 24 | a | b | c | d | 49 | a | b | c | d |
| 25 | a | b | c | d | 50 | a | b | c | d |

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