Instructions: **Fee $55**

1. Print these pages.
2. Circle the correct answers and transfer them to the answer sheet.
3. Page down to the last page for the verification forms and mailing instructions.
4. Use the 2011 NEC code book or this language (click here) & compare it to the 2008 NEC code and analyzing the code changes.

Course: 12177 2011 NEC CODE UPDATES PART 5

This course is valid for these credentials:

Credential Description	Cred Code	Credit Hours
Registered - Beginner Electrician	BE	6.0
Commercial Electrical Inspector	CEI	6.0
Industrial Journeyman Electrician	IJE	6.0
Journeyman Electrician	JE	6.0
Master Electrician	ME	6.0
Residential Journeyman Electrician	RJE	6.0
Residential Master Electrician	RME	6.0
UDC-Electrical Inspector	UEI	6.0

2011 NEC Code Updates Part 5

1. 670.5 Short-Circuit Current Rating. New section added requiring industrial machinery to be installed only where available fault current _____ its marked short-circuit current rating.
   a. does not exceed
   b. does exceed
   c. matches
   d. both c & b

---

2. 680.2 Definitions: Dry-Niche Luminaire. Dry-Niche Luminaire - A luminaire intended for installation in the _____ of a pool, spa, or fountain.
   a. floor
   b. wall
   c. none of the above
   d. both a & b

---

3. 680.2 Definitions: Dry-Niche Luminaire. Dry-Niche Luminaire allows the entry of pool water.
   a. true
   b. false

---

4. 680.2 Definitions: Low Voltage Contact Limit. Low Voltage Contact Limit - A voltage not exceeding the following values:
   a. 15 volts (RMS) for sinusoidal ac
   b. 21.2 volts peak for nonsinusoidal ac
   c. none of the above
   d. both a & b

---

5. 680.2 Definitions: Low Voltage Contact Limit. Low Voltage Contact Limit - A voltage not exceeding the following values:

a. 30 volts for continuous dc
b. 12.4 volts peak for dc that is interrupted at a rate of 10 to 200 Hz.
c. none of the above
d. both a & b

---

6. A new definition has been added to define a "Low Voltage Shock Limit" for low voltage luminaires around _____.

a. pools
b. fountains
c. none of the above
d. both a & b

---

7. 680.3 Other Articles. Except as modified by this article, wiring and equipment _____ to pools and fountains shall comply with other applicable provisions of this Code.

a. in
b. adjacent
c. above
d. both a & b

---

8. A reference for site lighting systems operating at _____ per 411.4(B) was added to Table 680.3 for clarity and usability.

a. 30 volts
b. less than 30 volts
c. both a & b
d. neither a or b

---

9. 680.10 Underground Wiring Location (Swimming Pools, Fountains, and Similar Installations). Underground wiring shall not be permitted under the pool or within the area extending _____ horizontally from the inside wall of the pool unless this wiring is necessary to supply pool equipment permitted by this article.

a. 1.5 m
b. 5 ft
c. both a & b
d. neither a or b

---

10. 680.10 Underground Wiring Location (Swimming Pools, Fountains, and Similar Installations).Where space limitations prevent wiring from being routed the required distance from the pool, such wiring shall be permitted where installed in complete raceway systems of a _____.

a. rigid metal conduit
c. intermediate metal conduit
c. nonmetallic raceway system
d. all of the above

---

11. 680.10 Underground Wiring Location (Swimming Pools, Fountains, and Similar Installations). Nonmetallic raceways listed for direct burial located under _____ of concrete was added to Table 680.10, allowing a minimum burial depth of 150 mm (6 in.).

a. 100 mm
b. 4 in.
c. both a & b
d. neither a or b

---

12. 680.10 Underground Wiring Location (Swimming Pools, Fountains, and Similar Installations). Table 680.10, allows a minimum burial depth of _____ for nonmetallic raceways listed for direct burial.

a. 150 mm
b. 6 in.
c. both a & b
d. neither a or b

---

13. 680.21(A)(5) Motors - Cord-and-Plug Connection. Flexible cords for cord-and-plug connected pool pump motors for a permanently installed pool must contain a copper equipment grounding conductor not smaller than ____ AWG.

a. 14
b. 12
c. both a & b
d. 10

---

14. 680.21(A)(5) Motors - Cord-and-Plug Connection. The flexible cord is not to exceed _____ in length.

a. 900 mm
b. 3 ft
c. none of the above
d. both a & b

---

15. 680.21(A)(5) Motors - Cord-and-Plug Connection. The flexible cord must include a _____ equipment grounding conductor sized per 250.122.

a. copper
b. aluminum
c. copper clad
d. both a & c

---

16. 680.21(A)(5) Motors - Cord-and-Plug Connection. The cord to terminate in a grounding-type attachment _____.

a. switch
b. plug
c. outlet
d. both a & b

---

17. 680.21(C) Motors - GFCI Protection. Outlets supplying permanently installed pool pump motors require GFCI protection under the following conditions:

a. Rated 15 or 20 amperes
b.120 volt through 240 volt
c. neither a or b
d. both a & b

---

18. 680.21(C) Motors - GFCI Protection. Outlets supplying permanently installed pool pump motors require GFCI protection under the following conditions:

a. Connected to single phase circuit
b. Cord-and-plug or direct connection
c. Regardless of location
d. all of the above

---

19. 680.21(C) Motors - GFCI Protection. GFCI requirements for permanently installed pool pump motors were relocated and the voltage ratings requiring GFCI protection for these motors was revised to include all voltages from 120 volt through 480 volt.

a. true
b. false

---

20. 680.23(A)(3) GFCI - Underwater Luminaires. Revisions eliminate GFCI requirements for listed low voltage (luminaires meeting new definition of "Low Voltage Contact Limit", which replaces the previous voltage limit for GFCI protection of "over _____ volts"

a. 10
b. 15
c. 30
d. none of the above

---

21. 680.23(A)(3) GFCI - Underwater Luminaires. Low Voltage Contact Limit - A voltage not exceeding the following value:

a. 15 volts (RMS) for sinusoidal ac
b. 21.2 volts peak for nonsinusoidal ac
c. neither a or b
d. both a & b

---

22. 680.23(A)(3) GFCI - Underwater Luminaires. Low Voltage Contact Limit - A voltage not exceeding the following value:

a. 30 volts for continuous dc
b. 12.4 volts peak for dc that is interrupted at a rate of 10 to 200 Hz
c. neither a or b
d. both a & b

---

23. 680.25(B)(l) Sizing of Feeder EGC. Equipment grounding conductor for pool equipment feeder from a separately derived systems must not be smaller than ____ AWG.

a. 8
b. 10
c. 12
d. none of the above

---

24. 680.25(B)(l) Sizing of Feeder EGC. Equipment grounding conductor for pool equipment feeder from a separately derived systems must be sized per _____.

a. 250.30(A)(8)
b. 250.30 (B)(8)
c. both a & b
d. neither a or b

---

25. 680.25 Feeders (Permanently Installed Pools). These provisions shall apply to any feeder on the supply side of panelboards supplying branch circuits for pool equipment covered in Part II of this article and on the load side of the_____.

a. service equipment
b. source of a separately derived system
c. generator
d. both a & b

---

26. 680.25 Feeders (Permanently Installed Pools). (B) Grounding. An _____shall be installed with the feeder conductors between the grounding terminal of the pool equipment panelboard and the grounding terminal of the applicable service equipment or source of a separately derived system.

a. equipment bonding conductor
b. equipment grounding conductor
c. neither a or b
d. both a & b

---

27. 680.25 Feeders (Permanently Installed Pools). (B) Grounding. For other than (1) existing feeders covered in 680.25(A), Exception, or (2) feeders to separate buildings that do not utilize an insulated equipment grounding conductor in accordance with 680.25(B)(2), this equipment grounding conductor shall be_____.

a. insulated
b. covered
c. neither a or b
d. both a & b

---

28. 680.25 Feeders (Permanently Installed Pools). (B) Grounding. (1) Size. This conductor shall be sized in accordance with 250.122 but not smaller than 8 AWG.

a. true
b. false

---

29. 680.25 Feeders (Permanently Installed Pools). (B) Grounding. (1) Size. On separately derived systems, this conductor shall be sized in accordance with 250.30(A)(8) but not smaller than 12 AWG.

a. true
b. false

---

30. 680.26(B)(l)(b) Copper Conductor Grid Equipotential Bonding for Conductive Pool Shell. Copper conductor grid for bonding conductive pool shell shall be a minimum of ___ AWG.

a. 6
b. 8
c. 10
d. 12

---

31. 680.26(B)(l)(b) Aluminum Conductor Grid Equipotential Bonding for Conductive Pool Shell. Aluminum conductor grid for bonding conductive pool shell shall be min. ___ AWG.

a. 6
b. 8
c. 10

d. not allowed by code

---

32. 680.26(B)(l)(b) Copper Conductor Grid Equipotential Bonding for Conductive Pool Shell. The _____ copper conductors bonded to each other at all points of crossing and conform to the contour of the pool.

a. stranded
b. bare
c. neither a or b
d. both a & b

---

33. 680.26(B)(l)(b) Copper Conductor Grid Equipotential Bonding for Conductive Pool Shell. The bonding for copper conductors shall be in accordance with _____.

a. 250.8
b. other approved means
c. neither a or b
d. both a & b

---

34. 680.26(B)(l)(b) Copper Conductor Grid Equipotential Bonding for Conductive Pool Shell. Approved bonding for copper conductors would include:

a. Listed pressure connectors
b. Terminal bars
c. exothermic welding
d. all of the above

---

35. 680.26(B)(l)(b) Copper Conductor Grid Equipotential Bonding for Conductive Pool Shell. Approved bonding method for copper conductors would include:

a. Machine screw type fasteners that engage more than 2 threads or are secured with a nut.
b. Thread forming machine screws that engage more than 2 threads in the enclosure.
c. neither a or b
d. both a & b

---

36. 680.26(B) Equipotential Bonding. (1) Conductive Pool Shells. Bonding to conductive pool shells shall be provided as specified in 680.26(B) (1)(a) or (B)(1)(b). Poured concrete, pneumatically applied or sprayed concrete and concrete block with painted or plastered coatings shall all be considered conductive materials due to _____.

a. water permeability
b. water porosity
c. neither a or b
d. both a & b

---

37. 680.26(B) Equipotential Bonding. Vinyl liners and fiberglass composite shells shall be considered to be nonconductive materials.

a. true
b. false

---

38. 680.26(B) Equipotential Bonding. (b) Copper Conductor Grid. When a copper conductor grid is utilized it shall comply with:

a. Be constructed of minimum 8 AWG bare solid copper conductors bonded to each other at ail points of crossing. The bonding shall be in accordance with 250.8 or other approved means.
b. Conform to the contour of the pool
c. neither a or b
d. both a & b

---

39. 680.26(B) Equipotential Bonding. (b) Copper Conductor Grid. When a copper conductor grid is utilized it shall comply with:

a. Be arranged in a 300-mm (12”) by 300-mm (12”) network of conductors in a uniformly spaced parallel grid pattern with a tolerance of 200 mm (8”).
b. Be secured within or under the pool no more than 300 mm (12”) from the outer contour of the pool shell.
c. neither a or b
d. both a & b

---

40. 680.26(B) Equipotential Bonding. (b) Copper Conductor Grid. When a copper conductor grid is utilized it shall conform to the contour of the pool and the pool deck.

a. true
b. false

---

41. 680.26(B) Equipotential Bonding. The perimeter surfaces (deck steel) are required to extend 1 m (3 ft) horizontally beyond the inside walls of the pool, not to the contour of the pool or the pool deck.

a. true
b. false

---

42. 680.26(B) Equipotential Bonding. The "alternate means" described at 680.26(B)(2)(b) is the same method as the "copper conductor grid" system here at 680.26(B)(l)(b).

a. true
b. false

---

43. 680.26(B)(2) Bonded Parts of Perimeter Surfaces. The perimeter surface shall extend for _____ horizontally beyond the inside walls of the pool and shall include unpaved surfaces as well as poured concrete surfaces and other types of paving.

a. 1 m
b. 3 ft
c. neither a or b
d. both a & b

---

44. 680.26(B)(2) Bonded Parts of Perimeter Surfaces shall include unpaved surfaces as well as poured concrete surfaces and other types of paving.

a. true
b. false

---

45. 680.26(B)(2) Bonded Parts of Perimeter Surfaces. Perimeter surfaces less than 1 m (3 ft) separated by a permanent wall or building 1.5 m (5 ft) in height or more shall require equipotential bonding on both sides of the permanent wall or building.

a. true

b. false

---

46. 680.26 Equipotential Bonding (Permanently Installed Pools). (B) Bonded Parts. The parts specified in 680.26(B)(1) through (B)(7) shall be bonded together using solid copper conductors_____ not smaller than 8 AWG or with rigid metal conduit of brass or other identified corrosion-resistant metal.

a. insulated covered
b. bare
c. neither a or b
d. both a & b

---

47. 680.26 Equipotential Bonding (Permanently Installed Pools).Connections to bonded parts shall be made in accordance with 250.8. An 8 AWG or larger solid copper bonding conductor provided to reduce voltage gradients in the pool area shall not be required to be extended or attached to remote_____.

a. panelboards
b. service equipment
c. electrodes
d. all of the above

---

48. 680.26(B)(7) Fixed Metal Parts. All fixed metal parts within 1.5 m (5 ft) horizontally and 3.7 m (12 ft) vertically of permanently installed pools must be bonded to the _____.

a. panelboards
b. service equipment
c. electrodes
d. equipotential bonding grid

---

49 680.26(B)(7) Fixed Metal Parts. This would include but not limited to, metal sheathed cables and raceways, metal piping, metal awnings, metal fences, metal gutters, and metal door and window frames.

a. true
b. false

---

50. 680.26(B)(7) Fixed Metal Parts. Exception No. 1: Fix metal parts not separated from the pool by a permanent barrier and is less than 5’ shall be required to be bonded.

a. true
b. false

---

51. 680.26(B)(7) Fixed Metal Parts. Exception No. 1: Fix metal parts separated from the pool by a permanent barrier and is less than 5’ shall be required to be bonded.

a. true
b. false

---

52. 680.26(B)(7) Fixed Metal Parts. Exception No. 2: Those greater than 1.5 m (5 ft) horizontally of the inside walls of the pool shall be required to be bonded if the metal parts a subject to contact or could become energized.

a. true
b. false

---

53. 680.26(B)(7) Fixed Metal Parts. Exception No. 3: Those greater than _____ measured vertically above the maximum water level of the pool or as measured vertically above any observation stands, towers, or platforms, or any diving structures, shall not be required to be bonded.

a. 3.7 m
b. 12 ft
c. 144”
d. all of the above

---

54. 680.32 GFCI Requirements - Storable Pools. Revisions occurred to _____ to more clearly define the receptacles required to comply with GFCI protection requirements.

a. 680.32
b. 680.31
c. 680.35
d. 680.21

---

55. 680.32 GFCI Requirements - Storable Pools. All 125-volt, 15- and 20-ampere receptacles located within _____ of the inside walls of a storable pool shall be GFCI-protected.

a. 6.0 m
b. 20 ft
c. 240”
d. all of the above

---

56. 680.32 GFCI Requirements - Storable Pools. Receptacles shall not be located less than _____ from the inside walls of a storable pool [680.34]

a. 1.83 m
b. 6 ft
c. 70”
d. both a & b

---

57. 680.32 GFCI Requirements - Storable Pools. In determining these dimensions, the distance to be measured shall be the shortest path the supply cord of an appliance connected to the receptacle that would include piercing a floor, wall, ceiling, doorway with hinged or sliding door, window opening.

a. true
b. false

---

58. 680.42(A)(l) Outdoor Spas and Hot Tubs. Listed packaged spa or hot tub equipment assemblies or self-contained spas or hot tubs are permitted to use liquidtight flexible metal conduit or liquidtight flexible nonmetallic conduit in lengths up to _____ external to the spa or hot tub enclosure.

a. 1.83 m
b. 6 ft
c. 70”
d. both a & b

---

59. 680.42(A)(l) Outdoor Spas and Hot Tubs. Listed packaged spa or hot tub equipment assemblies or self-contained spas or hot tubs are permitted to use liquidtight flexible metal

conduit or liquidtight flexible nonmetallic conduit within the enclosure to make the electrical connection and this would be in addition to the external requirements in question 58 above.

a. true
b. false

---

60. 680.42(A)(l) Outdoor Spas and Hot Tubs. Listed packaged spa or hot tub equipment assemblies or self-contained spas or hot tubs are only permitted to use up to 1.83 m (6 ft) of liquidtight flexible metal conduit or liquidtight flexible nonmetallic conduit is permitted under the skirt of a spa or hot tub.

a. true
b. false

---

61 680.42(A)(l) Outdoor Spas and Hot Tubs. (A) Flexible Connections. Listed packaged spa or hot tub equipment assemblies or self-contained spas or hot tubs utilizing a _____ control panel shall be permitted to use flexible connections as covered in 680.42(A)(1) and (A)(2).

a. factory-installed
b. factory-assembled
c. field-assembled
d. both a & b

---

62. 680.43 Ex. No. 2 Indoor Spas and Hot Tubs. A new Ex. No. 2 was added to 680.43 specifying that equipotential bonding requirements for a listed _____ installed indoors above a finished floor is not required.

a. self-contained spa
b. hot tub
c. none of the above
d. both a & b

---

63. 680.43 Indoor Installations (Spas and Hot Tubs). Exception No. 1: Listed spa and hot tub packaged units rated _____ shall he permitted to be cord and plug connected to facilitate the removal or disconnection of the unit for maintenance and repair.

a, at 20 amperes
b. less than 20 amperes
c. none of the above
d. both a & b

---

64. 680.43 Indoor Installations (Spas and Hot Tubs). Exception No. 2: The equipotential bonding requirements for perimeter surfaces in 680.26(B)(2) shall be apply to a listed self-contained spa or hot tub installed above a finished floor.

a. true
b. false

---

65. 680.62 Therapeutic Tubs (Hydrotherapeutic Tanks). Small conductive surfaces of therapeutic tubs not likely to become energized are required to be bonded.

a. true
b. false

---

66. 680.62 Therapeutic Tubs (Hydrotherapeutic Tanks). Exception: Small conductive surfaces not likely to become energized, such as _____not connected to metallic piping, and towel bars, mirror frames, and similar nonelectrical equipment not connected to metal framing, shall not be required to be bonded.

a. air jets
b. water jets
c. drain fittings
d. all of the above

---

67. 680.62 Therapeutic Tubs (Hydrotherapeutic Tanks). (B) Bonding. The following parts shall be bonded together:

a. All metal fittings within or attached to the tub structure
b. Metal parts of electrical equipment associated with the tub water circulating system
c. Pump motors
d. all of the above

---

68. 680.62 Therapeutic Tubs (Hydrotherapeutic Tanks). (B) Bonding. The following parts shall be bonded together:

a. Metal-sheathed cables and raceways and metal piping that are within 1.5 m (5 ft) of the inside walls of the tub and not separated from the tub by a permanent barrier
b. All metal surfaces that are within 1.5 m (5 ft) of the inside walls of the tub and not separated from the tub area by a permanent barrier
c. Electrical devices and controls that are not associated with the therapeutic tubs and located within 1.5 m (5 ft) from such units
d. all of the above

---

69. 680.73 Hydromassage Bathtub – Accessibility. A receptacle for a cord- and plug-connected hydromassage bathtub, located under the tub and accessible only through an access opening, must be installed so that the receptacle face is within direct view from the access opening and located not more than _____ from the opening.

a. 1 ft
b. 300 mm
c. none of the above
d. both a & b

---

70. 680.73 Hydromassage Bathtub – Accessibility. Hydromassage bathtub electrical equipment shall be accessible allowing minimal damage to the building structure or building finish.

a. true
b. false

---

71. 680.73 Hydromassage Bathtub – Accessibility. A receptacle for a cord- and plug-connected hydromassage bathtub, located under the tub and accessible only through an access opening, must be installed so that the receptacle face is within direct view from the access opening unless the installer can demonstrate the ease of servicing the pump motor and receptacle in a reasonable amount of time.

a. true
b. false

---

72. 680.74 Hydromassage Bathtub – Bonding. All metal piping systems and all grounded metal parts in contact with the circulating water shall be bonded together using a solid copper bonding jumper that is _____.

a. insulated
b. bare
c. stranded
d. both a & b

---

73. 680.74 Hydromassage Bathtub – Bonding. All metal piping systems and all grounded metal parts in contact with the circulating water shall be bonded together using a solid copper bonding jumper sized _____ AWG

a. smaller than 8
b. 10 or larger
c. none of the above
d. both a & b

---

74. 680.74 Hydromassage Bathtub – Bonding. A strained copper bonding jumper long enough to terminate on a replacement non-double insulated pump motor is required when a double insulated pump motor is employed at a hydromassage bathtub.

a. true
b. false

---

75. 680.74 Hydromassage Bathtub – Bonding. The bonding jumper is to terminate to the equipment grounding conductor of the branch circuit of the motor.

a. true
b. false

Note: Inspectors and installers alike will have to decide what to do with the other end of the 8 AWG or larger solid copper bonding jumper if a double insulated circulating pump motor is employed and no metal piping and no grounded metal parts are present.

---

76. 682.14 Submersible or Floating Equipment. Submersible or floating equipment shall be cord- and plug-connected, using extra hard usage cord, as designated in Table 400.4 and listed with a ___ suffix.

a. D
b. W
c. none of the above
d. both a & b

---

77. 682.14 Submersible or Floating Equipment. The _____ combination shall be arranged to be suitable for the location while in use.

a. plug
b. receptacle
c. none of the above
d. both a & b

---

78. 682.14 Submersible or Floating Equipment. Disconnecting means shall be provided to isolate each _____ electrical equipment from its supply connection(s) without requiring the plug to be removed from the receptacle.

a. submersible
b. floating
c. none of the above
d. both a & b

---

79. 682.14 Submersible or Floating Equipment. Exception: Equipment listed for direct connection and equipment anchored in place and incapable of routine movement caused by _____ shall be permitted to be connected using wiring methods covered in 682.13.
a. water currents
b. winds
c. none of the above
d. both a & b

---

80. 682.14 Submersible or Floating Equipment. (A) Type and Marking. The disconnecting means shall consist of a circuit breaker, switch, or both, or molded case switch, and shall be specifically _____ to designate which receptacle or other outlet it controls.
a. marked
b. located
c. identified
d. all of the above

---

81. 682.14 Submersible or Floating Equipment. (B) Location. The disconnecting means shall be readily accessible on land, located not more than _____ from the receptacle it controls.
a. 750 mm
b. 30 in.
c. 2 ½’
d. all of the above

---

82. 682.14 Submersible or Floating Equipment. The disconnecting means shall be readily accessible on land and shall be located in the supply circuit ahead of the _____.
a. receptacle
b. disconnect
c. none of the above
d. both a & b

---

83. 682.14 Submersible or Floating Equipment. (B) Location. The disconnecting means shall be located within sight of but not closer than _____ from the shoreline.
a. 1.5 m
b. 5 ft
c. 60”
d. all of the above

---

84. 682.14 Submersible or Floating Equipment. (B) Location. The disconnecting means shall be elevated not less than 300 mm (12 in.) above the _____.
a. datum plane
b. submersible point
c. floating equipment line
d. all of the above

---

85. 682.31 Equipment Grounding Conductors (Natural and Artificially Made Bodies of Water). (A) Type. Equipment grounding conductors shall be insulated copper conductors sized in accordance with 250.122 sized _____ AWG.

a. not smaller than 12 AWG
b.12 AWG
c. none of the above
d. both a & b

---

86. 682.31 Equipment Grounding Conductors (Natural and Artificially Made Bodies of Water). (B) Feeders. Where a feeder supplies a remote panelboard or other distribution equipment, an insulated equipment grounding conductor shall extend from a grounding terminal in the service to a grounding terminal and busbar in the _____.

a. remote panelboard
b. other distribution equipment
c. none of the above
d. both a & b

---

87 682.31 Equipment Grounding Conductors (Natural and Artificially Made Bodies of Water). (C) Branch Circuits. The insulated equipment grounding conductor for branch circuits shall terminate at a grounding terminal in _____.

a. a remote panelboard
b. other distribution equipment
c. grounding terminal in the main service equipment
d. all of the above

---

88 682.31 Equipment Grounding Conductors (Natural and Artificially Made Bodies of Water). (D) Cord-and-Plug-Connected Appliances. Where grounded, cord-and-plug-connected appliances shall be grounded by means of _____.

a. an equipment grounding conductor in the cord
b. a grounding-type attachment plug
c. none of the above
d. both a & b

---

89. 682.32 Bonding of Non-Current-Carrying Metal Parts. All metal parts in contact with the _____ shall be bonded to the grounding terminal in the distribution equipment.

a. water
b. metal piping
c. none of the above
d. both a & b

---

90. 682.32 Bonding of Non-Current-Carrying Metal Parts. All metal parts in contact with the _____ shall be bonded to the grounding terminal in the distribution equipment.

a. tanks
b. non-current-carrying metal parts that are likely to become energized
c. none of the above
d. both a & b

---

91. 690.4 Installation [Solar Photovoltaic (PV) Systems] (A) Photovoltaic Systems. Photovoltaic system(s) shall be permitted to supply _____in addition to any other electricity supply system(s).

a. a building
b. the power grid
c. the other structures
d. both a & c

---

92. 690.4 Installation [Solar Photovoltaic (PV) Systems]. (B) Conductors of Different Systems. _____shall not be contained in the same raceway, cable tray, cable, outlet box, junction box, or similar fitting as conductors, feeders, or branch circuits of other non-PV systems, unless the conductors of the different systems are separated by a partition.

a. Photovoltaic source circuits
b. PV output circuits
c. PV complete systems
d. both a & b

---

93. 690.4 Installation [Solar Photovoltaic (PV) Systems]. PV system conductors shall be _____ as required in 690.4(B)(1) through (4). The means of identification shall be permitted by separate color coding, marking tape, tagging, or other approved means.

a. identified
b. marked
c. listed
d. all of the above

---

94. 690.4 Installation [Solar Photovoltaic (PV) Systems]. (1) Photovoltaic Source Circuits. Photovoltaic source circuits shall be ____at all points of termination, connection, and splices.

a. identified
b. marked
c. listed
d. all of the above

---

95. 690.4 Installation [Solar Photovoltaic (PV) Systems]. (2) Photovoltaic Output and Inverter Circuits. The conductors of PV output circuits and inverter input and output circuits shall be identified at all points of _____.

a. termination
b. connection
c. splices
d. all of the above

---

96. 690.4 Installation [Solar Photovoltaic (PV) Systems]. (3) Conductors of Multiple Systems. Where the conductors of more than one PV system occupy the same junction box. raceway, or equipment, the conductors of each system shall be identified at all _____ points.

a. termination
b. connection
c. splice
d. all of the above

---

97. 690.4 Installation [Solar Photovoltaic (PV) Systems]. Exception: Where the identification of the conductors is evident by _____ further identification is not required.

a. spacing
b. arrangement
c. none of the above
d. both a & b

---

98. 690.4 Installation [Solar Photovoltaic (PV) Systems]. (4) Grouping. Where the conductors of more than one PV system occupy the same junction box or raceway with removable cover(s), the ac and dc conductors of each system shall be grouped separately by wire ties or similar means at least once, and then shall be grouped at intervals not to exceed _____.

a. 1.8 m
b. 6 ft
c. 72”
d. all of the above

---

99. 690.4 Installation [Solar Photovoltaic (PV) Systems]. Exception: The requirement for grouping shall apply even if the circuit enters from a cable or raceway unique to the circuit that makes the grouping obvious.

a. true
b. false

---

100. 690.4 Installation [Solar Photovoltaic (PV) Systems] (E) Wiring and Connections. Informational Note: See Article _____ for the definition of qualified person.

a. 690
b. 100
c. 200
d. all of the above

---

101. 690.4 Installation [Solar Photovoltaic (PV) Systems] (E) Wiring and Connections. The equipment and systems in 690.4(A) through (D) and all associated wiring and interconnections shall be installed only by_____.

a. licensed installers
b. qualified persons
c. the factory installers
d. both a & b

---

102. 690.4 Installation [Solar Photovoltaic (PV) Systems]. (F) Circuit Routing._____, in and out of conduit, and inside of a building or structure, shall be routed along building structural members such as beams, rafters, trusses, and columns where the location of those structural members can be determined by observation.

a. Photovoltaic source
b. PV output conductors
c. PV input conductors
d. both a & b

---

103. 690.4 Installation [Solar Photovoltaic (PV) Systems]. Where circuits are imbedded in built-up, laminate, or membrane roofing materials in roof areas not covered by PV modules and associated equipment, the location of circuits shall be clearly _____.

a. marked
b. labeled
c. neither a or b
d. both a & b

---

104. 690.4 Installation [Solar Photovoltaic (PV) Systems]. (H) Multiple Inverters. A PV system shall be permitted to have multiple utility-interactive inverters installed in or on a _____ building or structure.
a. single
b. multiple
c. none of the above
d. both a & b

---

105. 690.4 Installation [Solar Photovoltaic (PV) Systems]. Where the inverters are remotely located from each other, a directory in accordance with 705.10 shall be installed at _____showing the location of all ac and dc PV system disconnecting means in the building.
a. each dc PV system disconnecting means
b. each ac disconnecting means
c. the main service disconnecting means
d. all of the above

---

106. 690.4 Installation [Solar Photovoltaic (PV) Systems]. Exception; A directory shall not be required where all inverters and PV dc disconnecting means are grouped and are within sight of the main service disconnecting means.
a. true
b. false

---

107. 690.10 Stand-Alone Systems [PV Systems). The _____ wiring system shall be adequate to meet the requirements of this Code for a similar installation connected to a service.
a. premises
b. utility
c. none of the above
d. both a & b

---

108. 690.10 Stand-Alone Systems [PV Systems). The wiring on the supply side of the _____ disconnecting means shall comply with this Code.
a. building
b. structure
c. none of the above
d. both a & b

---

109. 690.10 Stand-Alone Systems [PV Systems). (E) Back-fed Circuit Breakers. Plug-in type back-fed circuit breakers connected to a stand-alone inverter output in either stand alone or utility-interactive systems shall be _____ in accordance with 408.36(D).
a. secured
b. marked
c. labeled

d. all of the above

---

110. 690.10 Stand-Alone Systems [PV Systems). (E) Back-fed Circuit Breakers. Circuit breakers that are marked "line" and "load" shall not be backfed.

a. true
b. false

---

111. 690.11 Arc-Fault Circuit Protection (DC). PV systems with dc source circuits, dc output circuits, or both on or penetrating a building operating at a PV system maximum system voltage of ____ volts or greater shall be protected by a listed (DC) arc-fault circuit interrupter, PV type, or other system components listed to provide equivalent protection.

a. 60
b. 80
c. 120
d. 240

---

112. 690.11 Arc-Fault Circuit Protection (DC). The PV arc-fault protection means shall comply with the following requirements:

a. The system shall detect and interrupt arcing faults resulting from a failure in the intended continuity of a conductor, connection, module, or other system component in the dc PV source and output circuits.
b. The system shall require that the disabled or disconnected equipment be manually restarted.
c. The system shall have an annunciator that provides a visual indication that the circuit interrupter has operated. This indication shall not reset automatically.
d. all of the above

---

113. 690.11 Arc-Fault Circuit Protection (DC). The PV arc-fault protection means shall comply with the “system shall disable or disconnect one of the following:

a. Inverters or charge controllers connected to the fault circuit when the fault is detected
b. The system components within the arcing circuit
c. neither a or b
d. both a & b

---

114. 690.43 Equipment Grounding (Solar Photovoltaic Systems). Equipment grounding conductors and devices shall comply with:

a. Equipment Grounding Required. Exposed non-current-carry ing metal parts of PV module frames, electrical equipment, and conductor enclosures shall be grounded in accordance with 250.134 or 250.136(A) regardless of voltage.
b. Equipment Grounding Conductor Required. An equipment grounding conductor between a PV array and other equipment shall be required in accordance with 250.110.
c. Structure as Equipment Grounding Conductor. Devices listed and identified for grounding the metallic frames of PV modules or other equipment shall be permitted to bond the exposed metal surfaces or other equipment to mounting structures. Metallic mounting structures, other than building steel, used for grounding purposes shall be identified as equipment-grounding conductors or shall have identified bonding jumpers

or devices connected between the separate metallic sections and shall be bonded to the grounding system.
d. all of the above

---

115. 690.43 Equipment Grounding (Solar Photovoltaic Systems). Equipment grounding conductors and devices shall comply with:
a. PV Mounting Systems and Devices. Devices and systems used for mounting PV modules that are also used to provide grounding of the module frames shall be identified for the purpose of grounding PV modules.
b. Adjacent Modules. Devices identified and listed for bonding the metallic frames of PV modules shall be permitted to bond the exposed metallic frames of PV modules to the metallic frames of adjacent PV modules.
c. All Conductors Together. Equipment grounding conductors for the PV array and structure (where installed) shall be contained within the same raceway or cable, or otherwise run with the PV array circuit conductors when those circuit conductors leave the vicinity of the PV array.
d. all of the above

---

116. 690.47 Grounding Electrode System (Solar Photovoltaic Systems). (C) Systems with Alternating-Current and Direct-Current Grounding Requirements. Photovoltaic systems having dc circuits and ac circuits with no direct connection between the dc grounded conductor and ac grounded conductor shall have a ____ grounding system.
a. dc
b. ac
c. ac/dc
d. all of the above

---

117. 690.47 Grounding Electrode System (Solar Photovoltaic Systems). The dc grounding system shall be bonded to the ac grounding system by:
a. Separate Direct-Current Grounding Electrode System Bonded to the ac Grounding Electrode System
b. Common Direct-Current and Alternating-Current Grounding Electrode.
c. Combined Direct-Current Grounding-Electrode Conductor and Alternating-Current Equipment-Grounding Conductor.
d. all of the above

---

118. 690.47 Grounding Electrode System (Solar Photovoltaic Systems). This section shall not apply to ac PV modules.
a. true
b. false

---

119. Article 694 Small Wind Electric Systems. A new article was added to cover the requirements for _____ wind electric systems.
a. all sizes of
b. medium sizes of
c. neither a, b, or d
d. small sizes of

---

120. 695.4 Continuity of Power (Fire Pumps). Circuits that supply electric motor-driven fire pumps shall be supervised from inadvertent disconnection by:

a. Direct Connection
b. Connection through disconnecting means and overcurrent device
c. neither a or b
d. both a & b

---

121. 695.6 Power Wiring (Fire Pumps) Power circuits and wiring methods shall comply with the requirements in 695.6 _____

a. A through E
b. A through J
c. neither a or b
d. both a & b

---

122. 700.2 Definitions (Emergency Systems). Relay. Automatic Load Control. A device used to energize _____ equipment from an emergency supply in the event of loss of the normal supply, and to de-energize or return the equipment to a normal status when the normal supply is restored.

a. switched
b. normally-off lighting
c. neither a or b
d. both a & b

---

123. 700.2 Definitions (Emergency Systems). Relay, Automatic Load Control. Informational Note: For requirements covering automatic load control relays, see_____. Emergency Lighting and Power Equipment.

a. ANSI/UL 924
b. NEC 700.22
c. neither a or b
d. both a & b

---

124. 700.24 Automatic Load Control Relay. If an emergency lighting load is automatically energized upon loss of the normal supply, _____ automatic load control relay shall be permitted to energize the load.

a. an approved
b. an identified
c. a listed
d. all of the above

---

125. 700.24 Automatic Load Control Relay. The load control relay shall not be used as the _____.

a. disconnect
b. transfer equipment
c. controller
d. both a & b

---

126. 700.10 Wiring, Emergency System. (D) Fire Protection. Emergency systems shall meet the additional requirements in 700.10(D)(1) through (D)(3) in assembly occupancies

_____ with any of the following occupancy classes: assembly, educational, residential, detention and correctional, business, and mercantile.

a. for not less than 1000 persons
b. in buildings above 23 m (75 ft) in height
c. none of the above
d. both a & b

---

127. 700.10 Wiring, Emergency System. (D) Fire Protection. (1) Feeder-Circuit Wiring. Feeder-circuit wiring shall meet the following condition:

a. (1) Be installed in spaces or areas that are fully protected by an approved automatic fire suppression system
b. Be a listed electrical circuit protective system with a minimum 2-hour fire rating smaller than 15 kw
c. none of the above
d. both a & b

---

128. 700.10 Wiring, Emergency System. (D) Fire Protection. (1) Feeder-Circuit Wiring. Feeder-circuit wiring shall meet the following condition:

a. Be protected by a listed thermal barrier system for electrical system components with a minimum 2-hour fire rating
b. Be protected by a listed fire-rated assembly that has a minimum fire rating of 2 hours and contains only emergency wiring circuits.
c. Be encased in a minimum of 50 mm (2 in.) of concrete
d. all of the above

---

129. 700.10 Wiring, Emergency System. (D) Fire Protection. The new revision increases the fire raring time from 2 hours to 1 hour for emergency system wiring.

a. true
b. false

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130. 700.12 General Requirements, Current (Emergency Systems — Sources of Power) (F) Unit Equipment. Individual unit equipment for emergency illumination shall consist of the following:

a. A rechargeable battery
b. A battery charging means
c. none of the above
d. both a & b

---

131. 700.12 General Requirements, Current (Emergency Systems — Sources of Power) (F) Unit Equipment. Individual unit equipment for emergency illumination shall consist of the following:

a. Provisions for one or more lamps mounted on the equipment, or shall be permitted to have terminals for remote lamps, or both
b. A relaying device arranged to energize the lamps automatically upon failure of the supply to the unit equipment
c. none of the above
d. both a & b

---

132. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). Emergency lighting for the exterior of an exit door is permitted to be supplied by the unit equipment serving the area immediately inside the exit door.

a. true
b. false

---

133. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). (F) Unit Equipment. Individual unit equipment for emergency illumination shall consist of the following:

a. A rechargeable battery
b. A battery charging means
c. none of the above
d. both a & b

---

134. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). (F) Unit Equipment. Individual unit equipment for emergency illumination shall consist of the following:

a. Provisions for one or more lamps mounted on the equipment, or shall be permitted to have terminals for remote lamps, or both
b. A relaying device arranged to energize the lamps automatically upon failure of the supply to the unit equipment
c. none of the above
d. both a & b

---

135. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). The batteries shall be of suitable rating and capacity to supply and maintain at not less than ____ percent of the nominal battery voltage for the total lamp load associated with the unit.

a. 87 1/2
b. 87
c. 90
d. both a & b

---

136. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). The batteries shall be of a suitable rating and capacity to supply and maintain the lamp load associated with the unit for a period of at least ____.

a. 90 min
b. 1 ¾ hr
c. 120 min
d. 60 min

---

137. 700.12 General Requirements, Current (Emergency Systems — Sources of Power).The batteries shall be of suitable rating and capacity to supply and maintain the unit equipment with not less than _____ percent of the initial emergency illumination for the required period of 1 ½ hr.

a. 87 1/2
b. 87
c. 60
d. 90

---

138. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). Storage batteries, whether of the _____ type shall be designed and constructed to meet the requirements of emergency service.

a. acid
b. alkali
c. ni-cad
d. both a & b

---

139. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). Unit equipment shall be permanently fixed in place (i.e., not portable) and shall have all wiring to each unit installed in accordance with the requirements of any of the wiring methods in Chapter 3. Flexible cord-and-plug connection shall be permitted, provided that the cord does not exceed _____ in length.

a. 36”
b. 3’
c. 30”
d. both a & b

---

140. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). The branch circuit feeding the unit equipment shall be the same branch circuit as that serving the normal lighting in the area and connected _____ any local switches.

a. after
b. ahead of
c. load side of
d. both a & b

---

141. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). The branch circuit that feeds unit equipment shall be clearly identified at the_____.

a. light switches
b. distribution panel
c. none of the above
d. both a & b

---

142. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). Emergency luminaires that obtain power from unit equipment and are not part of the unit equipment shall not be wired to the unit equipment as required by 700.10.

a. true
b. false

---

143. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). Exception No. 1: In a separate and uninterrupted area supplied by a minimum of _____ normal lighting circuits, a separate branch circuit for unit equipment shall be permitted.

a. 2
b. 1
c. 3
d. all of the above

---

144. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). A separate branch circuit for unit equipment shall be permitted if it originates from the same panelboard as that of the normal lighting circuits and is provided with a _____.

a. lock-on feature
b. lock-off feature
c. lock-on/off feature
d. both a & b

---

145. 700.12 General Requirements, Current (Emergency Systems — Sources of Power). Exception No, 2: Remote heads providing lighting (or the exterior of an exit door shall be permitted to be supplied by the unit equipment serving the area immediately inside the_____.

a. exit door
b. exit room
c. exit foyer
d. both a & b

---

146. 700.27 Coordination (Emergency Systems). Emergency system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices. Exception: Selective coordination shall not be required between two overcurrent devices located in series only if the loads are connected in parallel with the upstream device.

a. true
b. false

---

147. 700.27 Coordination (Emergency Systems). Selective coordination of emergency systems is not required when no additional loads are affected by the opening of the second upstream device.

a. true
b. false

---

148. 701.6 Signals (Legally Required Standby Systems). Ground-fault indication for legally required standby systems is now required by _____.

a. 701.6(D)
b. 701.17
c. none of the above
d. both a & b

---

149. 701.6 Signals (Legally Required Standby Systems). Audible and visual signal devices shall be provided, where practicable, for the purposes described as:

a. Derangement. To indicate derangement of the standby source
b. Carrying Load. To indicate that the standby source is carrying load
c. Not Functioning. To indicate that the battery charger is not functioning
d. all of the above

---

150. 701.6 Signals (Legally Required Standby Systems). Audible and visual signal devices shall be provided, where practicable, for the purposes described as: (D) Ground Fault. To indicate a ground fault in solidly grounded wye legally required standby systems of more than 150 volts to ground and circuit-protective devices rated 1000 amperes or more. The sensor for the ground-fault signal devices shall be located at or ahead of the main system

disconnecting means for the legally required standby source, and the maximum setting of the signal devices shall be for a ground-fault current of _____.

a. 1200 amperes
b. 240 volts
c. none of the above
d. both a & b

---

151. 701.6 Signals (Legally Required Standby Systems). 701.6 Signals (Legally Required Standby Systems). Audible and visual signal devices shall be provided, where practicable, for the purposes described as: (D) Ground Fault. _____ on the course of action to be taken in event of indicated ground fault shall be located at or near the sensor location.

a. A listing
b. Instructions
c. none of the above
d. both a & b

---

152. 701.6 Signals (Legally Required Standby Systems). Audible and visual signal devices shall be provided for legally required standby systems to indicate such things as derangement of the standby source, load carrying, battery charger not functioning, and ground fault indication.

a. true
b. false

---

153. 708.10 Feeder and Branch Circuit Wiring. “COPS” represent:

a. Designated critical operations area
b. Critical Operations Power Systems
c. both a & b
d. none of the above

---

154. 708.10 Feeder and Branch Circuit Wiring. Receptacle Identification: In a building in which COPS are present with other types of power systems, the cover plates for the receptacles or the receptacles themselves supplied from the COPS shall have a _____ so as to be readily identifiable

a. distinctive color
b. marking
c. both a & b
d. none of the above

---

155. 708.10 Feeder and Branch Circuit Wiring. “DCOA” represents:

a. Designated critical operations area
b. Critical Operations Power Systems
c. both a & b
d. none of the above

---

156. 708.10 Feeder and Branch Circuit Wiring. Exception: If the COPS supplies power to a DCOA that is a stand-alone building, receptacle cover plates or the receptacles themselves shall not be required to have a _____ marking.

a. removable
b. distinctive

c. color coded
d. all of the above

---

157. 708.14 Wiring of HVAC, Fire Alarm, Security, Emergency Communications, and Signaling Systems Revisions added to 708.14 to clarify which HVAC, fire alarm, security, emergency communications, and signaling systems cable types at critical operations power system (COPS) facilities require shielded twisted pairs, and which require a _____.

a. riser ratings
b. smoke rating
c. fire rating
d. all of the above

---

158. 708.14 Wiring of HVAC, Fire Alarm, Security, Emergency Communications, and Signaling Systems [Critical Operations Power Systems (COPS)]. All conductors or cables shall be installed using any of the metal wiring methods permitted by 708.10(C)(1) and in addition shall comply with:

a. All cables for fire alarm, security, signal systems, and emergency communications shall be shielded twisted pair cables.
b. Shields of cables for fire alarm, security, signal systems, and emergency communications shall be continuous.
c. Optical fiber cables shall be used for connections betv/een two or more buildings on the property and under single management.
d. all of the above

---

159. 708.14 Wiring of HVAC, Fire Alarm, Security, Emergency Communications, and Signaling Systems [Critical Operations Power Systems (COPS)]. All conductors or cables shall be installed using any of the metal wiring methods permitted by 708.10(C)(1) and in addition shall comply with:

a. A listed primary protector shall be provided on alt communications circuits. Listed secondary protectors shall be provided at the terminals of the communication circuits.
b. Conductors for all control circuits rated above 50V shall be rated not less than 600V.
c. Communications, fire alarm, and signaling circuits shall use relays with contact ratings that exceed circuit voltage and current ratings in the controlled circuit.
d. all of the above

---

160. 708.14 Wiring of HVAC, Fire Alarm, Security, Emergency Communications, and Signaling Systems [Critical Operations Power Systems (COPS)]. All conductors or cables shall be installed using any of the metal wiring methods permitted by 708.10(C)(1) and in addition shall comply with:

a. All cables for fire alarm, security, and signaling systems shall be riser rated and shall be a listed 2-hour electrical circuit protective system. Riser emergency communications cable shall be Type CMR-CI
b. Shall be a listed 2-hour electrical circuit protective system.
c. Control, monitoring, and power wiring to HVAC systems shall be a listed 2-hour electrical circuit protective system.
d. all of the above

---

161. 725.3(1) Vertical Support for Fire Rated Cables and Conductors (Class 1, 2, and 3 Circuits). New requirements added to 725.3 which now require _____ support of circuit-integrity cables and similar rated conductors.

a. vertical
b. horizontal
c. lateral
d. both a & b

---

162. 725.3 Other Articles (I) Vertical Support for Fire Rated Cables and Conductors. Vertical installations of circuit integrity (CI) cables and conductors installed in a _____ of electrical protective systems shall be installed in accordance with 300.19..

a. raceway
b. assembly
c. cables
d. all of the above

---

163. 760.3 Other Articles (Fire Alarm Systems). (I) Vertical Support for Fire Rated Cables and Conductors. Vertical installations of circuit integrity (CI) cables and conductors installed in a raceway or conductors and cables of electrical protective systems shall be installed in accordance with_____.

a. the UL listing
b. 300.19
c. neither a or b
d. both a & b

---

164. 760.3 Other Articles (Fire Alarm Systems) (K) Bushing. A bushing shall be installed where cables emerge from raceway used for _____ in accordance with 300.15(C).

a. mechanical support
b. protection
c. none of the above
d. both a & b

---

165. 760.3 Other Articles (Fire Alarm Systems). (J) Number and Size of Cables and Conductors in Raceway. Installations shall comply with _____.

a. 300.17
b. 300.18
c. neither a or b
d. both a & b

---

166. 760.41 NPLFA Circuit Power Source Requirements. Power source for non-power-limited fire alarm (NPLFA) circuits was revised to address _____ requirements for the fire alarm equipment.

a. new marking
b. dedicated branch circuit
c. identification
d. all of the above

---

167. 760.41 NPLFA Circuit Power Source Requirements. (A) Power Source. The power source of non-power-limited fire alarm circuits shall comply with Chapters 1 through 4, and the output voltage shall be not more than_____, nominal.

a. 600 volts
b. 480 Volts
c. 1000 amperes
d. all of the above

---

168. 760.41 NPLFA Circuit Power Source Requirements. (A) Power Source. Fire alarm circuit disconnect shall be permitted to be secured in the "on" position.

a. true
b. false

---

169. 760.41 NPLFA Circuit Power Source Requirements. (B) Branch Circuit. The branch circuit supplying the fire alarm equipment(s) shall supply no other loads.

a. true
b. false

---

170. 760.41 NPLFA Circuit Power Source Requirements. (B) Branch Circuit. The location of the branch circuit overcurrent protective device shall be permanently_____ at the fire alarm control unit.

a. labeled
b. marked
c. identified
d. all of the above

---

171. 760.41 NPLFA Circuit Power Source Requirements. (B) Branch Circuit. The circuit disconnecting means shall _____.

a. have red identification
b. be accessible only to qualified personnel
c. be identified as 'FIRE ALARM CIRCUIT."
d. all of the above

---

172. 760.41 NPLFA Circuit Power Source Requirements. (B) Branch Circuit. The red identification shall not _____.

a. damage the overcurrent protective devices
b. obscure the manufacturers markings
c. none of the above
d. both a & b

---

173. 760.41 NPLFA Circuit Power Source Requirements. (B) Branch Circuit. This branch circuit shall not be supplied through_____.

a. ground-fault circuit interrupters
b. arc-fault circuit interrupters
c. none of the above
d. both a & b

---

174. 770.2 Definitions (Optical Fiber Cables and Raceways). Cable Routing Assembly. A single channel or connected multiple channels, as well as associated fittings, forming a structural system that is used to _____ high densities of wires and cables.

a. support
b. route
c. protect
d. all of the above

---

175. 770.2 Definitions (Optical Fiber Cables and Raceways). Cable Routing Assembly are typically communications wires and cables, optical fiber and data (Class 2 and Class 3) cables associated with _____.

a. information technology
b. communications equipment
c. none of the above
d. both a & b

---

176. 770.100 Entrance Cable Bonding and Grounding (Optical Fiber Cables and Raceways) Where required, the non-current-carrying metallic members of optical fiber cables entering buildings shall be _____.

a. bonded
b. grounded
c. none of the above
d. both a & b

---

177. 770.100 Entrance Cable Bonding and Grounding (Optical Fiber Cables and Raceways) (1) In Buildings or Structures with an Intersystem Bonding Termination. If the building or structure served has an intersystem bonding termination as required by 250.94, the _____ shall be connected to the intersystem bonding termination.

a. bonding conductor
b. grounding electrode conductor
c. none of the above
d. both a & b

---

178. 800.100 Cable and Primary Protector Bonding and Grounding [Communications Circuits). The primary protector and the metallic member(s) of the cable sheath shall be _____ as specified in 800.100(A) through (D).

a. bonded
b. grounded
c. neither a or b
d. both a & b

---

179. 800.100 Cable and Primary Protector Bonding and Grounding [Communications Circuits). (A) Bonding Conductor or Grounding Electrode Conductor. (1) Insulation. The bonding conductor or grounding electrode conductor shall be listed and shall be permitted to be _____.

a. insulated
b. covered
c. bare
d. all of the above

---

180. 820.100 Cable Bonding and Grounding {Community Antenna Television and Radio Distribution Systems) The shield of the coaxial cable shall be bonded or grounded as specified in 820.100(A) through (D). Exception: For communication systems using coaxial cable confined within the premises and isolated from outside cable plant, the shield shall be permitted to be grounded by a connection to an equipment grounding conductor as described in 250.118. Connecting to an equipment grounding conductor through a _____ using a dedicated grounding conductor and permanently connected listed device shall be permitted. Use of a cord and plug for the connection to an equipment grounding conductor shall not be permitted.

a. clamp
b. jumper
c. grounded receptacle
d. all of the above

---

181. 830.44 Overhead (Aerial) Cables {Network-Powered Broadband Communications Systems). (F) Between Buildings. Network-powered broadband communications cables extending between buildings or structures and also the supports or attachment fixtures shall be identified as suitable for outdoor aerial applications and shall have _____ to withstand the loads to which they may be subjected.

a. sufficient strength
b. the correct covering
c. a stranded wire
d. all of the above

---

182. A new Article _____ was added to address premises-powered broadband communication systems.

a. 841
b. 840
c. 842
d. all of the above

---

183. Chapter 9 Tables — Notes to Tables (5) For conductors not included in Chapter 9 such as multi-conductor cables and optical fiber cables, the _____ shall be used.

a. actual dimensions
b. circumference
c. diameter
d. all of the above

2011 NEC Code Updates Part 5-Quiz Answer Sheet

1	a	b	c	d	41	a	b	c	d	81	a	b	c	d
2	a	b	c	d	42	a	b	c	d	82	a	b	c	d
3	a	b	c	d	43	a	b	c	d	83	a	b	c	d
4	a	b	c	d	44	a	b	c	d	84	a	b	c	d
5	a	b	c	d	45	a	b	c	d	85	a	b	c	d
6	a	b	c	d	46	a	b	c	d	86	a	b	c	d
7	a	b	c	d	47	a	b	c	d	87	a	b	c	d
8	a	b	c	d	48	a	b	c	d	88	a	b	c	d
9	a	b	c	d	49	a	b	c	d	89	a	b	c	d
10	a	b	c	d	50	a	b	c	d	90	a	b	c	d
11	a	b	c	d	51	a	b	c	d	91	a	b	c	d
12	a	b	c	d	52	a	b	c	d	92	a	b	c	d
13	a	b	c	d	53	a	b	c	d	93	a	b	c	d
14	a	b	c	d	54	a	b	c	d	94	a	b	c	d
15	a	b	c	d	55	a	b	c	d	95	a	b	c	d
16	a	b	c	d	56	a	b	c	d	96	a	b	c	d
17	a	b	c	d	57	a	b	c	d	97	a	b	c	d
18	a	b	c	d	58	a	b	c	d	98	a	b	c	d
19	a	b	c	d	59	a	b	c	d	99	a	b	c	d
20	a	b	c	d	60	a	b	c	d	100	a	b	c	d
21	a	b	c	d	61	a	b	c	d	101	a	b	c	d
22	a	b	c	d	62	a	b	c	d	102	a	b	c	d
23	a	b	c	d	63	a	b	c	d	103	a	b	c	d
24	a	b	c	d	64	a	b	c	d	104	a	b	c	d
25	a	b	c	d	65	a	b	c	d	105	a	b	c	d
26	a	b	c	d	66	a	b	c	d	106	a	b	c	d
27	a	b	c	d	67	a	b	c	d	107	a	b	c	d
28	a	b	c	d	68	a	b	c	d	108	a	b	c	d
29	a	b	c	d	69	a	b	c	d	109	a	b	c	d
30	a	b	c	d	70	a	b	c	d	110	a	b	c	d
31	a	b	c	d	71	a	b	c	d	111	a	b	c	d
32	a	b	c	d	72	a	b	c	d	112	a	b	c	d
33	a	b	c	d	73	a	b	c	d	113	a	b	c	d
34	a	b	c	d	74	a	b	c	d	114	a	b	c	d
35	a	b	c	d	75	a	b	c	d	115	a	b	c	d
36	a	b	c	d	76	a	b	c	d	116	a	b	c	d
37	a	b	c	d	77	a	b	c	d	117	a	b	c	d
38	a	b	c	d	78	a	b	c	d	118	a	b	c	d
39	a	b	c	d	79	a	b	c	d	119	a	b	c	d
40	a	b	c	d	80	a	b	c	d	120	a	b	c	d

2011 NEC Code Updates Part 5-Quiz Answer Sheet

121	a	b	c	d	142	a	b	c	d	163	a	b	c	d
122	a	b	c	d	143	a	b	c	d	164	a	b	c	d
123	a	b	c	d	144	a	b	c	d	165	a	b	c	d
124	a	b	c	d	145	a	b	c	d	166	a	b	c	d
125	a	b	c	d	146	a	b	c	d	167	a	b	c	d
126	a	b	c	d	147	a	b	c	d	168	a	b	c	d
127	a	b	c	d	148	a	b	c	d	169	a	b	c	d
128	a	b	c	d	149	a	b	c	d	170	a	b	c	d
129	a	b	c	d	150	a	b	c	d	171	a	b	c	d
130	a	b	c	d	151	a	b	c	d	172	a	b	c	d
131	a	b	c	d	152	a	b	c	d	173	a	b	c	d
132	a	b	c	d	153	a	b	c	d	174	a	b	c	d
133	a	b	c	d	154	a	b	c	d	175	a	b	c	d
134	a	b	c	d	155	a	b	c	d	176	a	b	c	d
135	a	b	c	d	156	a	b	c	d	177	a	b	c	d
136	a	b	c	d	157	a	b	c	d	178	a	b	c	d
137	a	b	c	d	158	a	b	c	d	179	a	b	c	d
138	a	b	c	d	159	a	b	c	d	180	a	b	c	d
139	a	b	c	d	160	a	b	c	d	181	a	b	c	d
140	a	b	c	d	161	a	b	c	d	182	a	b	c	d
141	a	b	c	d	162	a	b	c	d	183	a	b	c	d

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