Instructions: **Fee $35**

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 2014 & 2011 NEC as your reference materials & search for the grey code change areas.
5. All questions are listed in straight order (not random order) throughout the complete quiz.

Course: 16930 2014 NEC Changes PART 2

This course is valid for these credentials:

Credential Description	Cred Code	Credit Hours
Registered/Beginner Electrician	BE	4.0
Commercial Electrical Inspector	CEI	4.0
Industrial Journeyman Electrician	IJE	4.0
Journeyman Electrician	JE	4.0
Master Electrician	ME	4.0
Residential Journeyman Electrician	RJE	4.0
Residential Master Electrician	RME	4.0
UDC-Electrical Inspector	UEI	4.0

2014 NEC Changes Part 2

1. 210.5 Identification for Branch Circuits. (C)(1) _____. Where the premises wiring system has branch circuits supplied from more than one nominal voltage system, each ungrounded conductor of a branch circuit shall lie identified by phase or line and system at all termination, connection, and splice points
    a. Application
    b. Branch Circuits Supplied From More Than One Nominal Voltage System
    c. both a & b
    d. none of the above
2. 210.5(C)(1) Where the premises wiring system has branch circuits supplied from more than one nominal voltage system, each ungrounded conductor of a branch circuit shall lie identified by phase or line and system at all termination, connection, and splice points in compliance with _____.
    a. 200.5(0(1)(a)
    b. 200.5(0(1)(b)
    c. 210.5(0(1)(a) and (b)
    d. both a & b
3. 210.5(C)(2) Branch Circuits Supplied From Direct Current Systems. Where a branch circuit is supplied from a dc system operating at more than 50 volts, each ungrounded conductor of _____ shall be identified by polarity at all termination, connection, and splice points by marking tape, tagging, or other approved means.
    a. 6 AWG
    b. smaller than 4 AWG
    c. 4 AWG or larger
    d. none of the above
4. Each ungrounded conductor of 6 AWG or smaller shall be identified by polarity at all _____ in compliance with 210.5(C)(2)(a) and (b).
    a. terminations
    b. connections
    c. splice points
    d. all of the above

5. The identification methods utilized for conductors originating within each branch-circuit panelboard or similar branch-circuit distribution equipment shall be documented in a manner that is readily available or shall be permanently posted at each _____.
   a. branch-circuit panelboard
   b. similar branch-circuit distribution equipment
   c. both a & b
   d. none of the above

6. 210.5(C)(2) (a) Positive Polarity, Sizes 6 AWC or Smaller, Where the positive polarity of a dc system does not serve as the connection point for the grounded conductor, each positive ungrounded conductor shall be identified by one of the following means:
   a. A continuous red outer finish.
   b. A continuous red stripe durably marked along the conductor's entire length on insulation of a color other than green, white, gray, or black.
   c. A continuous red stripe durably marked along the conductor's entire length on insulation of a color including than green, white, gray, or black.
   d. both a & b

7. 210.5(C)(2)(3) Imprinted minus signs "--" or the word _____durably marked on insulation of a color other than green, white, gray, or red.
   a. "NEGATIVE"
   b. "NEG"
   c. both a & b
   d. none of the above

8. Repeated the above requirements at intervals not exceeding _____in accordance with 310.120(B).9
   a. 610 mm
   b. 24 ft.
   c. both a & b
   d. none of the above

9. 210.8 Ground-Fault Circuit-Interrupter Protection for Personnel Ground-fault circuit _____ for personnel shall be provided as required in 210.81A) through (C).
   a. interrupter protection
   b. interruption
   c. both a & b
   d. none of the above

10. 210.8 The ground-fault circuit-interrupter may should be installed in a readily accessible location.
   a. true
   b. false

11. (A) Dwelling Units. All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified in 210.8(A)(1) through (10) shall have ground-fault circuit-interrupter protection for personnel. (9) Bathtubs or Shower Stalls where receptacles are installed within ____ of the outside edge of the bathtub or shower stall.
   a. 1.8 m
   b. 6 inches
   c. both a & b
   d. none of the above

12. (A) Dwelling Units. All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified in 210.8(A)(1) through ___ shall have ground-fault circuit-interrupter protection.
   a. 7
   b. 8
   c. 9
   d. 10

13. (A) Dwelling Units. All 125-volt, single-phase, 15- and 20-ampere receptacles installed within 6 ft. of the _____ edge of the bathtub or shower stall shall have ground-fault circuit-interrupter protection.
   a. inside

b. center
c. outside
d. none of the above

14. (A) Dwelling Units. All 125-volt, single-phase, 15- and 20-ampere receptacles installed in laundry areas without sinks shall have ground-fault circuit-interrupter protection.
a. true
b. false

15. (B) Other Than Dwelling Units. All 125-volt, single-phase, 15-and 20-ampere receptacles installed in the locations specified in 210.8(B)(1) through ___ shall have ground-fault circuit-interrupter protection for personnel.
a. 7
b. 8
c. 9
d. 10

16. 210.8(B)(8) _____ shall have ground-fault circuit-interrupter protection for personnel.
a. Garages
b. Service bays
c. Similar areas
d. all of the above

17. 210.8(B)(8) _____ are not required to have ground-fault circuit-interrupter protection for personnel.
a. Vehicle exhibition halls
b. Vehicle showrooms
c. both a & b
d. none of the above

18. 210.8(D) will now require GFCI protection for all outlets that supply dishwashers installed in dwelling units. This would include a _____ for a dishwasher.
a. receptacle outlet
b. direct-wired outlet
c. both a & b
d. none of the above

19. 210.12 will now require all AFCI devices mandated by 210.12 to be installed in a readily accessible _____.
a. position
b. location
c. situation
d. none of the above

20. 210.12 (A) Dwelling units. The list of areas in a dwelling unit that will now be required to be provided with AFCI protection was expanded to include _____ for all 15- and 20-ampere branch circuits.
a. kitchens
b. laundry areas
c. both a & b
d. none of the above

21. 210.12(A) Dwelling units. The list of areas in a dwelling unit that will now be required to be provided with AFCI protection was expanded to include _____ for all 15- and 20-ampere branch circuits.
a. garage area
b. bathroom areas
c. both a & b
d. none of the above

22. 210.12 (A) Dwelling units. All 120-volt, single phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in dwelling unit kitchens, family rooms, dining rooms, living rooms, parlors,

libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas shall he protected by _____.

a. A listed combination type arc-fault circuit interrupter, installed to provide protection of the entire branch circuit.
b. An identified branch/feeder type AFCI installed at the end of the branch circuit in combination with a identified outlet branch circuit type arc-fault circuit interrupter installed at all of the outlet boxes on the branch circuit.
c. both a & b
d. none of the above

23. 210.12 (A) Dwelling units. All 120-volt, single phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in dwelling unit kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas shall he protected by 210.12(A)(3) a listed supplemental arc protection circuit breaker installed at the origin of the branch circuit in combination with a listed outlet branch circuit type arc-fault circuit interrupter installed at the first outlet box on the branch circuit where all of the following conditions are met:

a. The branch circuit wiring shall be continuous from the branch circuit overcurrent device to the outlet branch circuit arc-fault circuit interrupter.
b. The maximum length of the branch circuit wiring from the branch circuit overcurrent device to the first outlet shall not exceed 40 ft. for a 12 AWC or 80 ft. for a 14 AWG conductor.
c. All outlet boxes in the branch circuit shall be marked to indicate all outlets are protected.
d. all of the above

24. 210.12 (A)(4) Dwelling units. A listed outlet branch circuit type arc-fault circuit interrupter installed at the first outlet on the branch circuit in combination with a listed branch circuit overcurrent protective device where all of the following conditions are met:

a. The branch circuit wiring shall be continuous from the branch circuit overcurrent device to the outlet branch circuit arc-fault circuit interrupter and the first outlet box in the branch circuit shall be marked to indicate that it is the first outlet of the circuit.
b. The maximum length of the branch circuit wiring from the branch circuit overcurrent device to the first outlet shall not exceed 50 ft. for a 14 AWG or 70 ft. for a 12 AWG conductor.
c. The combination of the branch circuit overcurrent device and outlet branch circuit AFCI is identified as meeting the requirements for a "System Combination" type AFCI and is listed as such.
d. all of the above

25. 210.12 (A)(5) If RMC, IMC, EMT, Type MC, or steel armored Typo AC cables meeting the requirements of 250.118, _____ are installed for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a listed outlet branch-circuit type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.

a. metal or nonmetallic wireways
b. metal outlet and junction boxes
c. metal or nonmetallic auxiliary gutters
d. all of the above

26. 210.12 (A)(6) Where a listed metal or nonmetallic conduit or tubing or _____ is encased in not less than 50 mm (2 in.) of concrete for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a listed outlet branch circuit type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.

a. Type MC cable
b. Type AC cable
c. Type BC cable
d. all of the above

27. 210.12 (A) Informational Note No. 1: For information on types of _____ circuit interrupters, see UL 1699-1999, Standard for Arc-Fault Circuit-Interrupters.

a. combination type and branch/feeder type arc-fault

b. outlet branch circuit type arc-fault
c. system combination AFCIs
d. all of the above

28. 210.12 (A) Informational Note No. 1: For information on _____circuit interrupters, sec UL Subject 1699A Outline of Investigation for Outlet Branch Circuit Arc-Fault Circuit-Interrupters.
a. combination type and branch/feeder type arc-fault
b. outlet branch circuit type arc-fault
c. system combination AFCIs
d. none of the above

29. 210.12 (A) Informational Note No. 1: For information on_____, see UL Subject 1699C Outline of Investigation for System Combination Arc-Fault Circuit Interrupters.
a. combination type and branch/feeder type arc-fault
b. outlet branch circuit type arc-fault
c. system combination AFCIs
d. none of the above

30. 210.12(B) Exception. Dwelling unit existing branch circuit extensions can be extended up to ____ ft. without AFCI protection.
a. 3
b. 4
c. 6
d. 8

31. Referring to question 30 above, a dwelling unit existing branch circuit extension is allowed to have ____ additional outlets or devices arc installed.
a. 0
b. 1
c. 2
d. unlimited

32. 210.12(C) requires all 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets installed in dormitory unit _____ to be provided with AFCI protection.
a. bedrooms
b. living rooms
c. hallways,
d. all of the above

33. 210.12(C) requires all 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets installed in dormitory unit _____ to be provided with AFCI protection.
a. closets
b. shower rooms
c. bathrooms
d. all of the above

34. 210.13 A new section for "Ground-Fault Protection of Equipment" was added to require each branch-circuit disconnect rated _____ amperes or more.
a. 400
b. 800
c. 1000
d. 1200

35. Continuing question 30 above, and installed on solidly grounded wye electrical systems of more than 150 volts to ground, but not exceeding 600 volts phase-lo-phase to be provided with GFP of equipment in accordance with the provisions of _____.
a. 230.93
b. 230.94
c. 230.95
d. none of the above

36. 210.13 _____ The provisions of this section shall not apply to a disconnecting means for a continuous industrial process where a non-orderly shutdown will introduce additional or increased

hazards.

a. Exception No, 1
b. Exception No, 2
c. Exception No, 3
d. Exception No, 4

37. 210.13 _____The provisions of this section shall not apply if ground-fault protection of equipment is provided on the supply side of the branch circuit and on the load side of any transformer supplying the branch circuit

a. Exception No, 1
b. Exception No, 2
c. Exception No, 3
d. Exception No, 4

38. 210.17 Electric Vehicle Branch Circuit Outlet(s) installed for the purpose of charging electric vehicles shall be supplied by a _____ branch circuit.

a. multi
b. isolated
c. separate
d. all of the above

39. 210.17 Electric Vehicle Branch Circuit Outlet(s) installed for the purpose of charging electric vehicles shall have _____ outlets.

a. 1 extra
b. 2 extra
c. 0 extra
d. none of the above

40. 210.52 (1) Dwelling Unit Receptacle Outlets. (1) One-Family and Two-Family Dwellings. For a one-family dwelling and each unit of a two family dwelling that is at grade level, at least one receptacle outlet _____and not more than 6 1/2 ft. above grade level shall be installed at the front and back of the dwelling.

a. readily accessible while standing at grade
b. readily accessible from below grade
c. readily accessible from grade
d. none of the above

41. 210.52 (2) Multifamily Dwellings. For each dwelling unit of a multifamily dwelling where the dwelling unit is located at grade level and provided with individual exterior entrance/egress, at least one receptacle outlet _____.

a. readily accessible while standing at grade
b. readily accessible from grade level
c. readily accessible from grade
d all of the above

42. 210.52 (E) (3) Balconies, Decks and Porches. Balconies, decks and porches that _____are accessible from inside the dwelling unit shall have at least one receptacle outlet.

a. are attached to the building unit and
b. are attached to the structure unit and
c. are attached to the dwelling unit and
d. none of the above

43. 210.52 (E) (3) Balconies, Decks and Porches. Balconies, decks and porches shall have at least one receptacle outlet _____ the balcony, deck or porch.

a. installed within the perimeter of
b. accessible from
c. both a or b
d. none of the above

44. The receptacle _____ shall not be located more than 6 1/2 ft. above the balcony, deck, or porch walking surface.

a. device

b. switch
c. outlet
d. none of the above

45. 210.52 (G) Dwelling Unit Receptacle Outlets (G) Basements, Garages, and Accessory Buildings. For a one family dwelling, at least one receptacle outlet shall be installed in the following specified areas:
a. all garages with electric power
b. accessory buildings with electric power
c. in each separate unfinished portion of a basement
d. all of the above

46. 210.52 (G) Dwelling Unit Receptacle Outlets (G) Basements, Garages, and Accessory Buildings. These receptacles are allowed to share the receptacles required for specific equipment.
a. true
b. false

47. 210.52(G)(1) Garages. In each attached garage and in each detached garage with electric power. The branch circuit supplying this receptacle(s) shall not supply outlets _____.
a. outside of the garage
b. lights outside of the garage
c. plugs outside of the garage
d. all of the above

48. 210.52(G)(1) Garages. At least one receptacle outlet shall be installed for each _____.
a. garage
b. service door
c. garage door
d. car space

49. 210.64 Electrical Service Areas. Al least one 125-voll, single phase, 15- or 20-ampore-rated receptacle outlet shall be installed within ____ of the electrical service equipment.
a. 25’
b. 30’
c. 50’
d. none of the above

50. 210.64 Electrical Service Areas. Exception: The receptacle outlet shall not be required to be installed in _____.
a. one family dwellings
b. two family dwellings
c. multi-family units
d. both a & b

51. 220.12 Lighting Load for Specified Occupancies. a. Exception: Where the building is designed and constructed to comply with an energy code adopted by the local authority, the lighting load shall be permitted lo be calculated at the values specified in the energy code where the following conditions are met:
a. A power monitoring system is installed that will provide continuous information regarding the total general lighting load of the building.
b. The power monitoring system will be set with alarm values to alert the building owner or manager if the lighting load exceeds the values set by the energy code.
c. The demand factors specified in 220.42 are not applied to the general lighting load.
d. all of the above

52. 225.52 Disconnecting Means (A) Location. A building or structure disconnecting means shall be located in accordance with _____.
a. 225.30
b. 225.31
c. 225.32
d. 225.33

53. 225.52 Disconnecting Means (A) Location. Or, if not readily accessible, it shall be operable by mechanical linkage from a _____.
    a. accessible point
    b. readily accessible point
    c. readily accessible remote-control device
    d. all of the above
54. 225.52 Disconnecting Means (A) Location. For multi-building industrial installations under single management, it shall be permitted to be electrically operated by a _____ in a separate building or structure.
    a. accessible point
    b. readily accessible point
    c. readily accessible remote-control device
    d. all of the above
55. 230.30 Installation. Underground Service Conductors (A) Insulation. Underground _____ shall be insulated for the applied voltage.
    a. service conductors
    b. service lateral conductors
    c. both a & b
    d. none of the above
56. 230.30 Installation. (B) Wiring Methods. Underground service conductors shall be installed in accordance with the applicable requirements of this Code covering the type of wiring method used and shall be limited to the following methods:
    a. Type RMC conduit
    b. Type IMC conduit
    c. Type NUCC conduit
    d. all of the above
57. 230.30 Installation. (B) Wiring Methods. Underground service conductors shall be installed in accordance with the applicable requirements of this Code covering the type of wiring method used and shall be limited to the following methods:
    a. Type HDPE conductors or cables
    b. Type PVC conductors or cables
    c. Type RTRC conduit
    d. all of the above
58. 230.30 Installation. (B) Wiring Methods. Underground service conductors shall be installed in accordance with the applicable requirements of this Code covering the type of wiring method used and shall be limited to the following methods:
    a. Type IGS cable
    b. Type USE conduit
    c. Type MV or Type MC cable that’s approved, or tested for direct burial applications
    d. Typo Ml cable, where lack of protection exists against physical damage and corrosive conditions
59. 230.44 Cable Trays Cable tray systems shall be permitted to support service entrance conductors. Cable trays used to support service-entrance conductors shall contain only service-entrance conductors and shall be limited to the following methods:
    a. Type SE cable
    b. both a & d
    c. Single thermoplastic insulated
    d. Single conductors I/O and larger with CT rating
60. Such cable trays shall be identified with permanently affixed labels with the wording "Service Entrance Conductors." The labels shall be located so as to be visible after installation with a spacing not to exceed _____ so that the service entrance conductors are able to be readily traced through the entire length of the cable tray.
    a. 3.0 m
    b. 10 ft.

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

61. 230.82 Equipment Connected to the Supply Side of Service Disconnect. Only the following equipment shall be permitted to be connected to the supply side of the service disconnecting means: (2) Meters and meter sockets nominally rated not in excess to _____ volts, provided that all metal housings and service enclosures are grounded in accordance with Part VII and bonded in accordance with Part V of Article 250.

a. 600
b. 800
c. 1000
d. 1200

62. 230.82 Equipment Connected to the Supply Side of Service Disconnect. Only the following equipment shall be permitted to be connected to the supply side of the service disconnecting means: (3) Meter disconnect switches nominally rated not in excess of _____ volts that have a short-circuit current rating equal to or greater than the available short-circuit current, provided all metal housings and service enclosures are grounded in accordance with Part VII and bonded in accordance with Part V of Article 250.

a. 600
b. 800
c. 1000
d. 1200

63 230.82 Equipment Connected to the Supply Side of Service Disconnect. (3) A meter disconnect shall be legibly field marked on its interior in a manner suitable for the environment as follows: SERVICE DISCONNECT NOT METER EQUIPMENT.

a. true
b. false

64. 240.21 Location in Circuit. (B) Feeder Taps. Conductors shall be permitted to he tapped, without overcurrent protection at the tap, to a feeder as specified in 240.21(B)(1) through (B)(5). The provisions of 240.21(B) shall not be permitted for tap conductors.
b. Not loss than the rating of the _____ supplied by the tap conductors or not less than the rating of the overcurrent protective device at the termination of the tap conductors.

a. equipment containing an overcurrent device(s)
b. equipment containing an GFCI device(s)
c. equipment containing an AFCI device(s)
d. equipment containing an GFP device(s)

65. 240.21 Location in Circuit. (B) Feeder Taps. Exception to b: Where listed equipment, such as surge protective device(s) (SPDs), are provided with specific instructions on minimum conductor sizing, the ampacity of the tap conductors supplying that equipment shall be permitted to be determined based on the _____ instructions.

a. approved
b. identified
c. listed
d. manufacturer's

66. 240.87 Where the highest continuous current trip setting for which the actual overcurrent device installed in a circuit breaker is rated or can be adjusted is 1200 amperes or higher then 240.87(A) and (B) shall apply defines _____?

a. Non-instantaneous Trip
b. Arc Energy Reduction
c. instantaneous Trip
d. none of the above

67. 240.87 (B) Method to Reduce Clearing Time. One of the following or approved equivalent means shall be provided:

a. Zone-selective interlocking
b. Differential relaying

c. Energy-reducing maintenance switching with local status indicator
d. all of the above

68. 240.87 (B) Method to Reduce Clearing Time. One of the following or approved equivalent means shall be provided:
a. Energy-increasing enactive arc-flash mitigation system
b. An identified lesser means
c. both a & b
d. none of the above

69. 240.87 (B) An energy-reducing maintenance switch allows a worker to set a circuit breaker trip unit to "no intentional delay" to reduce the clearing time while the worker is working within an arc-flash boundary as defined in NFPA 7OE-2O12, Standard for Electrical Safety in the Workplace and then to set the trip unit back to a normal setting after the potentially hazardous work is complete defines ____.
a. Informational Note No. 1
b. Informational Note No. 2
c. Informational Note No. 3
d. none of the above

70. 240.87 (B) An energy-reducing active arc-flash mitigation system helps in reducing arcing duration in the electrical distribution system. No change in circuit breaker or the settings of other devices is required during maintenance when a worker is working within an arc-flash boundary as defined in NFPA 70E-2012, Standard for Electrical Safety in the Workplace defines _____.
a. Informational Note No. 1
b. Informational Note No. 2
c. Informational Note No. 3
d. none of the above

71. 250.8 Connection of Grounding and Bonding Equipment. (A) Permitted Methods. Equipment grounding conductors, grounding electrode conductors, and bonding jumpers shall be connected by ____ of the following means: (1) Listed pressure connectors, (2) Terminal bars, (3) Pressure connectors listed as grounding and bonding equipment, (4) Exothermic welding process, (5) Machine screw-type fasteners that engage not less than two threads or are secured with a nut, (6) Thread-forming machine screws that engage not less than two threads in (he enclosure, (7) Connections (hat are part of a listed assembly, (8) Other listed means
a. one
b. one or more
c. both a & b
d. none of the above

72. 250.21 Alternating-Current Systems of _____ Not Required to Be Grounded
a. 50 Volts to Less-Than 1000 Volts
b. 50 Volts to Greater-Than 1000 Volts
c. 50 Volts to 1000 Volts
d. none of the above

73. 250.21(C) Marking. Ungrounded systems shall be legibly marked "Caution Ungrounded System Operating Volts Between Conductors" at _____of the system.
a. the source
b. the first disconnecting means
c. both a & b
d. none of the above

74. 250.21(C) The marking may be of sufficient resilience to resist the atmosphere involved.
a. true
b. false

75. 250.24 Grounding Service Supplied Alternating-Current Systems. (A) System Grounding Connections. (1) General. The grounding electrode conductor connection shall be made at any accessible point from the load end of the overhead service conductors, service drop, underground service conductors, or service lateral to and including the _____ to which the grounded service conductor is connected at the service disconnecting means.

a. neutral bar
b. terminal
c. bus
d. both b & c

76. 250.24 Grounding Service Supplied Alternating-Current Systems. Informational Note: See definitions of Service Conductors, Overhead; Service Conductors, Underground; Service Drop; and Service Lateral in Article ____.

a. 90
b. 100
c. 110
d. 230

77. 250.64 Grounding Electrode Conductor Installation. (B) Securing and Protection Against Physical Damage. Grounding electrode conductors and grounding electrode bonding jumpers shall not be required to comply with _____.

a. 250.64
b. 300.3
c. 300.4
d. 300.5

78. 250.64 Grounding Electrode Conductor Installation. (D) _____ with Multiple Disconnecting Means in Separate Enclosures.

a. Service
b. Building
c. Structure
d. both b & c

79. 250.64(D) Grounding Electrode Conductor Installation. For a service or feeder with two or more disconnecting means in _____ enclosures supplying a building or structure, the grounding electrode connections shall be made in accordance with 250.64(D)(1), (D}{2), or (D)(3).

a. separate
b. detached
c. isolated
d. none of the above

80. 250.64(D)(1) Common Grounding Electrode Conductor and Taps. A common grounding electrode conductor and grounding electrode conductor taps shall be installed. The common grounding electrode conductor shall be sized in accordance with 250.66, based on the sum of the circular mil area of the largest ungrounded _____ of each set of conductors that supply the disconnecting means.

a. service-entrance conductor(s)
b. conductor(s)
c. both a & b
d. none of the above

81. 250.64(D)(1) If the service-entrance conductors connect directly to overhead service conductors, a service drop, underground service conductors, or service lateral, the common grounding electrode conductor shall be sized in accordance with Table_____, Note 1.

a. 250.63
b. 250.64
c. 250.65
d. 250.66

82. 250.64(D)(1)(3) Connections to an aluminum or copper busbar not less than 1/4 in. thick x 2 in. wide and of sufficient ____to accommodate the number of terminations necessary for the installation.

a. height
b. length
c. width
d. all of the above

83. 250.64 Grounding Electrode Conductor Installation (E) Raceways and Enclosures for Grounding Electrode Conductors. The existing long paragraph for enclosures for grounding electrode conductors was retitled "Raceways and Enclosures for “Grounding Electrode Conductor” and was broken up into four (4) list items for readability and clarity. Items (1) General & (2) Methods had _____.

a. changes
b. no changes

84. 250.64 Grounding Electrode Conductor Installation (E) Raceways and Enclosures for Grounding Electrode Conductors. The existing long paragraph for enclosures for grounding electrode conductors was retitled "Raceways and Enclosures for “Grounding Electrode Conductors” and was broken up into four (4) list items for readability and clarity. Items (3) Size & (4) Wiring Methods had _____.

a. changes
b. no changes

85. 250.66 Size of Alternating-Current Grounding Electrode Conductor. Informational note: 250.24(C) for size of ac system conductor brought to service equipment. This informational note was _____.

a. amended
b. relocated
c. removed
d. none of the above

86. 250.66 Size of Alternating-Current Grounding Electrode Conductor. (A) Connections to a Rod, Pipe, or Plate Electrode(s). Where the grounding electrode conductor is connected to a _____rod, pipe, or plate electrode(s), or any combination thereof as permitted in 250.52(A)(5) or (A)(7), that portion of the conductor that is the sole connection to the grounding electrode(s) shall not be required to be larger than 6 AWC copper wire or 4 AWG aluminum wire.

a. single
b. multiple
c. both a & b
d. none of the above

87. 250.66 Size of Alternating-Current Grounding Electrode Conductor. (B) Connections to Concrete-Encased Electrode(s). Where the grounding electrode conductor is connected to a single or multiple concrete encased electrode(s) as permitted in 250.52(A)(3), that portion of the conductor that is the sole connection to the grounding electrode(s) shall not be required to be larger than _____wire.

a. 6 AWG copper
b. 4 AWG copper
c. 4 AWG aluminum
d. both a & c

88. 250.68 Grounding Electrode Conductor and Bonding jumper Connection to Grounding Electrodes. (C) was changed to _____.

a. Metallic Water Pipe
b. Structural Metal
c. Grounding Electrode Connections
d. both a & b

89. 250.68(C)(2) The metal structural frame of a building shall be permitted to be used as a bonding conductor to interconnect electrodes that are part of the grounding electrode system, or as a grounding electrode conductor by _____.

a. connecting the structural metal frame to the reinforcing bars of a concrete-encased electrode, as provided in 25O.52(A) (3), or ground ring as provided in 250.52(A)(4)
b. bonding the structural metal frame to one or more of the grounding electrodes, as specified in 250.52(A)(5) or (A)(7), that comply with 250.53(A)(2)
c. other approved means of establishing a connection to earth.
d. all of the above

90. 250.68(C)(3) Grounding Electrode Connections. Grounding electrode conductors and bonding jumpers shall be permitted to be connected at the following locations and used to extend the connection to an electrode(s):

a. Interior metal wafer piping located not more than 5 ft. from the point of entrance to the building.
b. The metal structural frame of a building.
c. A concrete-encased electrode of either the conductor type, reinforcing rod or bar installed in accordance with 250.52(A)(3) extended from its location within the concrete to an accessible location above the concrete shall be permitted.
d. all of the above

91. 250.102 Bonding Conductors and Jumpers (C) Size − Supply-Side Bonding Jumper. (1) Size for Supply Conductors in a Single Raceway or Cable. The supply-side bonding jumper shall not be smaller than specified in _____.
a. Table 250.102(A)
b. Table 250.102(B)
c. Table 250.102(C)
d. Table 250.66

92. 250.102(C)(2) Size for Parallel Conductor Installations in Two or More Raceways. Where the ungrounded supply conductors are paralleled in two or more raceways or cables, and an individual supply-side bonding jumper is used for bonding these raceways or cables, the size of the supply-side bonding jumper for each raceway or cable shall be selected from Table _____ based on the size of the ungrounded supply conductors in each raceway or cable.
a. 250.102(A)
b. 250.102(B)
c. 250.102(C)
d. 250.66

93. 250.102(C)(2)See Chapter 9, Table 8, for the circular mil area of conductors 18 AVVG through 4/0 AVVG defines _____.
a. Informational Note No. 1
b. Informational Note No. 2
c. Informational Note No. 3
d. none of the above

94. 250.102(C)(2) 1:The term supply conductors includes ungrounded conductors that do not have overcurrent protection on their supply side and terminate at service equipment or the first disconnecting means of a separately derived system defines _____.
a. Informational Note No. 1
b. Informational Note No. 2
c. Informational Note No. 3
d. none of the above

95. 250.122 Size of Equipment Grounding Conductors (B) Increased in Size. Where ungrounded conductors are increased in size from the minimum size that has sufficient ampacity for the intended installation, wire-type equipment grounding conductors, where installed, shall be increased in size proportionately according to the circular mil area of the _____ conductors.
a. ungrounded
b. grounded
c. both ungrounded and grounded
d. none of the above

96. 250.130 Equipment Grounding Conductor Connections (C) Non grounding Receptacle. Replacement or Branch Circuit Extensions. The equipment grounding conductor of a grounding-type receptacle or a branch circuit extension shall be permitted to be connected to any of the following: [List items (1)-(3) and (5) and (6) remain unchanged.] See NEC for complete text. (4) An equipment grounding conductor that is part of another branch circuit that originates from the enclosure where the _____.
a. branch circuit for the receptacle
b. branch circuit originates
c. both a & b

d. none of the above

97. 250.166 Size of the Direct-Current Grounding Electrode Conductor. The size of the grounding electrode conductor for a dc system shall be as specified in 250.166(A) and (B), except as permitted by 250.166(0 through (E). The grounding electrode conductor for a dc system shall meet the sizing requirements in this section but shall not be required to be larger than _____.

a. 3/0 copper
b. 3/0 aluminum
c. 250 kcmil aluminum
d. both a & c

98. 250.167 Direct-Current Ground-Fault Detection (A) Ungrounded Systems. Ground-fault detection systems shall he required for _____ systems.

a. ungrounded
b. grounded
c. both ungrounded and grounded
d. none of the above

99. 250.167 Direct-Current Ground-Fault Detection (B) Grounded Systems. Ground fault detection shall be permitted for _____ systems.

a. ungrounded
b. grounded
c. both ungrounded and grounded
d. none of the above

100. 250.167 Direct-Current Ground-Fault Detection (A) Ungrounded Systems. (B) Grounded Systems. (C) Marking. Direct-current systems shall be legibly marked to indicate_____. The marking shall be of sufficient durability to withstand the environment involved.

a. the grounding type at the dc source
b. the first disconnecting means of the system
c. both a & b
d. none of the above

101. 250.167 Direct-Current Ground-Fault Detection (A) Ungrounded Systems. Informational Note: NFPA 70E-2012 identifies ____ dc grounding types in detail.

a. 2
b. 3
c. 4
d. 6

102. 250.186 Ground-Fault Circuit Conductor Brought to Service Equipment. 250.186 will now require services of over 1000 volts to have a grounded (neutral) conductor to be established at the service for a _____ system.

a. ungrounded
b. grounded
c. both ungrounded and grounded
d. none of the above

103. 250.186 Ground-Fault Circuit Conductor Brought to Service Equipment. 250.186 _____systems (over 1000 volts) will require a supply side bonding jumper brought to the service equipment.

a. ungrounded
b. grounded
c. both ungrounded and grounded
d. none of the above

104. 250.194 Grounding and Bonding of Fences and Other Metal Structures. Metallic fences enclosing, and other metal structures in or surrounding, a substation with exposed electrical conductors and equipment shall be grounded and bonded to limit _____ voltages.

a. step
b. touch
c. transfer
d. all of the above

105. 250.194 Grounding and Bonding of Fences and Other Metal Structures. (A) Metal Fences. Where metal fences are located within 16 ft. of the exposed electrical conductors or equipment, the fence shall be bonded to the grounding electrode system with wire-type bonding jumpers as follows:

a. Bonding jumpers shall be installed at each fence corner and at maximum 160 ft. intervals along the fence.
b. Where bare overhead conductors cross the fence, bonding jumpers shall be installed on each side of the crossing.
c. Gales shall be bonded to the gate support post, and each gate support post shall be bonded to the grounding electrode system.
d. all of the above

106. 250.194 Grounding and Bonding of Fences and Other Metal Structures. (A) Metal Fences. Where metal fences are located within 16 ft. of the exposed electrical conductors or equipment, the fence shall be bonded to the grounding electrode system with wire-type bonding jumpers as follows:

a. Any gate or other opening in the fence shall be bonded across the opening by a buried bonding jumper.
b. The grounding grid or grounding electrode systems shall be extended to cover the swing of all gates.
c. The barbed wire strands above the fence shall be bonded to the grounding electrode system.
d. all of the above

107. 250.194 Grounding and Bonding of Fences and Other Metal Structures. (A) Metal Fences. Where metal fences are located within 16 ft. of the exposed electrical conductors or equipment, the fence shall be bonded to the grounding electrode system with wire-type bonding jumpers as follows: Alternate designs performed under engineering supervision shall be permitted for grounding or bonding of metal fences.

a. true
b. false

108. 250.194 Grounding and Bonding of Fences and Other Metal Structures. See IEEE 80-2000, IEEE Guide for Safely in AC Substation Grounding, for design and installation of fence grounding defines _____.

a. Informational Note No. 1
b. Informational Note No. 2
c. Informational Note No. 3
d. none of the above

109. 250.194 Grounding and Bonding of Fences and Other Metal Structures. A non-conducting fence or section may provide isolation for transfer of voltage to other areas.

a. Informational Note No. 1
b. Informational Note No. 2
c. Informational Note No. 3
d. none of the above

110. 250.194 Grounding and Bonding of Fences and Other Metal Structures. (B) Metal Structures. All exposed conductive metal structures, including guy wires within _____of exposed conductors or equipment and subject to contact by persons, shall be bonded to the grounding electrode systems in the area.

a. 8 ft. vertically
b.16 ft. horizontally
c. both a & b
d. none of the above

111. 285.13 Type 4 and Other Component Type SPDs. Type 4 component assemblies and other component type SPDs shall only be installed by the _____ manufacturer.

a. approved
b. listed
c. equipment
d. none of the above

112. 300.1 Scope. (A) All Wiring Installations. This article covers general requirements for wiring methods and materials for all wiring installations unless _____ by other articles in Chapter 3.
a. approved
b. identified
c. listed
d. modified

113. 300.6 Protection Against Corrosion and Deterioration. Informational Note: Field-cut threads are those threads that are cut in _____ anywhere other than at the factory where the product is listed.
a. conduit
b. elbows
c. nipples
d. all of the above

114. 300.11 Securing and Supporting. (B) Raceways Used as a Means of Support. Raceways shall be used only as a means of support for other raceways, cables, or non-electrical equipment under any of the following conditions: Where the raceway or means of support is ____as a means of support.
a. approved
b. identified
c. listed
d. modified

115. 300.38 Raceways in Wet Locations Above Grade. Where raceways are installed in wet locations above grade, the interior of these raceways shall be considered to be a _____ location.
a. dry
b. damp
c. wet
d. below grade

116. 300.38 Raceways in Wet Locations Above Grade. _____ installed in raceways in wet locations above grade shall comply with 310.10(C).
a. Insulated conductors
b. cables
c. cords
d. both a & b

117. 310.10 Uses Permitted. (H) Conductors in Parallel. (2) Conductor and Installation Characteristics. (6) Where paralleled in _____, conductors shall be grouped with all conductors of the same circuit to prevent heating effects from imbalances of current.
a. non-ferrous metal enclosures
b. non-ferrous raceways
c. ferrous metal enclosures or raceways
d. both a & b

118. 310.10 Uses Permitted. (H) Conductors in Parallel. (2) Conductor and Installation Characteristics. Informational Note: Where conductors are paralleled in enclosures or raceways, failure to group one conductor from each phase in each raceway or grouping within a wiring method may result in _____.
a. overheating
b. current imbalance
c. both a & b
d. none of the above

119. The titles of both 310.15(B)(3](a) and Table 310.15(B)(3)(a) were changed from "More Than Three Current-Carrying Conductors in a Raceway or Cable" to "_____" to correspond to the text at 310.15(B)(3)(a).The note to Table 310.15(B)(3)(a) was revised to make it clear that the table applies to the total number of conductors in the raceway or cable, etc., as well as to spare conductors; but the table does not apply to conductors that cannot be simultaneously energized.
a. Less Than Three Current-Carrying Conductors
b. More Than Three Current-Carrying Conductors
c. Up to Three Current-Carrying Conductors

d. none of the above

120. 310.15 Ampacities for Conductors Rated 0-2000 Volts. (3) Adjustment Factors. (c) Raceways and Cables Exposed to Sunlight on Rooftops. Where _____are exposed to direct sunlight on or above rooftops, the adjustments shown in Table 31 G.15(B)(3)(c) shall be added to the outdoor temperature to determine the applicable ambient temperature for application of the correction factors in Table.510.15{B)(2)(a) or Table 310.15(B)(2)(b).

a. raceways
b. cables
c. cords
d. both a & b

2014 NEC Changes Part 2-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

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