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 2011 NEC code book or this language (click here) & compare it to the 2008 NEC code.

Course: 12108 2011 NEC CODE UPDATES PART 3

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 Electrician Apprentice	IEA	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

2011 NEC Code Updates Part 3

1. 342.46 Bushings. Where a conduit enters a box, filling, or other enclosure, a bushing shall be provided to protect the wires from abrasion unless the _____is designed to provide this protection.

a. box
b. fitting
c. enclosure
d. all of the above

---

2. 342.46 _____ code language indicated a bushing was required "unless the design of the box, fitting, or enclosure is such as to afford equivalent protection".

a. 2008
b. 2006
c. none of the above
d. both a & b

---

3. A bushing is required at IMC conduit in boxes, and so forth, for abrasion protection of conductors, unless the box, fitting, or enclosure is designed to provide this protection.

a. true
b. false

---

4. 348.30(A) Ex. No. 2 Flexible Metal Conduit. At terminations where flexibility is necessary after installation, lengths from the last point where the raceway is securely fastened shall not exceed the following:

a. 900 mm (3 ft) for trade sizes ½" through 1 ¼"
b. 1200 mm (4 ft) for trade sizes 1 ½" through 2
c. 1500 mm (5 ft) for trade size 2 ½" and larger
d. all of the above

---

5. 348.30 Flexible Metal Conduit. (A) Securely Fastened. FMC shall be securely fastened in place by an approved means within _____ of each box, cabinet, conduit body, or other conduit termination and shall be supported and secured at intervals not to exceed 4 ½'.

a. 8"
b. 12"
c. both a & b
d. neither a or b

---

6. 348.30 Flexible Metal Conduit. (A) Securely Fastened. FMC shall be secured at intervals not to exceed _____.

a. 4'
b. 4 1/2'
c. both a & b
d. neither a or b

---

7. 348.42 Angle connectors for flexible metal conduit (FMC) cannot be installed where the angle connector itself will be _____.

a. buried
b. concealed
c. both a & b
d. neither a or b

---

8. Underground Installations (PVC). The terms "homogenous and onhomogenous" were removed from _____.

a. 250.1
b. 352,10(G)
c. 352,10(A)
d. 250.2

---

9. 353.10(6) Uses Permitted (HDPE) Conductors or cables with temperature ratings higher than the HDPE listed temperature rating are permitted provided they are not operated at a temperature higher than the HDPE _____.

a. raceway temperature rating
b. listed temperature rating.
c. for a separately derived system
d. all of the above

---

10. 353.10 Uses Permitted [High Density Polyethylene Conduit (Type HDPE)]. The use of HDPE conduit shall be permitted under the following conditions:

a. In discrete lengths or in continuous lengths from a reel
b. In locations subject to severe corrosive influences as covered in 300.6 and where subject to chemicals for which the conduit is listed
c. In cinder fill
d. all of the above

---

11. 353.10 Uses Permitted [High Density Polyethylene Conduit (Type HDPE)]. The use of HDPE conduit shall be permitted under the following conditions:

a. In direct burial installations in earth or concrete

b. Above ground, except as prohibited in 353.12, where encased in not less than 50 mm (2 in.) of concrete,
c. Conductors or cables rated at a temperature higher than the listed temperature rating of HDPE conduit shall be permitted to be installed in HDPE conduit, provided the conductors or cables are not operated at a temperature higher than the listed temperature rating of the HDPE conduit.
d. all of the above

---

12. 353.10 Uses Permitted [High Density Polyethylene Conduit (Type HDPE)].Informational Note to (4): Refer to 300.5 and 300.50 for underground installations.

a. true
b. false

---

13. 368.10 (B) Behind Access Panels. Busways shall be permitted to be installed behind access panels, provided the Busways _____.

a. are totally enclosed
b. are of nonventilating-type construction
c. installed so that the joints between sections and at fittings are accessible for maintenance purposes
d. all of the above

---

14. 368.10 (B) Where installed behind access panels, means of access shall be provided, and either of the following conditions shall be met:

a. The space behind the access panels shall not be used for air-handling purposes.
b. Where the space behind the access panels is used for environmental air, other than ducts and plenums, there shall be no provisions for plug-in connections, and the conductors shall be insulated.
c. none of the above
d. both a & b

---

15. 380.23 Insulated Conductors (Multioutlet Assembly). For field assembled multioutlet assemblies, insulated conductors shall comply with _____.

a. 380.23(A)
b. 380.23(B)
c. neither a or b
d. both a & b

---

16. 380.23 (A) Deflected Insulated Conductors. Where insulated conductors are deflected within a multioutlet assembly, either at the ends or where conduits, fittings, or other raceways or cables enter or leave the multioutlet assembly, or where the direction of the multioutlet assembly is deflected greater than _____ degrees, dimensions corresponding to one wire per terminal in Table 312.6(A) shall apply.

a. 30
b. 90
c. 45
d. 60

---

17. 380.23 (B) Multioutlet Assemblies Used as Pull Boxes. Where insulated conductors ___ AWG or larger are pulled through a multioutiet assembly, the distance between raceway and cable entries enclosing the same conductor shall not be less than that required by 314.28(A)(1) for straight pulls and 314.28(A)(2) for angle pulls.

a. 4
b. 2
c. neither a or b
d. both a & b

---

18. 380.23 (B) Multioutlet Assemblies Used as Pull Boxes. When transposing cable size into raceway size, the minimum metric designator (trade size) raceway required for the number and size of conductors in the cable shall be used.

a. true
b. false

---

19. Article 392, Cable Trays, was reorganized to be similar to the other Chapter 3 wiring method articles.

a. true
b. false

---

20. 392.18 Cable Tray Installation (H) Marking. Cable trays containing conductors rated over 600 volts shall have a permanent, legible warning notice carrying the wording "DANGER-HIGH VOLTAGE-KEEP AWAY” placed in a readily visible position on all cable trays with spacing of warning notices not to exceed 3 m (10 ft).

a. That required by 220.61
b. That required by 250.122
c. neither a or b
d. both a & b

---

21. 392.18 Cable Tray Installation (H) Marking. Legible warning notice carrying the wording "DANGER-HIGH VOLTAGE-KEEP AWAY” shall be placed in a readily visible position on all cable trays with spacing of warning notices not to exceed _____.

a. 3 m
b. 120”
c. neither a or b
d. both a & b

---

22. A new Article 399 has been added to cover installations of outdoor, overhead conductors rated over 600 volts.

a. true
b. false

---

23. 400.5 Flexible cords and cables used in ambient temperatures below _____ now require ambient temperature adjustment correction factors.

a. 30°C
b. 86°F
c. neither a or b
d. both a & b

---

24. Previous 400.31 (B) for shielded cables has been deleted, as there are no cords or cables in Article 400 that are rated for use above _____ volts.

a. 600
b. 2000
c. neither a or b
d. both a & b

---

25. 404.2 Switches Controlling Lighting Loads. Where switches control lighting loads supplied by a grounded general purpose branch circuit, the _____ circuit conductor for the controlled lighting circuit shall be provided at the switch location.

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

---

26. 404.2 Switches Controlling Lighting Loads. Exception: The grounded circuit conductor shall be permitted to be omitted from the switch enclosure where the following condition applies:

a. Conductors tor switches controlling lighting loads enter the box through a raceway. The raceway shall have sufficient cross-sectional area to accommodate the extension of the grounded circuit conductor of the lighting circuit to the switch location whether or not the conductors in the raceway are required to be increased in size to comply with 310.15(B)(2)(a).
b. Cable assemblies for switches controlling lighting loads enter the box through a framing cavity that is open at the lop or bottom on the same floor level, or through a wall, floor, or ceiling that is unfinished on one side.
c. neither a or b
d. both a & b

---

27. 404.9(B) Grounding of Switches. Switches generally are required to be connected to an equipment grounding conductor and provided a means to ground metal faceplates (whether or not a metal faceplate is installed) What new exceptions were added to the mandatory revisions for grounding of switches?

a. Switches with nonmetallic yokes, faceplates, and accessible parts (after installation) when listed as a kit or assembly
b. Snap switch with an integral nonmetallic enclosure
c. neither a or b
d. both a & b

---

28. 404.9 Exception No. 2 to (B): Listed kits or listed assemblies shall not be required to be connected to an equipment grounding conductor if all of the following conditions are met:

a. The device is provided with a nonmetailic faceplate that cannot be installed on any other type of device
b. The device does not have mounting means to accept other configurations of faceplates
c. neither a or b
d. both a & b

---

29. 404.9 Exception No. 2 to (B): Listed kits or listed assemblies shall not be required to be connected to an equipment grounding conductor if all of the following conditions are met:

a. The device is equipped with a nonmetallic yoke
b. All pans of the device that are accessible after installation of the faceplate are manufactured of nonmetaliic materials
c. neither a or b
d. both a & b

---

30. 404.9 Exception No. 3 to (B): A snap switch with integral _____ enclosure complying with 300.15(E) shall be permitted without a connection to an equipment grounding conductor.

a. metallic
b. nonmetallic
c. neither a or b
d. both a & b

---

31. 404.9 Exception No. 2 to (B): _____ shall not be required to be connected to an equipment grounding conductor if all of the conditions are met.

a. Listed kits
b. Listed assemblies
c. neither a or b
d. both a & b

---

32. 406.4(D)(4) Receptacle Replacement (AFCI). Arc-fault circuit interrupter protection is required for replacement receptacle outlets where a receptacle outlet is supplied by a branch circuit that requires AFCI protection elsewhere in the Code (effective date January 1, 2014)

a. true
b. false

---

33. 406.4(D)(4) Arc-Fault Circuit-Interrupter Protection. Where a receptacle outlet is supplied by a branch circuit that requires arc-fault circuit interrupter protection as specified elsewhere in this code, a replacement receptacle at this outlet shall be one of the following:

a. a listed outlet branch circuit type arc-fault circuit interrupter receptacle.
b. a receptacle protected by a listed outlet branch circuit type arc-fault circuit interrupter type receptacle.
c. neither a or b
d. both a & b

---

34. 406.4 Listed tamper-resistant receptacles are now required for replacement receptacles that require tamper-resistant receptacles elsewhere in the Code.

a. true
b. false

---

35. 406.9 In-use covers for non-dwelling unit receptacles installed in wet locations on an enclosure supported from grade will now require hood covers of the _____ type.

a. heavy duty
b. extra-duty
c. neither a or b
d. both a & b

---

36. 406.9 Informational Note No, 1: Requirements for extra-duty outlet box hoods are found in ANSI/UL 514D, Cover Plates for Flush-Mounted Wiring Devices.

a. true
b. false

---

37. 406.12 Tamper-Resistant Receptacles for Dwelling Units. In all areas specified in 210.52. all _____ type 125-volt, 15- and 20-ampere receptacles shall be listed tamper-resistant receptacles.

a. locking
b. nonlocking
c. neither a or b
d. both a & b

---

38. 406.12 Exception; Receptacles in the following locations are not required to be tamper-resistant:

a. Receptacles located more than 1.7 m (5-1/2 ft.) above the floor.
b. Receptacles that are part of a luminaire or appliance.
c. neither a or b
d. both a & b

---

39. 406.12 Exception; Receptacles in the following locations are not required to be tamper-resistant:

a. A single receptacle or a duplex receptacle for two appliances located within dedicated space for each appliance that in normal use is not easily moved from one place to another and that is cord-and-plug connected in accordance with 400.7(A)(6), (A)(7), or(A)(8).
b. Nongrounding receptacles used for replacements as permitted in 406.4(D)(2)(a).
c. neither a or b
d. both a & b

---

40. 406.13 Tamper-Resistant Receptacles in Guest Rooms and Guest Suites. All _____ type, 125-volt, 15- and 20-ampere receptacles located in guest rooms and guest suites shall be listed tamper-resistant receptacles.

a. locking
b. nonlocking
c. neither a or b
d. both a & b

---

41. 406.14 Tamper-Resistant Receptacles Child Care Facilities. In all child care facilities, all _____ type, 125-volt, 15- and 20- ampere receptacles shall be listed tamper-resistant receptacles.

a. locking
b. nonlocking
c. neither a or b
d. both a & b

---

42. 408.3 (2) Ungrounded Systems. A switchboard or panelboard containing an ungrounded electrical system as permitted in 250-21 shall be legibly and permanently field marked as follows:

a. "Caution Ungrounded System Operating ____Volts Between Conductors"
b. “arc flash warning”
c. neither a or b
d. both a & b

---

43. 408.4(B) Identification - Source of Supply All non-dwelling unit _____ supplied by a feeder are required to be marked to indicate where the power supply source is located.

a. switchboards
b. panelboards
c. neither a or b
d. both a & b

---

44. 409.102(B) Phase Arrangements Industrial Control Panels. The phase arrangement on 3-phase horizontal common power and vertical buses shall be A, B, C from front to back, top to bottom, or left to right, as viewed from the front of the industrial control panel. Other busbar arrangements shall be permitted for additions to existing installations, and the _____.

a. phases shall be permanently marked
b. phases shall be legible marked
c. neither a or b
d. both a & b

---

45. 409.104(A) Industrial Control Panels - Wiring Space. _____ (other than switches or overcurrent devices) is permitted to be installed in industrial control panels with adequate wire bending space provided.

a. Other equipment
b. HVAC equipment
c. neither a or b
d. both a & b

---

46. 409.110 (3) industrial control panels supplied by more than one power source such that more than one disconnecting means is required to disconnect all power within the control panel shall be _____ to indicate that more than one disconnecting means is required to de-energize the equipment.

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

---

47. 410.16 Luminaires in Clothes Closets. (A) Luminaire Types Permitted. Only luminaires of the following types shall be permitted in a closet:

a. Surface-mounted or recessed incandescent
b. Surface-mounted or recessed fluorescent luminaires
c. Surface-mounted fluorescent or LED luminaires identified as suitable for installation within the closet storage space
d. all of the above

---

48. 410.16 Luminaires in Clothes Closets. Surface-mounted or recessed incandescent luminaires with completely enclosed light sources or unenclosed LED luminaires are code compliant.

a. true
b. false

---

49. 410.16 Luminaires in Clothes Closets. Unenclosed surface-mounted fluorescent or LED luminaires _____ as suitable for installation within the closet storage space.

a. identified
b. recognized
c. neither a & b
d. both a & b

---

50. 410.16 Surface-mounted LED luminaries permitted to be installed within the closet storage space shall maintain a distance of ___ inches from the storage shelf area.

a. 6
b. 0
c. 9
d. 12

---

51. 410.16 Luminaires in Clothes Closets. Revisions were added to 410.16 to clearly permit surface-mounted LED luminaires in clothes closets.

a. true
b. false

---

52. 410.64 Luminaires as Raceways Luminaires shall not be used as a raceway for circuit conductors unless they comply with _____.

a. Listed. Luminaires listed and marked for use as a raceway shall be permitted to be used as a raceway,
b. Through-Wiring. Luminaires identified for through-wiring, as permitted by 410.21, shall be permitted to be used as a raceway.
c. Luminaires Connected Together. Luminaires designed for end-to-end connection to form a continuous assembly, or luminaires connected together by recognized wiring methods, shall be permitted to contain the conductors of a 2-wire branch circuit, or one multiwire branch circuit, supplying the connected luminaires and need not be listed as a raceway.
d. all of the above

---

53. 410.64(C) Luminaires as Raceways. Section permits Two additional 2-wire branch circuit separately supplying one or more of the connected luminaires shall also be permitted.

a. true
b. false

---

54. 410.130(G)(1) Disconnecting Means. Disconnecting means required for existing installed luminaires without disconnecting means, at the time _____ is replaced.

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

---

55. 410.130(G)(1) Disconnecting Means. The _____ side terminals of the disconnecting means shall be guarded.

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

---

56. 422.15 Central Vacuum Outlet Assemblies (Appliances). (C) Accessible non-current-carrying metal parts of the central vacuum outlet assembly likely to become energized shall be connected to _____ in accordance with 250.110.

a. a bonding screw
b. an equipment grounding conductor
c. none of the above
d. both a & b

---

57. 422.15 Incidental metal parts such as _____ installed into or on insulating material shall not be considered likely to become energized.

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

---

58. 422.15 Small metal parts such as screws and rivets of central vacuum outlet assembly are considered items not likely to become energized and do not require connecting to an equipment grounding conductor.

a. true
b. false

---

59. 422.30 Disconnecting Means for Appliances. A means shall be provided to disconnect each appliance _____ from all ungrounded conductors.

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

---

60. 422.30 Disconnecting Means for Appliances must be _____ and _____ as the appliance disconnect.

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

---

61. 422.30 Disconnecting Means for Appliances. If an appliance is supplied by more than ___ branch circuit or feeder, these disconnecting means shall be grouped and identified as the appliance disconnect.

a. one
b. two
c. none of the above

d. both a & b

---

62. 422.30 "_____" was added to the disconnecting means requirements for appliance.

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

---

63. 422.31 Disconnection of Permanently Connected Appliances. For permanently connected appliances rated at not over_____, the branch-circuit overcurrent device shall be permitted to serve as the disconnecting means.

a. 300 volt-amperes
b. 1/8 hp
c. none of the above
d. both a & b

---

64. 422.31 Disconnection of Permanently Connected Appliances. (B) For permanently connected appliances rated _____ the branch-circuit switch or circuit breaker shall be permitted to serve as the disconnecting means where the switch or circuit breaker is within sight from the appliance or is capable of being locked in the open position.

a. over 300 volt-amperes
b. not over 300 volt-amperes
c. none of the above
d. both a & b

---

65. 422.31 Disconnection of Permanently Connected Appliances. The provision for locking or adding a lock to the disconnecting means shall be installed on or at the switch or circuit breaker used as the disconnecting means and shall remain in place _____ the lock installed.

. a. with
b. without
c. none of the above
d. both a & b

---

66. 422.31 Disconnection of Permanently Connected Appliances. Informational Note: For appliances employing unit switches, see_____.

a. 422.34
b. 422.37
c. none of the above
d. both a & b

---

67. 422.31 Disconnection of Permanently Connected Appliances. (C) Motor-Operated Appliances Rated Over 1/8 Horsepower. For permanently-connected motoroperated appliances with motors rated over 1/8 horsepower the branch-circuit switch or circuit breaker shall be permitted to serve as the disconnecting means where the switch or circuit breaker is within sight from the appliance. The disconnecting means shall comply with Sections _____.

a. 430.109

b. 430.110
c. none of the above
d. both a & b

---

68. 422.31 Disconnection of Permanently Connected Appliances. Exception: if an appliance of more than 1/8 hp is provided with a unit switch that complies with 422.34(A), (8), (C), or (D), the _____ serving as the other disconnecting means shall be permitted to be out of sight from the appliance.

a. switch
b. circuit breaker
c. none of the above
d. both a & b

---

69. 424.19(A)(2) Disconnecting Means (FESE). Means shall be provided to simultaneously disconnect the heater, motor controller(s), and supplementary overcurrent protective device(s) of all fixed electric space-heating equipment from all _____ conductors

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

---

70. 424.19(A)(2) Disconnecting Means (FESE). For heaters containing a motor(s) rated over 1/8 horsepower, this disconnecting means is permitted to serve as the required disconnecting means for both the motor controller(s) and heater by one of the following means:

a. Where the disconnecting means is in sight from the motor controller(s) and the heater, and complies with Part IX of Article 430 (motor disconnecting means)
b. Where the unit is provided with a single unit switch, the disconnecting means is permitted to be out of sight from the motor controller.
c. none of the above
d. both a & b

---

71. 424.19(A)(2) Disconnecting Means (FESE). Disconnecting means for fixed _____ with supplementary overcurrent protection where the heater does contain motor(s) rated over 1/8 horsepower generally are required to comply with Part IX of Article 430.

a. electric space-heating equipment
b. gas space-heating equipment
c. none of the above
d. both a & b

---

72. 424.28(A) Nameplate Marking (FESH). Fixed electric space-heating equipment is required to be marked for _____ current when the equipment is dual-rated for _____ current.

a. ac and dc
b. dc
c. neither a & b
d. both a & b

---

73. . 424.28(A) Nameplate Marking (FESH). Electric space-heating equipment intended for use on alternating current only, direct current only, or both shall be _____ to so indicate.

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

---

74. 424.39 Clearances - Electric Space-Heating Cables. Heating cables require at least _____ separation from the edge of surface luminaire outlet boxes and junction boxes.

a. 200 mm
b. 8 in.
c. none of the above
d. both a & b

---

75. 424.39 Clearances - Electric Space-Heating Cables. _____ clearance is required from recessed luminaires and their trims, ventilating openings, and other such openings in room surfaces.

a. 50 mm
b. 2 in.
c. none of the above
d. both a & b

---

76. 424.39 Clearances - Electric Space-Heating Cables. _____ shall not be covered by any surface-mounted equipment.

a. heating cables.
b. conductors
c. none of the above
d. both a & b

---

77. 424.39 Clearances - Electric Space-Heating Cables. Electric space-heating cables are not to be covered by the unit equipment.

a. true
b. false

---

78. 424.44(G) Heating Cables in Floors. Heating cables or panels in floors requires GFCI protection.

a. true
b. false

---

79. 424.44(G) Heating Cables in Floors. Electric heating cables installed in floors in _____ locations are required to be GFCI-protected.

a. bathrooms
b. kitchens
c. hydromassage bathtubs
d. all of the above

---

80. 424.44(G) Heating Cables in Floors. GFCI protection is now required for cables installed in electrically heated floors of kitchens as well as in bathrooms and in hydromassage bathtub locations.

a. true
b. false

---

81. 300.50 Insulated conductors over 600 Volts installed in wet locations are required to be listed for use in wet locations and shall comply with _____.
a. 310.10(C)
b. 310.9(C)
c. none of the above
d. both a & b

---

82. 426.2 and 426.31 Fixed Outdoor Electric Deicing and Snow-Melting Equipment. "_____" A system in which heat is generated in a pipe or rod, or combination of pipes and rods, by causing current to flow through the pipe or rod by direct connection to an ac voltage source from an isolating transformer.
a. Impedance Heating System
b. Isolation Transformer
c. none of the above
d. both a & b

---

83. 426.2 and 426.31 Fixed Outdoor Electric Deicing and Snow-Melting Equipment. "_____" An isolation transformer with a grounded shield between the primary and secondary windings shall be used to isolate the distribution system from the heating system.
a. Impedance Heating System
b. Isolation Transformer
c. none of the above
d. both a & b

---

84. 426.2 and 426.31 Fixed Outdoor Electric Deicing and Snow-Melting Equipment. "_____" has been replaced with "isolation" transformers since many transformers have more than two windings.
a. Dual-winding
b. Single-winding
c. none of the above
d. both a & b

---

85. 426.2 and 426.31 Fixed Outdoor Electric Deicing and Snow-Melting Equipment. "Dual-winding" has been changed at both locations to "isolation" transformers, since many transformers have more than two windings.
a. true
b. false

---

86. 426.28 Ground-Fault Protection of Equipment Fixed Outdoor Electric Deicing and Snow Melting Equipment. The elimination of GFP for mineral-insulated, metal-sheathed cable type fixed outdoor electric deicing and snow-melting equipment has been deleted.
a. true
b. false

---

87 426.28 Ground-Fault Protection of Equipment Fixed Outdoor Electric Deicing and Snow Melting Equipment. GFP of equipment is required for most fixed outdoor electric deicing and snowmelting equipment.

a. true
b. false

---

88 430.22 Motor Circuit Conductors (Single Motor). Revisions were incorporated to provide clarification as to the application of the 125 percent factor and when to apply it for sizing conductors for a single motor.

a. true
b. false

---

89. 430.22 Motor Circuit Conductors (Single Motor). Conductors that supply a continuous duty single motor must have an ampacity of not less than 125 percent of the motor FLA taken from the applicable table, or not less than specified in 430.22 includes:

a. DC Motors-Rectifier Supplied
b. Multispeed Motor
c. Wye-Start, Delta-Run Motor
d. all of the above

---

90. 430.22 Motor Circuit Conductors (Single Motor). Conductors that supply a continuous duty single motor must have an ampacity of not less than 125 percent of the motor FLA taken from the applicable table, or not less than specified in 430.22 includes:

a. Part-Winding Motor
b. Other Than Continuous Duty
c. Separate Terminal Enclosure
d. all of the above

---

91. 430.22 Motor Circuit Conductors (Single Motor). Conductors that supply a continuous duty single motor must have an ampacity of not less than 125 percent of the motor FLA taken from the applicable table, or not less than specified in 430.22 (G) Conductors for Small Motors includes _____.

a. 18 AWG Copper
b. 16 AWG Copper
c. none of the above
d. both a & b

---

92. 430.22 Motor Circuit Conductors (Single Motor). Revisions were incorporated to provide clarification as to the application of the 125 percent factor and when to apply it for sizing conductors for a single motor.

a. true
b. false

---

93. 430.22(G) Conductors for Small Motors. Conductors for small motors shall not be smaller than _____ AWG unless otherwise permitted in 430.22(G)(l) or 430.22(G)(2).

a. 16
b. 14
c. 12
d. both a & b

---

94. 430.22(G) Conductors for Small Motors. Where installed in a cabinet or enclosure, _____ AWG individual copper conductors, or copper conductors of either a jacketed multiconductor cable assembly or a flexible cord shall be permitted, under specific conditions

a. 16
b. 18
c. 12
d. both a & b

---

95. 430.22(G) Conductors for Small Motors. New provisions have been added at 430.22(G) to allow the use of 18 and 20 AWG conductors under specific conditions for small motors circuit conductors.

a. true
b. false

---

96. 430.22(G) Conductors for Small Motors. (G) Conductors for Small Motors. Conductors for small motors shall not be smaller than 14 AWG unless otherwise permitted in _____.

a. 430.22(G)(1)
b. 430.22(G)(2)
c. none of the above
d. both a & b

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97. 430.22(G) Conductors for Small Motors. (1)18 AWG Copper. Where installed in a cabinet or enclosure, 18 AWG individual copper conductors, copper conductors that are part of _____ in a flexible cord shall be permitted, under certain conditions.

a. a jacketed multiconductor cable assembly
b. copper conductors in a flexible cord
c. none of the above
d. both a & b

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98. 430.22(G) Conductors for Small Motors. (1)18 AWG Copper. Where installed in a cabinet or enclosure, 18 AWG individual copper conductors, copper conductors that are part of a jacketed multiconductor cable assembly, or copper conductors in a flexible cord shall be permitted, under either of the following sets of conditions: (1) Motor circuits with a full-load ampacity greater than 3.5 amperes or less than or equal to 5 amperes provided all the following conditions are met:

a. Circuit is protected in accordance with 430.52
b. Circuit is provided with maximum Class 10 overload protection in accordance with 430.32
c. Overcurrent protection is provided in accordance with 240.4(D)(1)(2)
d. all of the above

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99. 430.22(G) Conductors for Small Motors. (1)18 AWG Copper. Where installed in a cabinet or enclosure, 18 AWG individual copper conductors, copper conductors that are part of a jacketed multiconductor cable assembly, or copper conductors in a flexible cord shall be permitted, under either of the following sets of conditions: (2) Motor circuits with a full-load ampacity of 3.5 amperes or less provided all the following are met:

a. Circuit is protected in accordance with 430.52

b. Circuit is provided with maximum Class 20 overload protection in accordance with 430.32
c. Overcurrent protection is provided in accordance with 240.4(D)(1){2). (2) Motor circuits with a full-load ampacity of 3.5 amperes
d. all of the above

---

100. 430.22(G) Conductors for Small Motors. (2) 16 AWG Copper. Where installed in a cabinet or enclosure, 16 AWG individual copper conductors, copper conductors that are part of a jacketed multiconductor cable assembly, or copper conductors in a flexible cord shall be permitted under either of the following sets of conditions: (1) Motor circuits with a full-load ampacity greater than 5.5 amperes and less than or equal to 8 amperes provided all the following conditions are met:
a. Circuit is protected in accordance with 430.52
b. Circuit is provided with maximum Class 10 overload protection in accordance with 430,32
c. Overcurrent protection is provided in accordance with 240.4(D)(2)(2)
d. all of the above

---

101. 430.22(G) Conductors for Small Motors. (2) 16 AWG Copper. Where installed in a cabinet or enclosure, 16 AWG individual copper conductors, copper conductors that are part of a jacketed multiconductor cable assembly, or copper conductors in a flexible cord shall be permitted under either of the following sets of conditions: (2) Motor circuits with a full-load ampacity of 5.5 amperes or less provided all the following are met:
a. Circuit is protected in accordance with 430.52
b. Circuit is provided with maximum Class 20 overload protection in accordance with 430.32
c. Overcurrent protection is provided in accordance with 240.4(D)(2)(2)
d. all of the above

---

102. 430.24 Circuit Conductors for Several Motors. Conductors supplying several motors, or a motor(s) and other load(s), shall have an ampacity not less than the sum of each of the following:
a. 125 percent of the full-load current rating of the highest rated motor as determined by 430.6(A)
b. the sum of the full-load current ratings of all the other motors in the group, as determined by 430.6(A)
c. none of the above
d. both a & b

---

103. 430.24 Circuit Conductors for Several Motors. Conductors supplying several motors, or a motor(s) and other load(s), shall have an ampacity not less than the sum of each of the following:
a. 100 percent of the noncontinuous non-motor load
b. 125 percent of the continuous non-motor load
c. none of the above
d. both a & b

---

104. 430.24 Circuit Conductors for Several Motors. Exception No. 3: Where the circuitry is interlocked so as to prevent _____ operation of selected motors or other loads, the

conductor ampacity shall be permitted to be based on the summation of the currents of the motors and other loads to be operated simultaneously that results in the highest total current.

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

---

105. 430.52(C)(7) Rating for Individual Motor Circuit Motor Short-Circuit Protector. A new Informational Note has been added to clarify that a motor short-circuit protector is a fused device and is not _____.

a. an instantaneous trip circuit breaker
b. fusible device
c. neither a or b
d. both a & b

---

106. 430.52(C)(7) Rating for Individual Motor Circuit Motor Short-Circuit Protector. A new informational note has been added to clarify chat a motor short-circuit protector is not a fusible device.

a. true
b. false

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107. 430.53 Several Motors or Loads on One Branch Circuit. Two or more motors or one or more motors and other loads shall be permitted to be connected to the same branch circuit under conditions specified in _____.

a. 430.53(D)
b. 430.53(A), (B), or (C).
c. none of the above
d. both a & b

---

108. 430.53 Several Motors or Loads on One Branch Circuit . Two or more motors or one or more motors and other loads shall be permitted to be connected to the same branch circuit under conditions. The branch circuit protective device shall be _____.

a. fuses
b. inverse time circuit breakers
c. none of the above
d. both a & b

---

109. 430.53(C)(l) and (C)(2) Several Motors or Loads on One Branch Circuit - Other Group Installations. Overload device and the motor controller for a group of motors are either required to be _____.

a. listed for group installation
b. sized not to exceed the value permitted by 430,52 for a single motor
c. none of the above
d. both a & b

---

110. 430.53(C)(l) and (C)(2) Several Motors or Loads on One Branch Circuit - Other Group Installations. Overload device and the motor controller for a group of motors are not

required to be listed for group installation only if the size exceeds the value permitted by 430.52 for a single motor.

a. true
b. false

---

111. 430.53(D)(3) Several Motors or Loads on One Branch Circuit - Single Motor Tap. The branch circuit protective devices are now permitted to provide _____ for group motor installations as well as a listed manual motor controller marked "Suitable for Tap Conductor Protection in Group Installations"

a. short-circuit
b. ground-fault protection
c. none of the above
d. both a & b

---

112. 430.53(D)(3) Several Motors or Loads on One Branch Circuit - Single Motor Tap. The branch-circuit protective devices are now permitted to provide short circuit and ground-fault protection for group motor installations and are not required to be identified for group installations.

a. true
b. false

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113. 430.63 Rating or Setting - Motor and Other Loads. Where a feeder supplies a motor load and other load(s), the feeder protective device shall have a rating not less than that required for the sum of the other load(s), plus the following:

a. For a single motor, the rating permitted by 430.52
b. For a single hermetic refrigerant motor-compressor, the rating permitted by 440.22
c. For two or more motors, (he rating permitted by 430.62
d. all of the above

---

114. 430.63 Rating or Setting - Motor and Other Loads. Exception: Where the feeder overcurrent device provides the overcurrent protection for a motor control center, the provisions of _____ shall apply.

a. 430.84
b. 430.94
c. none of the above
d. both a & b

---

115. 430.63 Rating or Setting - Motor and Other Loads. "lighting loads" was replaced with "_____" to indicate the rating of motor feeder short-circuit and ground-fault protection, for a motor load applies to more than lighting loads.

a. other loads
b. motor
c. none of the above
d. both a & b

---

116. 430.225(B)(l) Type of Overload Device (Motors Over 600 Volts, Nominal). Each motor must be protected against _____ by a thermal protector integral with the motor or external current-sensing devices, or both.

a. overloads

b. failure to start
c. none of the above
d. both a & b

---

117. 430.225(B)(l) Type of Overload Device (Motors Over 600 Volts, Nominal). Protective device settings for each motor circuit to be determined under _____ supervision.

a. general
b. engineering
c. contractor
d. both a & b

---

118. 430.225(B)(l) Type of Overload Device (Motors Over 600 Volts, Nominal). Engineering supervision is required to determine the sizing of overload and short-circuit protective devices for motors over _____ volts.

a. 300
b. 600
c. none of the above
d. both a & b

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119. 445.19 Generators Supplying Multiple Loads. A single generator supplying more than one load, or multiple generators operating in parallel, are permitted to supply either of the following:

a. A vertical switchboard with separate sections
b. Individual enclosures with overcurrent protection tapped from a single feeder for load separation and distribution if a generator(s) is provided with overcurrent protection meeting the requirements of 240.15(A)
c. none of the above
d. both a & b

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120. 445.19 Generators Supplying Multiple Loads. A revision to this section clarifies the application of tap conductors where multiple enclosures are supplied from a generator.

a. true
b. false

2011 NEC Code Updates Part 3-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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