Continuing Education, For UDC Electrical Inspectors, Commercial Electrical Inspectors, Master Electricians and Journeyman Electricians.

The following test is for Continuing Education Credits for the above-mentioned Licenses and Credentials, All answers are found in the 2008 NEC. Please call Brett at (920) 740-4348 with any questions or concerns with this or any other issue you may have.

All questions have a correct answer that can be found in the codebook, when your test is completed read the information at the bottom of the page and send the proper items in to obtain your credit.

Electrical Continuing Ed Test 9

Article 100: Definitions

1. _____ means the current, in amperes, that a conductor can carry continuously under the conditions of use without exceeding its temperature rating.
a. Resistance
b. Joule Heating
c. Ampacity
d. Current Rating

2. _____ means a generic term for a group of noninflammable synthetic chlorinated hydrocarbons used as electrical insulating media.

a. Askarel
b. Plenum
c. Mineral Oil
d. Regulator

3. _____ means connected to establish electrical continuity and conductivity.

a. Bonding
b. Branch Circuit
c. Electrically Isolated
d. Insulated Conductor

4. _____ means without live parts exposed to a person on the operating side of the equipment.

a. Double Ended Switchboard
b. Disconnecting Means
c. Fusible Switch
d. Dead Front

5. _____ means capable of being operated without exposing the operator to contact with live parts.

a. Laterally Operable
b. Internally Operable
c. Externally Operable
d. Linearly Operable

6. _____ means any shaftway, hatchway, well hole, other vertical opening or space in which an elevator or dumbwaiter is designed to operate.

a. Handhole Enclosure
b. Nonlinear Load
c. Hoistway
d. Receptacle

7. _____ means a conductor used to connect the system grounded conductor or the equipment to a grounding electrode or to a point on the grounding electrode system.

a. Multiwire Conductor
b. Grounding Electrode Conductor
c. Macroscopic Conductor
d. Microscopic Conductor

8. _____ means a device that provides a means for connecting communication system(s) grounding conductor(s) and bonding conductor(s) at the service equipment or at the disconnecting means for buildings or structures by a feeder or branch circuit.

a. Isolated Bonding Termination
b. Insulated Bonding Termination
c. Intrasystem Bonding Termination
d. Intersystem Bonding Termination

9._____ means energized conductive components.

a. Live Parts
b. Overload
c. Overcurrent
d. Neutral Conductor

10. _____ means a compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system.

a. Plenum
b. Twisted Pair
c. Coaxial Cable
d. Service Drop

11. _____ means a fuse with provision for the escape of arc gases, liquids, or solid particles to the surrounding atmosphere during circuit interruption.

a. Power Fuse Unit
b. Vented Power Fuse
c. Expulsion Fuse Unit
d. Nonvented Power Fuse

12. _____ means constructed or protected so that exposure to the weather will not interfere with successful operation.

a. Watertight
b. Airtight
c. Weatherproof
d. Ventilated

13. _____means complete wiring installations shall be free from short circuits, ground faults, or any connections to ground other than as required or permitted elsewhere in this code.

a. Interconnect Technology
b. Circuit Impedance
c. Interrupting Rating
d. Wiring Integrity

14. _____ means parts of electrical equipment that in ordinary operation produce arcs, sparks, flames, or molten metal shall be enclosed or separated and isolated from all combustible material.

a. Flash Protection
b. Arcing Parts
c. High Leg Marking
d. Relays

15. _____means any electrical circuit that energizes signaling equipment.

a. Show Window
b. Signaling Circuit
c. Service Point
d. Surge Arrester

Article 110: Requirements for Electrical Installations

16. Unless identified for use in the operating environment, no conductors or equipment shall be located in _____or _____ locations; where exposed to gases, fumes, vapors, liquids, or other agents that have a deteriorating effect on the conductors or equipment; or where exposed to excessive temperatures.

a. dry; parched
b. dry; wet
c. ground; plenum
d. damp; wet

17. Unused openings shall be closed to afford protection substantially equivalent to the wall of the equipment *other than those intended for:*

a. the operation of equipment
b. mounting purposes
c. (permitted as part of) the design for listed equipment
d. all of the above

18. Electrical equipment shall be firmly secured to the surface on which it is mounted. _____ driven into holes in masonry, concrete, plaster, or similar materials shall not be used.

a. Wooden Plugs
b. Metal Wall Plugs
c. Toggle Bolts
d. Fiber Plugs

19. Conductors shall be spliced or joined with splicing devices identified for the use or by brazing , welding, or soldering with a
_____ metal or alloy.

a. Nonfusible
b. Fusible
c. Similar
d. Dissimilar

20. The temperature rating associated with the ampacity of a conductor shall be selected and coordinated so as not to exceed the
_____ temperature rating of any connected termination, conductor, or device.

a. highest
b. lowest
c. same
d. different

21. Enclosures (other than surrounding fences or walls) of switchboards, panelboards, industrial control panels, motor control centers, meter sockets, and motor controllers, rated not over _____volts nominal and intended for such locations, shall be marked with an enclosure-type number as shown in Table 110.20.

a. 600
b. 400
c. 200
d. 100

22. Electrical equipment rooms or enclosures housing electrical apparatus that are controlled by a _____ shall be considered accessible to qualified persons.

a. Key
b. Security Device
c. Latch
d. Lock

23. At least _____entrance(s) to enclosures for electrical installations as described in 110.31 not less than 610 mm wide and 2.0 high shall be provided to give access to the working space about electrical equipment.

a. Several
b. Two
c. Three
d. None of the above

24. Each disconnecting means shall be _____ marked to indicate its purpose unless located and arranged so the purpose is evident.

a. boldly
b .carefully
c. quickly
d. legibly

25. Conductors and cables in tunnels shall be located above the tunnel floor and so placed or guarded to protect them from _____ damage.

a. Cold
b. Physical
c. Heat
d. Blunt

26. High-voltage conductors in tunnels shall be installed in:

a. Metal Conduit and Other Metal Raceway
b. Type MC Cable or Other Approved Multiconductor Cable
c. Both a and b
d. None of the above

27. All non-current-carrying metal parts of electrical equipment and all metal raceways and cable sheaths shall be _____ grounded and bonded to all metal pipes and rails at the portal and at intervals not exceeding 300 m throughout the tunnel.

a. Adequately
b. Strongly
c. Firmly
d. Solidly

28. Enclosures for use in _____shall be dripproof, weatherproof, or submersible as required by the environmental conditions.

a. Hoistways
b. Plenums
c. Tunnels
d. Elevators

29. Manhole openings for personnel shall be located where they are not directly above electrical equipment or conductors in the enclosure. Where this is not practicable, either a protective barrier or a fixed _____shall be provided.

a. Ladder
b. Cover
c. Vault
d. Cable

30. Covers shall be over _____ pounds or other wised designed to require the use of tools to open.

a. 50
b. 75
c. 100
d. 125

31. _____ means utilization equipment, generally other than industrial, that is normally built in standardized sizes or types and is installed or connected as a unit to perform one or more functions such as clothes washing, air conditioning, food mixing, deep frying, and so forth.

a. Machinery
b. Device
c. Appliance
d. All of the above

32. _____ means acceptable to the authority having jurisdiction.

a. Approved
b. Standardized
c. Uniform
d. Accredited

33. _____ means a device that, by insertion in a receptacle, establishes a connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle.

a. Adapter
b.Interface
c. Attachment Plug
d. Receptacle

34. _____means self-acting, operating by its own mechanism when actuated by some impersonal influence, as, for example, a change in current, pressure, temperature, or mechanical configuration.

a. Mechanical
b. Automatic
c. Programmed
d. Voluntary

35. _____means a reliable conductor to ensure the required electrical conductivity between metal parts required to be electrically connected.

a. Equipment Grounding Conductor
b. Stingers
c. Bonding Jumper
d. None of the above

36. _____means the circuit conductors between the final overcurrent device protecting the circuit and the outlet (s).

a. Branch Circuit
b. Simple Series Circuit
c. Parallel Circuit
d. Combination Circuit

37. _____means a branch circuit that supplies two or more receptacles or outlets for lighting and appliances.

a. Branch Circuit, Multiwire
b. Branch Circuit, General-Purpose
c. Branch Circuit, Individual
d. Branch Circuit, Appliance

38. _____ means a device designed to open and close a circuit by nonautomatic means and to open the circuit automatically on a predetermined overcurrent without damage to itself when properly applied within its rating.

a. Short Circuit
b. Switchgear
c. Fuse
d. Circuit Breaker

39. The automatic opening means can be integral, direct acting with the circuit breaker, or remote from the circuit breaker.

a. True
b. False

40. (As applied to circuit breakers) _____means a qualifying term indicating that no delay is purposely introduced in the tripping action of the circuit breaker.

a. Adjustable
b. Instantaneous Trip
c. Inverse Time
d. Nonadjustable

41. _____means rendered inaccessible by the structure or finish of the building.

a. Covered
b. Exposed
c. Concealed
d. Enclosed

42. _____means a conductor encased within material of composition or thickness that is not recognized by this Code as electrical insulation.

a. Bare Conductor
b. Insulated Conductor
c. Covered Conductor
d. None of the above

43. _____means a separate portion of a conduit or tubing system that provides access through a removable cover (s) to the interior of the system at a junction of two or more sections of the system or at a terminal point of the system.

a. Conduit Body
b. Equipment Grounding Conductor
c. Box Conductors
d. Piping System

44. _____means a device that establishes a connection between two or more conductors or between one or more conductors and a terminal by means of mechanical pressure and without the use of solder.

a. Ground Fault Circuit Interrupter
b. Transformer
c. Receptacle
d. Pressure Conductor (Solderless)

45. _____means a load where the maximum current is expected to continue for 3 hours or more.

a. Gable Endwall
b. Non-continuous Load
c. Continuous Load
d. Truss Bracing

46. _____means a device or group of devices that serves to govern, in some predetermined manner, the electric power delivered to the apparatus to which it is connected.

a. Speed Controller
b. Controller
c. Alternative Drive Systems
d. None of the above

47. _____means localization of an overcurrent condition to restrict outages to the circuit or equipment affected, accomplished by the choice of overcurrent protective devices and their ratings or settings.

a. Arc Flash Protection
b. Coordination (Selective)
c. Branch Breaker Combination
d. Load Side Fault Current

48. _____means conductors drawn from a copper-clad aluminum rod with the copper metallurgically bonded to an aluminum core.

a. Insulators
b. Semiconductors
c. Iron Conductors
d. Copper-Clad Aluminum Conductors

49. _____ means an enclosure designed for surface mounting that has swinging doors or covers secured directly to and telescoping with the walls of the box proper.

a. Cutout Box
b. Junction Box
c. Outlet Box
d. None of the above

50. _____ means the ratio of the maximum demand of a system, or part of a system, to the total connected load of a system or the part of the system under consideration.

a. Real Power
b. Demand Factor
c. Entire Load
d. All of the above

51. _____means a unit of an electrical system that carries or controls electric energy as its principle function.

a. Device
b. Transformer
c. Mutual Induction
d. Current

52. _____means a device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

a. Disconnect
b. Power Supply
c. Main Disconnect
d. Disconnecting Means

53. _____means operation at a substantially constant load for an indefinitely long time.

a. Intermittent Duty
b. Periodic Duty
c. Continuous Duty
d. Short-Time Duty

54. _____means power production, distribution, and utilization equipment and facilities, such as electric utility systems that deliver electric power to the connected loads, that are external to and not controlled by an interactive system.

a. Electricity Generation
b. Electromechanical Generators
c. Distributed Generation
d. Electric Power Production and Distribution Network

55. _____means electrically connected to, or is, a source of voltage.

a. De-energized
b. Energized
c. Dead Front
d. Electrical Hazard

56. _____means all circuit conductors between the service equipment, the source of a separately derived system, or other power supply source and the final branch-circuit overcurrent device.

a. Feeder
b. Feeder Wires
c. Feeder Pipe
d. Branch Circuit Wires

57. _____means a string of outdoor lights that is suspended between two points.

a. Cable Harness
b. Lampholder
c. Festoon Lighting
d. Rigid Lighting

58. _____means an accessory such as a locknut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function.

a. Clipsal Fitting
b. Main Switch
c. Fitting
d. Conduit

59. _____ means connected to ground or to a conductive body that extends the ground connection.

a. Electrical Circuit
b. Securely Bonded
c. Earthing
d. Grounded

60. _____ means a conducting object through which a direct connection to earth is established.

a. Grounding Electrode
b. Guarded
c. Grounded Conductor
d. Ground Fault

61. _____ means an electric power production system that is operating in parallel with and capable of delivering energy to an electric primary source supply system.

a. Syntellect Interactive Service
b. Utility Outage Tracking System
c. Power System Coordination
d. Interactive System

62. _____means a complete lighting unit consisting of a light source such as a lamp or lamps, together with the parts designed to position the light source and connect it to the power supply.

a. Lampholder
b. Ballast
c. Light source
d. Luminaire

63. _____ means an assembly of one or more enclosed sections having a common power bus and principally containing motor control units.

a. Manual Means
b. Motor Control Center
c. Automatic Means
d. Contactor

64. _____means a type of surface, flush, or freestanding raceway designed to hold conductors and receptacles, assembled in the field or at the factory.

a. Raceway Assembly
b. Surge Protector
c. Multioutlet Assembly
d. Circuit Tester

65. _____ means the conductor connected to the neutral point of a system that is intended to carry current under normal conditions.

a. Neutral Point
b. Neutral Conductor
c. Resistor
d. None of the above

66. _____means action requiring personal intervention for its control.

a. Voluntary
b. Manual
c. Preset
d. Nonautomatic

67. _____ means a load where the wave shape of the steady-state current does not follow the wave shape of the applied voltage.

a. Linear Load
b. Total Load
c. Nonlinear Load
d. Running Load

68. _____ means any current in excess of the rated current of equipment or the ampacity of a conductor.

a. Overload
b. Excess Current
c. Short Circuit
d. Overcurrent

69. _____ means a contact device installed at the outlet for the connection of an attachment plug.

a. Receptacle outlet
b. Receptacle
c. Three-wire receptacle
d. Faceplate

70. _____means any electrical circuit that controls any other circuit through a relay or an equivalent device.

a. Bridge Circuit
b. Remote- Control Circuit
c. Branch Circuit
d. Alarm Circuit

71. _____ means a premises wiring system whose power is derived from a source of electric energy or equipment other than a service.

a. Service
b. Sealable Equipment
c. Separately Derived System
d. None of the above

72. ____means the point of connection between the facilities of the serving utility and the premises wiring.

a. Point of Attachment
b. Service Point
c. Service Drop
d. Service Connection

73. _____ means the total components and subsystems that, in combination, convert solar energy into electric energy suitable for connection to a utilization load.

a. Integrated Photovoltaic System
b. Photovoltaic Power Stations
c. Photovoltaic Power Plant
d. Solar Photovoltaic System

74. _____ means a switch rated in horsepower that is capable of interrupting the maximum operating overload current of a motor of the same horsepower rating as the switch at the rated voltage.

a. Bypass Isolation Switch
b. General Use Switch
c. Isolating Switch
d. Motor-Circuit Switch

75. _____ means an inverter intended for use in parallel with an electric utility to supply common loads that may deliver power to the utility.

a. Static Power Inverter
b. Utility-Interactive Inverter
c. Alternative Energy Solutions
d. Renewable Energy

76. _____ means equipment that utilizes electric energy for electronic, electromechanical, chemical, heating, lighting, or similar purposes.

a. Utilization Equipment
b. Power Distribution System
c. Grounding Device
d. Circuit Protection Equipment

77. _____ means an overcurrent protective device with a circuit opening fusible part that is heated and severed by the passage of overcurrent through it.

a. Breaking Capacity
b. Circuit
c. Fuse
d. Voltage Drop

78. _____means a fuse without intentional provision for the escape of arc gases, liquids, or solid particles to the atmosphere during circuit interruption.

a. Controlled Vented Power Fuse
b. Expulsion Fuse Unit
c. Nonvented Power Fuse
d. Power Fuse Unit

79. _____means an assembly of two or more single-pole fuses.

a. Surface Mount Fuse
b. Multiple Fuse
c. Semi-enclosed Fuse
d. Time Delayed Fuse

80. _____ means a device designed to close, open, or both, one or more electrical circuits.

a. Actuator
b. Contact
c. Switching Device
d. Multi-throw Switch
.

Article 200: Use and Identification of Grounded Conductors

81. The continuity of a _____ conductor shall not depend on a connection to a metallic enclosure, raceway, or cable armor.

a. Super
b. Semi
c. Insulated
d. Grounded

82. An insulated grounded conductor larger than 6 AWG shall be identified by one of the following means EXCEPT:

a. By a continuous white or gray outer finish.
b. By a broken white or gray outer finish.
c. By three continuous white stripes along its entire length on other than green insulation.
d. At the time of installation, by a distinctive while or gray marking at its terminations.

83. The identification of terminals to which a grounded conductor is to be connected shall be substantially _____in color.
a. Void
b. Gray
c. White
d. Different

84. For devices with screw shells, the terminal for the grounded conductor shall be the one _____ to the screw shell.

a. Unrelated
b. Disconnected
c. Connected
d. Isolated

Article 210: Branch Circuits

85. No grounded conductor shall be attached to any terminal or lead so as to _____ the designated polarity.

a. Reverse
b. Invalidate
c. Cancel
d. Carry Out

86. Each multiwire branch circuit shall be provided with a means that will simultaneously disconnect all ungrounded connectors at the point where the branch circuits _____.

a. Integrates
b. Terminates
c. Extends
d. Originates

87. Where the premises wiring system has branch circuits supplied from more than one nominal voltage system, each ungrounded conductor of a branch circuit shall be identified by phase or line and system at all _____ points.

a. Termination
b. Connection
c. Splice
d. All of the above

88. In dwelling units and guest rooms or guest suites of hotels, motels, and similar occupancies, the voltage shall not exceed 120 volts, nominal, between conductors that supply the terminals of the following:

a. Luminaires
b. Cord-and-plug connected loads 1440 volt-amperes, nominal, or less or less than ¼ hp
c. Emergency Transfer Cabinet
d. Both a and b

89. Branch circuits shall not be derived from _____ unless the circuit supplied has a grounded conductor that is electrically connected to a grounded conductor of the system supplying the _____.

a. Autotransformers
b. Audio impedance-matching transformer
c. Step regulators
d. Inductive voltage divider circuit

90. The minimum number of branch circuits shall be determined from the total _____ and the size or rating of the circuits used.

a. Calculated load
b. Ampere rating
c. Branch-circuit load
d. Volt-amperes

91. The rating of any one cord-and-plug connected utilization equipment not fastened in place shall not exceed _____ percent of the branch-circuit ampere rating.

a. 50
b. 80
c. 70
d. 40

92. In kitchens, pantries, breakfast rooms, dining rooms, and similar areas of dwelling units, receptacle outlets for _____ spaces shall be installed in accordance with 210.52 (C) (1) through (C) (5).

a. Sink
b. Countertop
c. Dishwasher
d. Cutting Board

93. Balconies, decks, and porches that are accessible from inside the dwelling unit shall have at least one receptacle outlet installed within the _____ of the balcony, deck, or porch.

a. Border
b. Limit
c. Perimeter
d. Boundary

94. At least one wall _____ lighting outlet shall be installed in hallways, stairways, attached garages, and detached garages with electric power.

a. Manually-controlled
b. Remote-controlled
c. Motion-controlled
d. Switch-controlled

95. Grounded conductors that are not connected to a(n) _____ device shall be permitted to be sized at 100 percent of the continuous and noncontinuous load.

a. Interrupted Current
b. Predetermined Current
c. Normal Current
d. Overcurrent

96. Where installed in a metal raceway or other metal enclosure, all conductors of all feeders using a common _____ conductor shall be enclosed within the same raceway or other enclosure as required in 300.20.

a. Partial
b. Metallic
c. Neutral
d. Isotropic electrical

Article 220: Branch-Circuit, Feeder, and Service Calculations

97. The calculated load of a feeder or service shall not be less than the _____ of the loads on the branch circuit supplied, as determined by Part II of this article, after any applicable demand factors permitted by Part III or IV have been applied.

a. Sum
b. Amount
c. Difference
d. Variation

Article 225: Outside Branch Circuits and Feeders

98. Where within 3.0 m (10 ft) of any building or structure other than supporting poles or towers, open individual (aerial) overhead conductors shall be _____ or covered.

a. Protected
b. Filled
c. Padded
d. Insulated

99. Overhead conductors for festoon lighting shall not be smaller than 12 AWG unless the conductors are supported by _____ wires.

a. Contact
b. Cross-contact
c. Messenger
d. Ground

100. Where a feeder overcurrent device is not readily accessible, _____ overcurrent devices shall be installed on the load side, shall be mounted in a readily accessible location, and shall be of a lower ampere rating than the feeder overcurrent device.

a. Branch-circuit
b. Resistive circuit
c. Electronic circuit
d. Linear circuit

Article 230: Services

101. _____ conductors shall be permitted to be splice or tapped in accordance with 110.14, 300.5 (E), 300.13, and 300.15.

a. Service-entrance
b. Service-lateral
c. Underground service-lateral
d. Lateral

102. Service-entrance conductors shall be installed in accordance with the applicable requirements of this Code covering the type of wiring method used. Which one of the following is NOT one of the approved methods:

a. Open wiring on insulators
b. Flexible metal conduit over 2 m long
c. Type IGS cable
d. Intermediate metal conduit

103. Service cables, where subject to physical damage, shall be protected by any of the following EXCEPT:

a. Rigid metal conduit
b. Intermediate metal conduit
c. Schedule 80 PVC conduit
d. Wire molding

104. Service heads and goosenecks in service-entrance cables shall be located above the point of _____ of the service-drop conductors to the building or other structure.

a. Disconnection
b. Connection
c. Attachment
d. Protection

105. Each service disconnect shall _____ disconnect all ungrounded service conductors that it controls from the premises wiring system.

a. Simultaneously
b. Consecutively
c. Separately
d. Individually

Article 240: Overcurrent Protection

106. No overcurrent device shall be inserted in a grounded service conductor except a _____ that simultaneously opens all conductors of the circuit.

a. Fuse
b. Actuator lever
c. Solenoid
d. Circuit breaker

107. Overcurrent protection shall be permitted to be installed as close as _____ as to the storage battery terminals in a non-hazardous location.

a. Reasonable
b. Possible
c. Practicable
d. Achievable

108. A circuit breaker shall be of such design that any alteration of its _____ or the time required for its operation requires dismantling of the device or breaking of a seal for other than intended adjustments.

a. Overloaded Circuit
b. Trip point
c. Ground Fault
d. Short Circuit

109. For calculated applications, the engineer shall ensure that the downstream circuit breakers that are part of the series combination remain _____ during the interruption period of the line side fully rated, current-limiting device.

a. Passive
b. Activated
c. Selected
d. Inactive

110. Conductors supplied by the secondary side of a transformer shall be permitted to be protected by overcurrent protection provided in the_____ side of the transformer, provided the primary device time-current protection characteristic, multiplied by the maximum effective primary-to secondary transformer voltage ratio, effectively protects the secondary conductors.

a. Main
b. Key
c. Core
d. Supply

Article 250: Grounding and Bonding

111. Electrical systems that are grounded shall be connected to earth in a manner that will limit the voltage imposed by lightning, line surges, or unintentional contact with higher voltage lines and that will stabilize the voltage to earth during _____ operation.

a. Normal
b. Abnormal
c. Usual
d. Standard

112. The earth shall not be considered as an effective ground-fault current path.

a. True
b. False

113. Currents that introduce noise or data errors in electronic equipment shall be considered the objectionable currents addressed in this section.

a. True
b. False

114. Grounding conductors and bonding jumpers shall be connected which of the following means:

a. Listed pressure connectors
b. Exothermic welding process
c. Terminal bars
d. All of the above

115. Connections devices or fittings that depend solely on solder shall not be used.

a. True
b. False

116. Ground clamps or other fittings shall be approved for general use without protection or shall be protected from physical damage by which of the following:

a. In installations where they are not likely to be damaged
b. Where enclosed in metal, wood, or equivalent protective covering
c. Both a and b
d. None of the above

117. Which of the following circuits shall not be grounded:

a. Secondary circuits of lighting systems as provided in 680.23 (A)(2).
b. Primary circuits of lighting systems
c. Circuits in health care facilities as provided in 517.61 and 517.160
d. a and b

118. For services that are dual fed in a common enclosure or grouped together in separate enclosures and employing a secondary tie, a single grounding electrode_____ connection to the tie point of the grounded conductor(s) from each power source shall be permitted.

a. Neutral Service Conductor
b. Service Entrance Conductor
c. Ground Ring
d. Conductor

119. Where a main bonding jumper or a system bonding jumper is a screw only, the screw shall be identified with a _____finish that shall be visible with the screw installed.

a. Blue
b. Red
c. Green
d. White

120. Where a(n) _____bonding jumper of the wire type is run with the derived phase conductors from the source of a separately derived system to the first disconnecting means, it shall be sized in accordance with 250.102 , based on the size of the derived phase conductors.

a. Equipment
b. System
c. Main
d. None of the above

121. Where more than one separately derived system is installed, it shall be permissible to connect a _____ from each separately derived system to a common grounding electrode conductor.

a. Wire
b. Tap
c. Busbar
d. Feeder

122. This connection shall be not made at the same point on the separately derived system where the system bonding jumper is installed.

a. True
b. False

123. A ground ring encircling the building or structure, in direct contact with the earth, consisting of at least _____ feet of bare copper conductor not smaller than 2 AWG.

a. 20
b. 12
c. 25
d. 15

124. The following systems and materials shall not be used as grounding electrodes:

a. Zinc Coated steel
b. Metal underground gas piping systems
c. Aluminum
d. b and c

125. Rod, pipe, and plate electrodes shall be free from _____ coatings such as paint or enamel.

a. Moisture resistant
b. Conductive
c. Nonconductive
d. Permanent

126. _____electrodes shall not be installed not less than 750 mm below the surface of the earth.

a. Rod
b. Plate
c. Pipe
d. a and c

127. The grounding electrode conductor shall be of copper, aluminum, or copper-clad aluminum. the conductor shall be:

a. Solid or stranded
b. Insulated
c. Covered or bare
d. All of the above

128. _____ aluminum or copper clad aluminum grounding conductors shall not be used where in direct contact with masonry or the earth or where subject to corrosive conditions.

a. Covered
b. Bare
c. Insulated
d. Solid

129. Where exposed, a grounding electrode conductor or its enclosure shall be securely fastened to the surface on which it is _____.

a. Carried
b. Terminated
c. Installed
d. Bonded

130. Grounding electrode conductor(s) shall be installed in one continuous length without a splice or joint except as permitted in which of the following:

a. Splicing shall be permitted only by irreversible compression-type connectors listed as grounding and bonding equipment or by the exothermic welding process.
b. Sections of busbars shall be permitted to be connected together to form a grounding electrode conductor.
c. a OR b
d. a AND b

131. Ferrous metal enclosures shall be required to be electrically continuous.

a. True
b. False

132. The equipment grounding conductor run with or enclosing the circuit conductors shall be one or more or a combination of which of the following:

a. Rigid metal conduit
b. Intermediate metal conduit
c. Electrical metallic tubing
d. All of the above

133. The terminal for the connection of the equipment grounding conductor shall be identified by all of the following EXCEPT:

a. A green, hexagonal, readily removable terminal nut
b. A green, not readily removable terminal screw with a hexagonal head
c. A green pressure wire connector
d. If the terminal for the grounding conductor is not visible, the conductor source of separately derived systems shall be made in accordance with 250.30(A)(1).

Article 280: Surge Arresters, Over 1kV

134. A surge arrester shall not be installed where the rating of the surge arrester is _____the maximum continuous phase to ground power frequency voltage available at the point of application.

a. Greater than
b. Equal to
c. Less than
d. None of the above

135. Where used at a point on a circuit, a surge arrester shall be connected to _____ungrounded conductor (s).

a. A single
b. Each
c. The identified
d. Energized

136. Surge arresters shall be permitted to be located:

a. Indoors
b. Outdoors
c. a and b
d. In accessible locations to unqualified persons

137. The arrester grounding conductor shall be connected to which one of the following:

a. Ungrounded service conductor
b. Grounding electrode conductor
c. Grounding electrode for the service
d. b and c

138. In urban water-pipe areas where there are at least _____water-pipe connections on the neutral conductor and not fewer than _____ such connections in each mile of neutral conductor, the metallic interconnection shall be permitted to be made to the secondary neutral conductor with the omission of the direct grounding connection at the surge arrester.

a. Two
b. Three
c. Four
d. Five

Article 300: Wiring Methods

139. Conductors of _____circuits, rated 600 volts, nominal, or less, shall be permitted to occupy the same equipment wiring enclosure, cable, or raceway.

a. ac
b. ac and dc
c. dc
d. The same

140. Where subject to physical damage, conductors shall be _____.

a. Insulated
b. Concealed
c. Exposed
d. Protected

141. In both exposed and concealed locations where nonmetallic-sheathed cables pass through either factory- or field punched, cut, or drilled slots or holes in metal members, the cable shall be protected by listed bushings or listed _____ covering all metal edges that are securely fastened in the opening prior to installation of the cable.

a. Spinners
b. Grommets
c. Clamps
d. Rivets

142. A cable- or raceway-type wiring method, installed in exposed or concealed locations under sheet roof decking, shall be installed and supported so the nearest outside surface of the cable or raceway is not less than 38 mm from the nearest surface of the _____ roof decking.

a. Plywood
b. Metal-corrugated
c. Oriented strand board
d. Tongue and groove

143. The interior of enclosures or raceways installed underground shall be considered to be a _____ location.

a. Dry
b. Wet
c. Enclosed
d. Concealed

144. Where the enclosure or raceway is subject to physical damage, the conductors shall be installed in:

a. Rigid metal conduit
b. Intermediate metal conduit
c. Schedule 40 PVC conduit
d. a and b

145. Where exposed to sunlight, the materials shall be listed as _____resistant or shall be identified as _____resistant.

a. Moisture
b. Heat
c. Light
d. Sunlight

146. Direct-buried conductors or cables shall be permitted to be spliced or tapped without the use of _____.

a. Transformer box pads
b. Secondary pedestals
c. Switchgear pads
d. Splice boxes

147. Where subject to exposure to chemical solvents, vapors, splashing, or immersion, materials or coatings shall either be _____ resistant to chemicals based on their listing or be identified for the specific chemical reagent.

a. Inherently
b. Basically
c. Mainly
d. Mostly

148. Where raceways are installed in wet locations abovegrade, the _____ of these raceways shall be considered to be a wet location.

a. Peripheral
b. Exterior
c. Interior
d. Innermost

149. Wiring located within the cavity of a fire-rated floor-ceiling or roof-ceiling assembly shall not be secured to, or supported by, the ceiling _____, including the ceiling support wires.

a. Assembly
b. Suspension
c. Mount
d. Frame

150. Metal or nonmetallic raceways, cable armors, and cable sheaths shall be continuous between cabinets, boxes, fittings, or other enclosures or _____.

a. Receptacles
b. Switches
c. Outlets
d. Sockets

151. An integral _____ or wiring compartment as part of approved equipment shall be permitted in lieu of a box.

a. Junction box
b. Cable
c. Conduit
d. Tray

152. The number and size of conductors in any raceway shall not be more than will permit _____ of the heat and ready installation or withdrawal of the conductors without damage to the conductors or to their insulation.

a. Dissipation
b. Expansion
c. Extension
d. Contraction

153. Raceways, other than busways or exposed raceways having _____ or removable covers, shall be installed complete between outlet, junction, or splicing points prior to the installation of covers.

a. Jointed
b. Bridged
c. Approved
d. Hinged

154. Metal raceways shall not be supported, terminated, or connected by _____ to the raceway unless specifically designed to be or otherwise specifically permitted to be in this Code.

a. Soldering
b. Brazing
c. Welding
d. Joining

155. Where conductors carrying alternating current are installed in _____ metal enclosures or _____ metal raceways, they shall be arranged so as to avoid heating the surrounding _____metal by induction.

a. Nonferrous
b. Molybdenum
c. Cobalt
d. Ferrous

156. Electrical installations in which of the following shall be made so that the possible spread of fire or products of combustion will not be substantially increased:

a. Ventilation or Air Handling Ducts
b. Hollow Spaces
c. Vertical Shafts
d. All of the above

157. No wiring systems of any type shall be installed in ducts used to transport _____, loose stock, or flammable vapors.

a. Dirt
b. Dust
c. Sand
d. Soil

158. No wiring systems of any type shall be installed in ducts used to transport dust, loose stock, or _____vapors.

a. Flammable
b. Water
c. Dangerous
d. Toxic

159. Electrical wiring in air-handling areas beneath _____floors for information technology shall be permitted in accordance with Article 645.

a. Floating
b. Sprung
c. Raised
d. Glass

160. Cables, raceways, and equipment installed behind panels designed to allow access, including _____ panels, shall be arranged and secured so as to allow the removal of panels and access to the equipment.

a. Solar
b. Integrated
c. Control
d. Suspended ceiling

161. Suitable covers shall be installed on all boxes, fittings, and similar enclosures to prevent accidental contact with _____ parts or physical damage to parts or insulation.

a. Activated
b. Supplied
c. Energized
d. Inactivated

162. The conductor shall not be bent to a radius less than _____times the overall diameter for nonshielded conductors or 12 times the overall diameter for shielded or lead-covered conductors during or after installation.

a. 2
b. 4
c. 6
d. 8

163. Where a raceway enters from an underground system, the end within the building shall be _____ with an identified compound so as to prevent the entrance of moisture or gases, so it shall be so arranged to prevent moisture from contacting live parts.

a. Sealed
b. Preserved
c. Reinforced
d. Marked

Article 310: Conductors for General Wiring

164. The paralleled conductors in each phase, polarity, neutral, grounded circuit conductor, or equipment grounding conductor shall comply with all of the following EXCEPT:

a. Be the same length
b. Have the same conductor voltage
c. Be terminated in the same manner
d. Have the same insulation type

165. Conductors exposed to oils, greases, vapors, gases, fumes, liquids, or other substances having a _____ effect on the conductor or insulation shall be of type suitable for the application.

a. Harmful
b. Poisonous
c. Safe
d. Deleterious

166. Where run in separate cables or raceways, the cables or raceways with conductors shall have the _____ number of conductors and shall have the same electrical characteristics.

a. Same
b. Corresponding
c. Correct
d. Approved

167. A type letter or letters used _____ shall indicate a single insulated conductor.

a. Together
b. Alone
c. Simultaneously
d. Repeatedly

168. All conductors and cables contained in Chapter 3 shall be permitted to be surface marked to indicate special _____ of the cable materials.

a. Characteristics
b. Qualities
c. Traits
d. Flaws

169. Equipment grounding conductors shall be permitted to be sectioned within a listed multiconductor cable, provided the _____ circular mil area complies with 250.122.

a. Total
b. Collective
c. Individual
d. Combined

170. Where more than one calculated or tabulated ampacity could apply for a given circuit length, the _____ value shall be used.

a. Highest
b. Lowest
c. Mean
d. Median

171. Where bare or covered conductors are installed with insulated conductors, the temperature rating of the bare or covered conductor shall be _____ to the lowest temperature rating of the insulated conductors for the purpose of determining ampacity.

a. Comparable
b. Appropriate
c. Adjusted
d. Equal

172. _____ means any of the electrical conduits recognized in Chapter 3 as suitable for use underground; other raceways round in cross section, listed for underground use, and embedded in earth or concrete.

a. Thermal Resistivity
b. Grounded Shields
c. Selection of Ampacity
d. Electrical Ducts

173. _____ means the heat transfer capability through a substance by conduction.

a. Electrical Ducts
b. Grounded Shields
c. Thermal Resistivity
d. Selection of Ampacity

Article 312: Cabinets, Cutout Boxes, and Meter Socket Enclosures

174. In walls of concrete, tile, or other noncombustible materials, cabinets shall be installed so that the front edge of the cabinet is not set back of the finished surface more than _____mm.

a. 6
b. 4
c. 8
d. 6.5

175. In walls constructed of _____or other combustible material, cabinets shall be flush with the finished surface or project therefrom.

a. Wood
b. Drywall
c. Nonmetals
d. None of the above

176. Noncombustible surfaces that are broken or incomplete shall be repaired so there will be no gaps or open spaces greater than _____ mm at the edge of the cabinet or cutout box employing a flush-type cover.

a. 3
b. 4
c. 2
d. 1

177. Cabinets and cutout boxes shall have sufficient space to accommodate all conductors installed in them without _____.

a. Competing
b. Jamming
c. Crowding
d. Obstruction

178. Metal enclosures within the scope of this article shall be protected both inside and outside against _____.

a. Oxidization
b. Corrosion
c. Deterioration
d. Weakening

Article 314: Outlet, Device, Pull, and Junction Boxes, etc.

179. Cast, sheet metal, nonmetallic, and other boxes such as FS, FD, and larger boxes are not classified as conduit bodies.

a. True
b. False

180. _____ boxes shall not be used where conduits or connectors requiring the use of locknuts or bushings are to be connected to the side of the box.

a. Junction
b. Round
c. Nonmetallic
d. Metal

181. _____boxes shall be permitted only with open wiring on insulators, concealed knob-and-tube wiring, cabled wiring methods with entirely nonmetallic sheaths, flexible cords, and nonmetallic raceways.

a. Junction
b. Round
c. Nonmetallic
d. Metal

182. _____ boxes shall be grounded and bonded in accordance with PARTS I, IV, V, VI, VII, and X of Article 250 as applicable, except as permitted in 250.112 (I).

a. Junction
b. Round
c. Nonmetallic
d. Metal

183. Surface extensions shall be made by mounting and _____ securing an extension ring over the box.

a. Manually
b. Mechanically
c. Professionally
d. Automatically

Article 320: Armored Cable: Type AC

184. Type AC cable shall be permitted in all of the following EXCEPT:

a. For feeders and branch circuits in both exposed and concealed work
b. In cable trays
c. Embedded in plaster finish on brick or other masonry (dry)
d. In damp or wet conditions

185. Type AC cable shall NOT be used as follows EXCEPT:

a. In dry locations
b. Where subject to physical damage
c. Where exposed to corrosive fumes or vapors
d. In damp or wet conditions

Article 322: Flat Cable Assemblies: Type FC

186. Flat cable assemblies shall be permitted in all of the following EXCEPT:

a. Where installed for exposed work
b. In hoistways or on elevators or escalators
c. In locations where they will not be subjected to physical damage.
d. As branch circuits to supply suitable tap devices for lighting, small appliances, or small power loads.

187. Flat cable assemblies shall NOT be used in all of the following EXCEPT:

a. In surface metal raceways identified for the use.
b. Where subject to corrosive vapors unless suitable for the application.
c. In any hazardous location.
d. Outdoors or in wet or damp locations unless identified for the use.

188. Flat cable assemblies shall consist of_____ conductors:
a. Two or three
b. Four or five
c. Both a and b
d. Neither a or b

189. Flat cable assemblies shall have conductors of 10 AWG special stranded _____wires.

a. Aluminum
b. Copper
c. Sheathed
d. Insulated

Article 324: Flat Conductor Cable: Type FCC

190. _____ means a protective layer that is installed between the floor and Type FCC flat conductor cable to protect the cable from physical damage and may or may not be incorporated as an integral part of the cable.

a. Cable Connector
b. Bottom Shield
c. FCC System
d. Top Shield

191. _____means an insulator designed to electrically insulate the end of a Type FCC cable.

a. Insulating End
b. Transition Assembly
c. Metal shield connections
d. FCC System

192. Use of FCC systems shall be permitted in all of the following EXCEPT::

a. General purpose circuits
b. Appliance branch circuits
c. Multiple branch circuits
d. Individual branch circuits

193. Voltage between ungrounded conductors and the grounded conductor shall not exceed _____volts.

a. 200
b. 150
c. 300
d. None of the above

194. Use of FCC systems shall be permitted in all of the following EXCEPT:

a. Outdoors or in wet locations
b. Damp locations
c. Hard or sound floor surfaces
d. Smooth or continuous floor surfaces

195. FCC systems shall not be used in all of the following locations EXCEPT:

a. Residential buildings
b. School buildings
c. On wall surfaces in surface metal raceways
d. Hospital buildings

Article 326: Integrated Gas Spacer Cable: Type IGS

196. Type IGS cable shall be permitted for use under ground, including direct burial in the earth in which of the following:

a. Exposed in contact with buildings
b. Service-entrance conductors
c. Feeder or branch-circuit conductors
d. b and c

Article 328: Medium Voltage Cable: Type MV

197. Type MV cable shall be permitted for use on power systems rated up to 35,000volts nominal in all of the following EXCEPT:

a. Exposed to direct sunlight
b. In wet locations
c. In dry locations
d. In raceways

Article 330: Metal-Clad Cable: Type MC

198. Type MC cable shall be permitted in all of the following EXCEPT:

a. Indoors
b. Outdoors
c. Where subject to physical damage
d. As aerial cable on a messenger

199. Unless the metallic sheath or armor is resistant to the conditions or is protected by material resistant to the conditions, type MC cable shall not be used in which of the following:

a. Where exposed to any of the destructive corrosive conditions when direct buried in the earth or embedded in concrete
b. Where exposed to any of the destructive corrosive conditions when exposed to cinder fills, strong chlorides, caustic alkalis, or vapors of chlorine or of hydrochloride acids.
c. both a and b
d. neither a or b

Article 332: Mineral Insulated, Metal-Sheathed Cable, Type MI

200. Type MI cable shall be permitted in all of the following EXCEPT:

a. In underground runs unless protected from physical damage, where necessary
b. For services, feeders, and branch circuits
c. For power, lighting, control, and signal circuits
d. Indoors or outdoors

Article 334: Nonmetallic-Sheathed Cable: Types NM, NMC, and NMS

201. _____means insulated conductors enclosed within an overall nonmetallic jacket.

a. NM
b. NMC
c. NMS
d. All of the above

202. _____means insulated conductors enclosed within an overall, corrosive resistant , nonmetallic jacket.

a. NM
b. NMC
c. NMS
d. None of the above

203. _____means insulated power or control conductors with signaling, data, and communications conductors within an overall nonmetallic jacket.

a. NM
b. NMC
c. NMS
d. All of the above

204. Type NM, Type NMC, and Type NMS cables shall be permitted to be used in all of the following EXCEPT:

a. One-and two-family dwellings
b. Exposed in dropped or suspended ceilings in other than one-and-two family and multifamily dwellings
c. Multifamily dwellings permitted to be of Types III, IV, and V construction except as prohibited in 334.12
d. Cable trays in structures permitted to be Types III, IV, or V where the cables are identified for the use.

205. Type NM cable shall be permitted in which of the following:

a. Exposed work in normally dry locations except as prohibited in 334.10 (3)
b. Concealed work in normally dry locations except as prohibited in 334.10 (3)
c. To be installed or fished I air voids in masonry block or tile walls
d. All of the above

206. Types NM, NMC, and NMS cables shall not be permitted in all of the following EXCEPT:

a. Other structures permitted to be of Types III, IV, and V construction except as prohibited in 334.12.
b. In motion picture studios
c. In storage battery rooms
d. As service entrance cable

207. Types NM and NMS cables shall not used in all of the following conditions or locations EXCEPT:

a. In wet or damp locations
b. In normally dry locations
c. Where exposed to corrosive fumes or vapors
d. Where embedded in masonry, concrete, adobe, fill, or plaster

208. In addition to the insulated conductors, the cable shall have a(n)_____ equipment grounding conductor:

a. Insulated
b. Covered
c. Bare
d. All of the above

209. The overall covering for Type NMC shall be:

a. Flame retardant
b. Moisture and fungus resistant
c. Corrosion resistant
d. All of the above

Article 336: Power and Control Tray Cable: Type TC

210. Type TC cable shall be permitted to be used in all of the following EXCEPT:

a. Where exposed to direct rays of the sun, unless as identified as sun resistant
b. In cable trays
c. In raceways
d. For power, lighting, control, and signal circuits

211. Type TC tray cable shall not be installed or used in all of the following EXCEPT:

a. Where it will be exposed to physical damage
b. Outside a raceway or cable tray system, except as permitted in 336.10 (7)
c. In outdoor locations supported by a messenger wire
d. Direct buried, unless identified for such use

Article 400: Flexible Cords and Cables

212. Flexible cords and cables shall be used for all of the following EXCEPT:

a. Pendants
b. Where attached to building surfaces
c. Elevator cables
d. Wiring of cranes and hoists

213. Unless specifically permitted in 400.7, flexible cords and cables shall not be used in all of the following EXCEPT:

a. Wiring of luminaires
b. As a substitute for the fixed wiring of a structure
c. Where run through holes in walls, structural, suspended, dropped ceilings or floors
d. Where run through doorways, windows, or similar openings

214. Where a single conductor is used for both equipment grounding and to carry unbalanced current from other conductors, as provided for in 250.140 for electric ranges and electric clothes dryers, it shall not be considered as a _____ conductor.

a. Silver
b. Concrete
c. Current-carrying
d. Dirty-water

215. Flexible cords and cables shall be marked by means of a printed tag attached to the _____ or carton.

a. Air Feed
b. Straighteners
c. Cradle
d. Coil reel

216. Flexible cord shall be used only in continuous lengths without splice or _____ where initially installed in applications permitted by 400. 7 (A).

a. Joint
b. Thread
c. Dies
d. Tap

217. Flexible cords and cables shall be connected to devices and to fittings so that _____ is not transmitted to joints or terminals.

a. Tension
b. Pressure
c. Weight
d. Stress

218. Flexible cords not smaller than _____ AWG, and tinsel cords or cords having equivalent characteristics of smaller size approved for use with specific appliances, shall be considered as protected against overcurrent by the overcurrent devices described in 240.5.

a. 12
b. 18
c. 20
d. 15

219. Flexible cords and cables shall be protected by _____ or fittings where passing through holes in covers, outlet boxes, or similar enclosures.

a. Bushings
b. Lockscrews
c. Clamps
d. Sleeves

220. Flexible cords shall be examined and tested at the factory and _____ before shipment.

a. Labeled
b. Tagged
c. Ticketed
d. Marked

221. For jacketed cords furnished with appliances, one conductor having its insulation colored light _____, with the other conductors having their insulation of a readily distinguishable color other than white or gray.

a. Blue
b. Green
c. Brown
d. Yellow

222. One conductor having the individual strands tinned and the other conductor or conductors having the individual strands untinned for cords having insulation on the individual conductors integral with the _____.

a. Conduit
b. Jacket
c. Cable
d. Conductor

223. The conductors shall be _____ AWG copper or larger and shall employ flexible stranding.

a. 18
b. 12
c. 15
d. 20

224. Cables operated at over 2000 volts shall be _____.

a. Protected
b. Shielded
c. Isolated
d. Reinforced

225. All shields shall be _____ to an equipment grounding conductor.

a. Coupled
b. Joined
c. Connected
d. Attached

226. The minimum bending radii for _____ cables during installation and handling in service shall be adequate to prevent damage to the cable.

a. Flexible
b. Transportable
c. Fixed
d. Portable

227. Connectors used to connect lengths of cable in a run shall be of a type that _____ firmly together.

a. Secures
b. Fasten
c. Attaches
d. Locks

228. Portable cables shall not contain splices unless the splices are of the permanent molded, _____ types in accordance with 110.14 (B).

a. Vulcanized
b. Exposed
c. Displaced
d. Compressed

Article 402: Fixture Wires

229. No conductor shall be used under such conditions that its operating temperature exceeds the temperature specified in Table 402.3 for the type of _____ involved.

a. Cable
b. Conductor
c. Insulation
d. Wire

230. Thermoplastic insulated fixture wire shall be durably marked on the surface at _____ not exceeding 610 mm (24 in.).

a. Spaces
b. Breaks
c. Gaps
d. Intervals

231. Fixture wires shall not be used as branch-circuit conductors except as permitted elsewhere in the _____.

a. Guidelines
b. Specifications
c. Code
d. Regulations

Article 404: Switches

232. Three-way and four-way switches shall be wired so that all switching is done only in the _____ circuit conductor.

a. Ungrounded
b. Multiwire branch
c. Grounded
d. Motor

233. Switches and circuit breakers shall be of the externally operable type _____ in an enclosure listed for the intended use.

a. Based
b. Supported
c. Grounded
d. Mounted

234. _____ shall not be used as junction boxes, auxiliary gutters, or raceways for conductors feeding through or tapping off to other switches or overcurrent devices, unless the enclosure complies with 312.8.

a. Rigid attachment connectors
b. Enclosures
c. Cable to cable connectors
d. General use conductors

235. A surface mounted switch or circuit breaker in a damp or wet location shall be _____ in a weatherproof enclosure or cabinet that shall comply with 312.2.

a. Wrapped up
b. Supported
c. Mounted
d. Enclosed

236. A _____ mounted switch or circuit breaker in a damp or wet location shall be equipped with a weatherproof cover.

a. Flush
b. Horizontally
c. Vertically
d. Rotationally

237. _____ knife switches shall be placed so that gravity will not tend to close them.

a. Snap
b. Multipole Snap
c. Double-throw
d. Single-throw

238. _____ knife switches shall be permitted to be mounted so that the throw is either vertical or horizontal.

a. Snap
b. Multipole Snap
c. Single-throw
d. Double-throw

239. Single-throw knife switches and switches with butt contacts shall be connected such that their blades are _____ when the switch is in the open position.
a. Energized
b. Lighted
c. De-energized
d. Closed

240. Where these switch or circuit breaker handles are operated vertically rather than _____ or horizontally, the up position of the handle shall be the (on) position.

a. Rotationally
b. Cylindrically
c. Linearly
d. Non-rotationally

241. A snap switch shall not be _____ or ganged in enclosures with other snap switches, receptacles, or similar devices, unless they are arranged so that the voltage between adjacent devices does not exceed 300 volts, or unless they are installed in enclosures equipped with identified, securely installed barriers between adjacent devices.

a. Grouped
b. Categorized
c. Connected
d. Classified

242. _____ provided for snap switches mounted in boxes and other enclosures shall be installed so as to completely cover the opening and, where the switch is flush mounted, seat against the finished surface.

a. Protective Fronts
b. Faceplates
c. Disks
d. Coverings

243. Metal faceplates shall be of a _____ metal not less than 0.76 mm in thickness or of nonferrous metal not less than 1.02 mm in thickness.

a. Iron
b. Cast
c. Ferrous
d. Scrap

Article 411: Lighting Systems Operating at 30 Volts or Less

244. Lighting systems shall be installed not less than _____feet horizontally from the nearest edge of the water, unless permitted by Article 680.

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

Article 424: Fixed Electric Space-Heating Equipment

Marking of Heating Cables:
In the following five questions, match the correct color identification with the corresponding circuit voltage in which it is to be used:

245. 120 volt nominal:

a. Yellow
b. Blue
c. Red
d. Orange

246. 208 volt, nominal:

a. Yellow
b. Blue
c. Red
d. Orange

247. 240 volt, nominal:

a. Yellow
b. Blue
c. Red
d. Brown

248. 277 volt, nominal:

a. Brown
b. Blue
c. Red
d. Orange

249. 480 volt, nominal:

a. Yellow
b. Orange
c. Red
d. Brown

250. Heating cables shall not be installed in which of the following:

a. In closets
b. In closet ceilings as low-temperature heat sources to control relative humidity, provided they are used only in those portions of the ceiling that are unobstructed to the floor by shelves or other permanent luminaries.
c. Over walls
d. a and d only

251. Cables shall be spliced only where necessary and only by approved means, and in no case shall the length of the heating cable be altered.

a. True
b. False

Article 426: Fixed Outdoor Electric Deicing and Snow Melting Equipment

252. External surfaces of outdoor electric deicing and snow-melting equipment that operate at temperatures exceeding _____ degrees Fahrenheit shall be physically guarded, isolated, or thermally insulated to protect against contact by personnel in the area.

a. 120
b. 140
c. 100
d. 150

253. Fixed outdoor deicing and snow-melting equipment employing methods of construction or installation other than covered by this article shall be permitted _____.

a. Only by approved means
b. Only by special permission
c. Under no circumstances
d. With appropriate modifications

Article 500: Hazardous Locations

254. _____ means a protection technique utilizing stationary gas detectors in industrial establishments.

a. Control Drawing
b. Explosionproof Apparatus
c. Combustible Gas Detection System
d. Associated Nonincendive Field Wiring Apparatus

255. _____ means enclosures constructed so that dust will not enter under specified test conditions.

a. Dust -Ignitionproof
b. Dust resistant
c. Dustproof
d. Dusttight

256. _____ means materials, fittings, devices, appliances, and the like that are part of, or in connection with, an electrical installation.

a. Electrical and Electronic Equipment
b. Electrical Apparatus
c. Reference Standards
d. Hermetically Sealed

257. _____ means equipment sealed against the entrance of an external atmosphere where the seal is made by fusion, for example, soldering, brazing, welding, or the fusion of glass to metal.

a. Airtight
b. Hermetically Sealed
c. Reactor Vessel
d. Permeation

258. _____ means a circuit, other than field wiring, in which any arc or thermal effect produced under intended operating conditions of the equipment is not capable, under specified test conditions, of igniting the flammable gas-air, vapor-air, or dust-air mixture.

a. Nonincendive Circuit
b. Resistive Circuit
c. Electrical Circuit
d. Bridge Circuit

259. _____ means a component having contacts for making or breaking an incendive circuit and the contacting mechanism is constructed so that the component is incapable of igniting the specified flammable gas-air or vapor-air mixture.

a. Electronic Component
b. Passive Component
c. Nonincendive Component
d. Active Component

260. _____means equipment having electrical/electronic circuitry that is incapable, under normal operating conditions, of causing ignition of a specified flammable gas-air, vapor-air, or dust-air mixture due to arcing or thermal means.

a. Electronic Equipment
b. Electrical Equipment
c. Nonincendive Field Wiring Equipment
d. Nonincendive Equipment

261. _____ means wiring that enters or leaves an equipment enclosure and, under normal operating conditions of the equipment, is not capable, due to arcing or thermal effects, of igniting the flammable gas-air, vapor-air, or dust-air mixture.

a. Associated Nonincendive Field Wiring Apparatus
b. Nonincendive Field Wiring
c. Nonincendive Field Wiring Apparatus
d. Wiring Method

262. _____ means apparatus intended to be connected to nonincendive field wiring.

a. Explosionproof Apparatus
b. Associated Nonincendive Field Wiring Apparatus
c. Nonincendive Field Wiring Apparatus
d. Electrical Apparatus

263. _____ means electrical equipment immersed in a protective liquid in such a way that an explosive atmosphere that may be above the liquid or outside the enclosure cannot be ignited.

a. Oil Immersion
b. Immersion Oils
c. Condensers
d. Cedar Tree Oil

264. Equipment shall be identified not only for the class of location but also for the explosive, combustible, or ignitible properties of the specific gas, vapor, dust, or _____ /flyings that will be present.

a. Filament
b. Fibers
c. Strands
d. Dirt

265. Where flammable gas, flammable liquid-produced vapors, combustible liquid-produced vapors, or combustible dusts are or may be present at the same time, the _____ presence of both shall be considered when determining the safe operating temperature of the electrical equipment.

a. Concurrent
b. Consecutive
c. Simultaneous
d. Separate

266. Equipment shall be marked to show the _____ for which it has been evaluated.

a. Class
b. Division
c. Classification
d. Environment

267. The marking shall specify the temperature class or operating temperature at a _____ degree C ambient temperature, or at the higher ambient temperature if the equipment is rated and marked for an ambient temperature of greater than _____degree C.

a. 40
b. 50
c. 60
d. 70

268. The temperature marking specified in 500.8 (C) shall be less than the _____ temperature of the specific dust to be encountered.

a. Lowest
b. Ignition
c. Highest
d. Absolute

Article 501: Class I Locations

269. Boxes and fittings shall not be required to be _____ except as required by 501.105 (B) (1), 501.115 (B) (1), and 501.150 (B) (1).

a. Explosionproof
b. Dustproof
c. Waterproof
d. Dust-Ignitionproof

270. Seals are provided in conduit and cable systems to _____ the passage of gases and vapors and prevent the passage of flames from one portion of the electrical installation to another through the conduit.

a. Lessen
b. Reduce
c. Minimize
d. Diminish

271. Enclosures for connections or equipment shall be provided with a(n)_____ means for sealing, or sealing fittings listed for the location shall be used.

a. Central
b. Integral
c. Basic
d. Connected

272. The compound shall provide a seal against passage of gas or vapors through the seal fitting, shall not be _____ by the surrounding atmosphere or liquids, and shall not have a melting point of less than 93 degrees C.

a. Changed
b. Mixed
c. Influenced
d. Affected

273. Except for listed cable sealed fittings, the _____ of the sealing compound in a completed seal shall not be less than the metric designator of the sealing fitting expressed in the units of measurement employed, and in no case less than 16 mm.

a. Thinness
b. Breadth
c. Width
d. Thickness

274. The cross-sectional area of the conductors permitted in a seal shall not exceed _____ percent of the cross-sectional area of a rigid metal conduit of the same trade size unless it is specifically identified for a higher percentage of fill.

a. 25
b. 10
c. 5
d. 50

275. Cable shall be sealed at all _____ .

a. Joints
b. Terminations
c. Junctions
d. Seams

276. Each multiconductor cable in conduit shall be considered as a _____ conductor if the cable is incapable of transmitting gases or vapors through the cable core.

a. Single
b. Double
c. Insulated
d. Thermal

277. Cables entering enclosures that are required to be explosionproof shall be sealed at the point of _____.

a. Entrance
b. Termination
c. Contact
d. Access

278. Cables that have a gas/vaportight _____ sheath and do not transmit gases or vapors through the cable core in excess of the quantity permitted for seal fittings shall not be required to be sealed except as required in 501.15 (E) (1).

a. Unbroken
b. Uninterrupted
c. Continuous
d. Noncontiguous

279. Where there is a probability that liquid or other condensed vapor may be trapped within enclosures for control equipment or at any point in the raceway system, approved means shall be provided to _____ accumulation or to permit periodic draining of such liquid or condensed vapor.

a. Eliminate
b. Prevent
c. Reduce
d. Avoid

280. The locknut-bushing and double-locknut types of contact shall not be depended on for _____ purposes, but bonding jumpers with proper fittings or other approved means of bonding shall be used.

a. Linking
b. Joining
c. Connecting
d. Bonding

281. Flexible metal conduit and liquidtight flexible metal conduit shall not be used as the _____ ground-fault current path.

a. Sole
b. Primary
c. Main
d. Chief

282. Transformer windings, impedance coils, solenoids, and other windings that do not _____ sliding or make-or-break contacts shall be provided with enclosures.

a. Duplicate
b. Integrate
c. Incorporate
d. Include

283. Listed cartridge fuses shall be permitted as _____ protection within luminaries.

a. Auxiliary
b. Supplementary
c. Added
d. Complimentary

Article 517: Health Care Facilities

284. _____means the hazard current of a given isolated system with all devices connected except the line isolation monitor.

a. Fault Hazard Current
b. Monitor Hazard Current
c. Total Hazard Current
d. None of the above

285. Receptacles located within the rooms, bathrooms, playrooms, activity rooms, and patient care areas of pediatric wards shall be:

a. Listed tamper resistant
b. Shall employ a listed tamper resistant cover
c. a or b
d. a and b

286. Each patient bed location shall be supplied by at least two branch circuits, one or more from the:

a. Emergency System
b. Normal System
c. a or b
d. a and b

287. Each patient bed location shall be provided with a minimum of _____receptacles.

a. 2
b. 4
c. 5
d. None of the above

288. Which of the following equipment shall be permitted to be connected to the critical branch and shall be arranged for delayed automatic connection to the alternate power source:

a. Smoke control and stair pressurization systems
b. Sump pumps
c. Kitchen hood supply and/or exhaust systems
d. All of the above

289. Low-voltage equipment that is frequently in contact with the bodies of persons or has exposed current carrying elements shall comply with which of the following:

a. Operate on an electrical potential of 15 volts or less
b. Be approved as intrinsically safe or double insulated equipment
c. Be moisture resistant
d. b and c

Article 600: Electric Signs and Outline Lighting

290. _____ means systems of illumination utilizing fluorescent lamps, high intensity discharge lamps, or neon tubing.

a. Incandescent Lighting
b. Fluorescent Lighting
c. Luminescent Lighting
d. Electric-Discharge Lighting

291. _____ means electric-discharge tubing manufactured into shapes that form letters, parts of letters, skeleton tubing, outline lighting, other decorative elements, or art forms, and filled with various inert gases.

a. Neon Tubing
b. Neon Lighting
c. Luminous-tube
d. Geissler tube

292. _____ means a sign or outline lighting system, shipped as subassemblies, that requires field-installed wiring between the subassemblies to complete the overall sign.

a. Aluminum Arrows
b. Section Sign
c. Double-Leaf Clover Section Sign
d. Electric-Discharge Lighting

293. _____ means a portion of a sign that may provide protection from the weather but is not an electrical enclosure.

a. Field-installed sign body
b. Section Sign
c. Sign Body
d. Outline Lighting

294. _____ means neon tubing that is itself the sign or outline lighting and not attached to an enclosure or sign body.

a. Sub-assemblies
b. Outline Tubing
c. Skeleton Tubing
d. Exposed Neon Tubing

295. Signs and outline lighting systems with lampholders for _____ lamps shall be marked to indicate the maximum allowable lamp wattage per lampholder.

a. Fluorescent
b. Incandescent
c. Luminescent
d. Portable

296. Section signs shall be marked to indicate that field-wiring and installation instructions are _____.

a. Present
b. Required
c. Utilized
d. Fixed

297. The wiring method used to supply signs and outline lighting systems shall _____ within a sign, an outline lighting system enclosure, a suitable box, or a conduit body.

a. Exist
b. Function
c. Terminate
d. Commence

298. The disconnecting means shall be within _____ of the sign or outline lighting system that it controls.

a. Proximity
b. Range
c. Distance
d. Sight

299. Switches, flashers, and similar devices controlling transformers and electronic power supplies shall be rated for controlling inductive loads or have a current rating not _____ than twice the current rating of the transformer.

a. More
b. Other
c. Less
d. Fewer

300. Neon tubing, other than _____ portable signs, readily accessible to pedestrians shall be protected from physical damage.

a. Wet location
b. Dry-location
c. Roadside
d. None of the above

301. Ballasts, transformers, and electronic power supplies shall be installed as near to the lamps or neon tubing as practicable to keep the secondary conductors as _____ as possible.

a. Short
b. Long
c. Near
d. Sturdy

302. Connections shall be made by use of a connection device, twisting of the wires together, or use of a(n)_____ receptacle.

a. Tamper resistance
b. Light
c. Auxiliary
d. Electrode

303. Where electrodes _____ an enclosure, bushings listed for the purpose shall be used unless receptacles are provided.

a. Depart
b. Penetrate
c. Surround
d. Integrate

Article 604: Manufactured Wiring Systems

304. _____means a system containing component parts that are assembled in the process of manufacture and cannot be inspected at the building site without damage or destruction to the assembly and used for the connection of luminaries, utilization equipment, continuous plug-type busways, and other devices.

a. Wire Binding System
b. Modular Wiring System
c. Global Wiring System
d. Manufactured Wiring System

Article 605: Office Furnishings

305. The electrical connection between partitions shall be a flexible assembly identified for use with wired partitions or shall be permitted to be installed using flexible cord, provided all EXCEPT which one of the following:

a. The partitions are mechanically contiguous.
b. The cord is not longer than necessary for maximum positioning of the partitions but is in no case to exceed 600 mm.
c. The cord is terminated at an attachment plug-and-cord connector with strain relief.
d. The cord is extra hard usage type with 10 AWG or larger conductors, with an insulated equipment grounding conductor.

306. Partitions of the fixed type shall be permitted to be connected to the building electrical system by one of the wiring methods of Chapter 3.

a. True
b. False

307. The receptacle(s) supplying power shall be on a separate circuit serving only panels and not other loads and shall be located not more than 300 mm form the partition that is _____ to it.

a. Unrelated
b. Unconnected
c. Connected
d. Coupled

308. Individual partitions or groups of interconnected individual partitions shall not contain more than _____ 15-ampere, 125-volt receptacle outlets.

a. Sixteen
b. Fifteen
c. Fourteen
d. Thirteen

309. Individual partitions or groups of interconnected individual partitions shall not contain _____ circuits.

a. Open
b. Multiwire
c. Closed
d. Service

Article 610: Cranes and Hoists

310. Where multiconductor cable is used with a suspended pushbutton station, the station shall be supported in some satisfactory manner that protects the electrical conductors against _____.

a. Movement
b. Strain
c. Blockage
d. Damage

311. A boxed or terminal fitting that has a separately bushed hole for each conductor shall be used wherever a change is made from a raceway or cable to _____ wire.

a. Covered
b. Open
c. Exposed
d. Enclosed

312. A conductor (s) exposed to external heat or connected to _____ shall have a flame-resistant outer covering or be covered with flame-resistant tape individually or as a group.

a. Terminals
b. Circuits
c. Stations
d. Resistors

313. Contact conductors along runways, crane bridges, and monorails shall be permitted to be _____ and shall be copper, aluminum, steel, or other alloys or combinations thereof in the form of hard-drawn wire, tees, angles, tee rails, or other stiff shapes.

a. Bare
b. Covered
c. Reinforced
d. Insulated

314. Where the secondary resistor is separate from the controller, the minimum size of the conductors between controller and resistor shall be calculated by_____ the motor secondary current by the appropriate factor from Table 610.14 (B) and selecting a wire from Table 610.14 (A).

a. Subtracting
b. Adding
c. Multiplying
d. Increasing

315. Where a crane or hoist is operated by more than one motor, a _____ conductor of proper ampacity shall be permitted.

a. Main Ground
b. Positive
c. Negative
d. Common-return

316. Runway contact conductors shall be guarded, and bridge contact conductors shall be located or guarded in such a manner that persons cannot inadvertently touch energized _____ parts.

a. Circuit
b. Conductor
c. Current-carrying
d. Cable

317. Wires that are used as contact conductors shall be secured at the ends by means of _____ strain insulators and shall be mounted on approved insulators so that the extreme limit of displacement of the wire does not bring the latter within less than 38 mm from the surface wired over.

a. Inspected
b. Double
c. Manufactured
d. Approved

318. Monorail. tram rail, or crane runway tracks shall be permitted as a conductor of current for one phase of a three-phase, ac system furnishing power to the carrier, crane, or trolley, provided all of the following conditions are met EXCEPT:

a. The conductors supplying the other two phases of the power supply are not insulated.
b. The power for all phases is obtained from an insulating transformer.
c. The voltage does not exceed 300 volts.
d. The rail serving as a conductor shall not be bonded to the equipment grounding conductor at the transformer and also shall be permitted to be grounded by the fittings used for the suspension or attachment of the rail to a building or structure.

319. Taps without separate _____ protection shall be permitted to brake coils.

a. Relay
b. Overload
c. Overcurrent
d. Delay

Article 630: Electric Welders

320. A rating plate shall be provided for arc welders giving which of the following information:

a. Name of Dealer
b. Name of Manufacturer
c. Frequency, number of phases, and primary voltage
d. b and c

321. Each welder shall have an overcurrent device rated at not more than _____percent of the rated primary current of the welder

a. 200
b. 300
c. 250
d. None of the above

Article 695: Fire Pumps

322. The disconnecting means shall comply with which of the following:

a. Be identified as suitable for use as service equipment
b. Be lockable in the open position
c. Not be located within equipment that feeds loads other than the fire pump
d. a and c

Article 700: Emergency Systems

323. All boxes and enclosures (including transfer switches, generators, and power panels) for emergency circuits shall be permanently marked so they will be readily identified as a(n) _____of an emergency circuit or system.

a. Element
b. Module
c. Component
d. Section

324. Emergency wiring circuits shall be designed and located so as to minimize the hazards that might cause failure due to flooding, fire, icing, _____, and other adverse conditions.

a. Vandalism
b. Wind
c. Snow
d. Heat

325. Current supply shall be such that, in the event of failure of the normal supply to, or within, the building or group of buildings concerned, emergency lighting, emergency power, or both shall be available within the time required for the application but not to exceed _____ seconds.

a. 10
b. 20
c. 30
d. 60

326. Prime movers shall not be _____ dependent on a public utility gas system for their fuel supply or municipal water supply for their cooling systems.

a. Solely
b. Overly
c. Primarily
d. Excessively

327. Where a storage battery is used for control or signal power or as the means of starting the prime mover, it shall be _____ for the purpose and shall be equipped with an automatic charging means independent of the generator set.

a. Evaluated
b. Appropriate
c. Suitable
d. Assessed

328. Generator sets that require more than 10 seconds to develop power shall be permitted if an auxiliary power supply energizes the emergency system until the _____ can pick up the load.

a. Hybrid system
b. Standby power
c. Generator
d. Utility-Interactive Inverter Output Circuit

329. Fuel cell systems used as a source of power for emergency systems shall be of suitable rating and capacity to supply and maintain the total load for not less than _____ hours of full-demand operation.

a. 1
b. 2
c. 3
d. 4

330. For branch circuits that supply equipment classed as emergency, there shall be an emergency supply source to which the load will be _____ automatically upon the failure of the normal supply.

a. Transferred
b. Removed
c. Relocated
d. Reassigned

331. All manual switches for controlling emergency circuits shall be in locations convenient to authorized persons responsible for their _____.

a. Activation
b. Creation
c. Actuation
d. Design

332. Those lights on the exterior of a building that are not required for illumination when there is sufficient _____ shall be permitted to be controlled by an automatic light-actuated device.

a. Energy
b. Light
c. Power
d. Daylight

333. Emergency system(s) overcurrent devices shall be _____ coordinated with all supply side overcurrent protective devices.

a. Intentionally
b. Individually
c. Selectively
d. Specifically

Article 701: Legally Required Standby Systems

334. _____ means those systems required and so classed as legally required standby by municipal, state, federal, or other codes or by any governmental agency having jurisdiction.

a. Optional Standby Systems
b. Capacity and rating systems
c. Legally required standby systems
d. Tests and Maintenance for Legally Required Standby Systems

335. _____ means a legally required standby system shall have adequate capacity and rating for the supply of all equipment intended to be operated at one time.

a. Legally required standby systems
b. Capacity and rating
c. Tests and Maintenance for Legally Required Standby Systems
d. Conduct or Witness Test

336. A storage battery shall be of suitable rating and capacity to supply and maintain at not less than _____ percent of system voltage the total load of the circuits supplying legally required standby power for a period of at least 1 ½ hours.

a. 87 ½
b. 87
c. 75
d. 75 ½

Article 702: Optional Standby Systems

337. _____ means those systems intended to supply power to public or private facilities or property where life safety does not depend on the performance of the system.

a. Legally required standby systems
b. Capacity and rating systems
c. Legally required standby systems
d. Optional Standby s
ystems

Article 705: Interconnected Electric Power Production Sources

338. _____ means a system comprised of multiple power sources.

a. Legally required standby system
b. Capacity and rating system
c. Hybrid system
d. Optional standby system

339. _____ means the point at which the power production and distribution network and the customer interface occurs in an interactive system.

a. External coupling
b. Point of common coupling
c. Control coupling
d. Stamp coupling

340. _____ means the conductors between the utility interactive inverter and the service equipment or another electric power production source, such as a utility, for electrical production and distribution network.

a. Utility-interactive inverter output circuit
b. Utility-interactive PV system
c. PV Source-circuit conductors
d. Overcurrent conductors

341. Upon loss of primary source, an electric power production source shall be automatically disconnected from all ungrounded conductors of the _____ source and shall not be reconnected until the primary source is restored.

a. Primary
b. Secondary
c. Original
d. Inactive

Article 708: Critical Operations Power Systems

342. _____ means the acceptance testing, integrated system testing, operational tune-up, and start-up testing is the process by which baseline test results verify the proper operation and sequence of operation of electrical equipment, in addition to developing baseline criteria by which future trend analysis can identify equipment deterioration.

a. Risk Assessment
b. Designated Critical Operations Areas
c. Critical Operations Power Systems
d. Commissioning

343. _____ means power systems for facilities or parts of facilities that require continuous operation for the reasons of public safety, emergency management, national security, or business continuity.

a. Designated Critical Operations Areas
b. Synchronous Generators
c. Commissioning
d. Critical Operations Power Systems

344. _____ means areas within a facility or site designated as requiring operations power.

a. Critical Operations areas
b. Designated Critical Operations areas
c. Restricted Access areas
d. Risk Assessment areas

345. _____means an electronic system that provides monitoring and controls for the operation of the critical operations power system.

a. Identification of hazards
b. Developing mitigation strategy
c. Supervisory control and data acquisition
d. Risk Assessment

346. In critical operation power systems, risk assessment shall be performed to identify hazards, the likelihood of their occurrence, and the _____ of the electrical system to those hazards.

a. Power
b. Influence
c. Strength
d. Vulnerability

347. A commissioning plan shall be developed and _____.

a. Evaluated
b. Documented
c. Inspected
d. Reviewed

348. The installation of the equipment shall undergo component and system tests to ensure that, when _____, the system will function properly.

a. Inspected
b. Needed
c. Overloaded
d. Energized

349. A set of _____ test results shall be documented for comparison with future periodic maintenance testing to identify equipment deterioration.

a. Independent
b. Baseline
c. Periodic
d. Outcome

350. A functional performance test program shall be established, documented, and executed upon complete installation of the critical system in order to establish a baseline reference for _____ performance requirements.

a. Present
b. Future
c. Mandatory
d. Current

351. Means shall be permitted to bypass and _____ the transfer equipment.

a. Contain
b. Enclose
c. Isolate
d. Attach

352. Branch circuits supplied by the COPS shall only supply equipment specified as _____ for critical operations use.

a. Needed
b. Suggested
c. Evaluated
d. Required

Article 725: Class 1-3 Remote control, signaling, and power limited circuits

353. Class ____ circuit is the portion of the wiring system between the load side of the overcurrent device or power limited supply and the connected device.

a. 1
b. 2
c. 3
d. None of the above

354. Remote -control circuits for safety-control equipment shall be classified as Class _____ if the failure of the equipment to operate introduces a direct fire or life hazard.

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

355. In hoistways, Class _____ circuit conductors shall be installed in rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquidtight nonmetallic conduit, or electrical metallic tubing.

a. 1
b. 2
c. 3
d. b or c

356. For other applications, conductors of Class _____ circuits shall be separated by at least 50 mm from conductors of any electric light, power, Class 1 non-power-limited fire alarm or medium power network-powered communications circuits (unless code specified conditions are met):

a. 1
b. 2
c. 3
d. b and c

357. Cables installed in ducts, plenums, and other spaces used for environmental air shall be Type ____.

a. CL2P
b. CL3P
c. CL3R
d. a or b

Article 800: Communication Circuits

358. _____ means installed communications cable that is not terminated at both ends at a connector or other equipment and not identified for future use with a tag.

a. Abandoned communications cable
b. Removal of abandoned low-voltage cables
c. Excessive cabling
d. Recommended Practice for the Fire Protection of Telecommunications Facilities

359. _____ means a conduit or passageway for conveying air to or from heating, cooling, air conditioning, or ventilating equipment, but not including the plenum.

a. Air duct
b. Ventilation
c. Ductwork
d. Flexible Tubing

360._____ means a square or portion of a city, town, or village enclosed by streets and including the alleys so enclosed, but not any street.

a. Urban block
b. Urban design
c. Parcel
d. Block

361. _____ means a factory assembly of two or more conductors having an overall covering.

a. Cable sheath
b. Cable
c. Circuit
d. Lead

Electrical Continuing Ed Test 9 Answer Sheet

Circle or Mark the Correct Answer

1.	a	b	c	d	49.	a	b	c	d	97.	a	b	c	d	145. a b c d
2.	a	b	c	d	50.	a	b	c	d	98.	a	b	c	d	146. a b c d
3.	a	b	c	d	51.	a	b	c	d	99.	a	b	c	d	147. a b c d
4.	a	b	c	d	52.	a	b	c	d	100.	a	b	c	d	148. a b c d
5.	a	b	c	d	53.	a	b	c	d	101.	a	b	c	d	149. a b c d
6.	a	b	c	d	54.	a	b	c	d	102.	a	b	c	d	150. a b c d
7.	a	b	c	d	55.	a	b	c	d	103.	a	b	c	d	151 a b c d .
8.	a	b	c	d	56.	a	b	c	d	104.	a	b	c	d	152. a b c d
9.	a	b	c	d	57.	a	b	c	d	105.	a	b	c	d	153. a b c d
10.	a	b	c	d	58.	a	b	c	d	106.	a	b	c	d	154. a b c d
11.	a	b	c	d	59.	a	b	c	d	107.	a	b	c	d	155. a b c d
12.	a	b	c	d	60.	a	b	c	d	108.	a	b	c	d	156. a b c d
13.	a	b	c	d	61.	a	b	c	d	109.	a	b	c	d	157. a b c d
14.	a	b	c	d	62.	a	b	c	d	110.	a	b	c	d	158. a b c d
15.	a	b	c	d	63.	a	b	c	d	111.	a	b	c	d	159. a b c d
16.	a	b	c	d	64.	a	b	c	d	112.	a	b	c	d	160. a b c d
17.	a	b	c	d	65.	a	b	c	d	113.	a	b	c	d	161. a b c d
18.	a	b	c	d	66.	a	b	c	d	114.	a	b	c	d	162. a b c d
19.	a	b	c	d	67.	a	b	c	d	115.	a	b	c	d	163. a b c d
20.	a	b	c	d	68.	a	b	c	d	116.	a	b	c	d	164. a b c d
21.	a	b	c	d	69.	a	b	c	d	117.	a	b	c	d	165. a b c d
22.	a	b	c	d	70.	a	b	c	d	118.	a	b	c	d	166. a b c d
23.	a	b	c	d	71.	a	b	c	d	119.	a	b	c	d	167. a b c d
24.	a	b	c	d	72.	a	b	c	d	120.	a	b	c	d	168. a b c d
25.	a	b	c	d	73.	a	b	c	d	121.	a	b	c	d	169. a b c d
26.	a	b	c	d	74.	a	b	c	d	122.	a	b	c	d	170. a b c d
27.	a	b	c	d	75.	a	b	c	d	123.	a	b	c	d	171. a b c d
28.	a	b	c	d	76.	a	b	c	d	124.	a	b	c	d	172. a b c d
29.	a	b	c	d	77.	a	b	c	d	125.	a	b	c	d	173. a b c d
30.	a	b	c	d	78.	a	b	c	d	126.	a	b	c	d	174. a b c d
31.	a	b	c	d	79.	a	b	c	d	127.	a	b	c	d	175. a b c d
32.	a	b	c	d	80.	a	b	c	d	128.	a	b	c	d	176. a b c d
33.	a	b	c	d	81.	a	b	c	d	129.	a	b	c	d	177. a b c d
34.	a	b	c	d	82.	a	b	c	d	130.	a	b	c	d	178. a b c d
35.	a	b	c	d	83.	a	b	c	d	131.	a	b	c	d	179. a b c d
36.	a	b	c	d	84.	a	b	c	d	132.	a	b	c	d	180. a b c d
37.	a	b	c	d	85.	a	b	c	d	133.	a	b	c	d	181. a b c d
38.	a	b	c	d	86.	a	b	c	d	134.	a	b	c	d	182. a b c d
39.	a	b	c	d	87.	a	b	c	d	135.	a	b	c	d	183. a b c d
40.	a	b	c	d	88.	a	b	c	d	136.	a	b	c	d	184. a b c d
41.	a	b	c	d	89.	a	b	c	d	137.	a	b	c	d	185. a b c d
42.	a	b	c	d	90.	a	b	c	d	138.	a	b	c	d	186. a b c d
43.	a	b	c	d	91.	a	b	c	d	139.	a	b	c	d	187. a b c d
44.	a	b	c	d	92.	a	b	c	d	140.	a	b	c	d	188. a b c d
45.	a	b	c	d	93.	a	b	c	d	141.	a	b	c	d	189. a b c d
46.	a	b	c	d	94.	a	b	c	d	142.	a	b	c	d	190. a b c d
47.	a	b	c	d	95.	a	b	c	d	143.	a	b	c	d	191. a b c d
48.	a	b	c	d	96.	a	b	c	d	144.	a	b	c	d	192. a b c d

Electrical Continuing Ed Test 9 Answer Sheet (Continued)

193. a b c d
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356. a b c d
357. a b c d
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361. a b c d

Name and Credential Number

Date

To obtain your WI continuing education credits follow the below instructions.

1. If taking the same quiz more than once per cycle, fill out the forms with different dates.
2. Fill in all fields applicable.
3. Include your credential or license number.
4. We take care of registering with the state and mailing back the test results.

FYI: The state allows a person to take the same course more than once (several times) per cycle.

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2. Fill out this form below completely.
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Course Title and Name Electrical Continuing Education Test 9
Credited Hours 12 hrs
Email address_____

To be completed by Brett or Kathy Ward yourwicontinuinged.com

Course Password_____ Course ID# 10920

Attendee passed the correspondence quiz with greater than 70% score _____
Date

Instructor Signature_____