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Quiz 1

1. An installation that can be reached quickly for operation, renewal, or inspection without having to use tools, climb over or remove obstacles, or resort to portable ladders is known as _____.
 - instantly reachable
 - readily accessible
 - accessible
 - reachable
2. A battery system shall consist of _____ or more storage batteries and chargers as well as inverters, converters, and other electrical equipment.
 - one
 - two
 - three
 - four
3. A cable routing assembly consists of a single channel or multiple connected channels as well as associated fittings, forming a structural system that is used to _____ communication, fire alarm, and optical fiber cables.
 - support and route
 - protect and identify
 - route and direct
 - conceal and support
4. Communications equipment performs telecommunications operations for transmissions of _____.
 - telephones and internet
 - live streaming
 - encoded data and encrypted video
 - audio, video and data

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5. Communications equipment uses conductors dedicated solely to the operation of the equipment.
 - True
 - False
6. A communications raceway is an enclosed nonmetallic channel designed for holding communication cables in _____ applications.
 - commercial
 - plenum, riser and general-purpose
 - hazardous and corrosive
 - outdoor and wet
7. A unit of an electrical system, other than a conductor, that carries or controls energy as its principal function is a/n _____.
 - device
 - enclosure
 - fitting
 - raceway
8. The conductive path that provides a ground-fault current path and connects normally non-current-carrying metal parts of equipment together is known as an equipment grounding conductor or EGC.
 - True
 - False
9. A compressor and motor combination enclosed in the same housing with no external shaft or shaft seals with the motor operating in a refrigerant is known as a _____.
 - refrigeration cooling system
 - hermetic refrigerant motor-compressor
 - sealable system
 - separately derived system
10. A device that provides a means for connecting intersystem bonding conductors for communications systems to the grounding electrode system is known as an _____.
 - intersystem terminal
 - intersystem conductor
 - intersystem ground
 - intersystem bonding termination
11. A customizable manufactured assembly that supports and energizes luminaires and allows the luminaires to be repositioned anywhere on the track is known as a _____.
 - lighting track
 - ground fault path
 - communication raceway
 - none of the answers provided
12. The length of a lighting track can be altered by the _____ of sections of track.
 - stretching or shrinking
 - welding or cutting
 - addition or subtraction
 - replacement or rewiring
13. _____ locations are subjected to moderate degrees of moisture but are protected from weather and not subject to saturation with water or other liquids.
 - Damp
 - Wet
 - Dry
 - Moist
14. Examples of damp locations are _____.
 - swimming pools
 - bathrooms
 - rooftops
 - porches
 - cold-storage warehouses
15. "Premises wiring" refers to interior and exterior wiring that includes power, lighting, control and _____ together with all their associated hardware, fittings, and wiring devices, both permanently and temporarily installed.
 - utility power stations
 - bluetooth devices
 - audio speakers
 - video remote control devices
 - signal circuit wiring
16. Power sources are limited to interconnected and stand-alone batteries, solar photovoltaic systems, other distributed generation systems, and generators.
 - True
 - False

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17. Enclosed channels of _____ material designed expressly for holding wires, cables, or busbars, with additional functions as permitted in the NEC, are defined as raceways.
- composite
 - nonmetallic but organic
 - metallic or nonmetallic
 - none of the answers provided
18. A raceway is identified within specific article definitions.
- True
 - False

Quiz 2

1. A complete subassembly of parts and devices for field conversion of utilization equipment is known as a _____.
- raceway
 - grounding conductor
 - retrofit kit
 - fitting
 - device
2. Sealable equipment is enclosed in a _____ provided with a means of sealing or locking so that live parts cannot be made accessible without opening the enclosure.
- box or room
 - metallic vessel
 - case or cabinet
 - ventilated housing
3. Is it possible for sealable equipment to operate without opening the enclosure?
- Yes, provided the enclosure is ventilated.
 - No, it is not possible.
 - Yes, it is possible, depending on the type of equipment.
 - Yes, provided the controls are outside the enclosure.
4. An electrical source, other than a service, having no direct connection(s) to circuit conductors of any other electrical source, other than those established by grounding and bonding connections, is known as a _____.
- separately derived system
 - non-separately derived system
 - single-derived system
 - multi-derived system

5. An arc-flash warning shall be located so that it is clearly visible to qualified persons before _____.
- examination or linking
 - adjustment or servicing
 - painting or scraping
 - replacement or removal
6. Electrical equipment, such as switchboards, switchgear, panelboards, control panels, meter sockets, and control centers in other than dwelling units must be _____ to warn qualified persons of associated dangers from arc flashes.
- field or factory marked
 - painted red
 - labeled with a lightning bolt
 - accessible only with a key
7. Where caution, warning, or danger signs or labels are required by code, the markings shall adequately warn of hazards, using effective words and/or colors and/or symbols.
- True
 - False
8. Where caution, warning, or danger signs or labels are required by code, the labels shall be permanently affixed to the _____.
- junction box or enclosure
 - vehicle method
 - wiring termination points
 - equipment or wiring method
 - none of the answers provided
9. Field-applied hazard markings _____ permitted to be hand written.
- shall be
 - shall not be
 - not listed in the code are
 - could be
10. Where caution, warning, or danger signs or labels are required by code, the labels shall be of _____ to withstand the weather.
- specially-designed paper
 - laminated plastic
 - sufficient durability
 - engraved aluminum

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11. Service equipment, other than in dwelling units, shall have a field marking _____.
 - of the maximum available fault current
 - of the date the equipment was installed
 - that is suitable for hazardous conditions
 - all of the answers provided
12. The fault-current markings applied to service equipment are related to the required short-circuit current ratings of the equipment.
 - True
 - False
13. Where a disconnecting means is required to be lockable in the open position, provisions for locking must remain in place whether or not the lock is _____.
 - fastened
 - installed
 - visible
 - replaced
14. _____ connection locking provisions shall not be required to remain in place without the lock installed.
 - Device
 - Raceway
 - Protected
 - Cord-and-plug
15. Where installed equipment rated 800 A or more that contains overcurrent devices, switch devices, or control devices, and where the entrance to the working space has a personnel door less than 25 feet from the working space, the door shall _____.
 - open in either direction, provided it is equipped with panic hardware
 - open in the direction of egress and be clearly labeled in large red letters
 - open in the opposite direction of egress and be equipped with breakaway hinges
 - open in the direction of egress and be equipped with panic hardware
16. Outdoor electrical equipment shall be _____.
 - installed in metallic enclosures
 - locked to prevent accidental contact by personnel
 - at least 25 feet from vehicular traffic
 - protected from accidental contact by spillage or leakage from piping systems
 - all of the answers provided

17. Dedicated equipment space is the space may include piping.
 - True
 - False
18. Equipment space extending from grade to a height of _____ above the equipment shall be dedicated solely to the electrical installation.
 - 1 foot
 - 2 feet
 - 4 feet
 - 6 feet
 - 10 feet

Quiz 3 – Chapter 2

1. Where more than one neutral conductor associated with different circuits is in an enclosure, grounded circuit conductors of each circuit shall be identified or grouped to correspond with the ungrounded circuit conductors by _____ in at least one location within the enclosure.
 - metallic clips
 - duct or masking tape
 - wire insulation color
 - wire markers, cable ties or similar means
2. The requirement for grouping or identifying the conductors for different circuits within an enclosure shall not apply if the branch-circuit or feeder conductors enter the enclosure from _____ unique to the circuit that makes the grouping identification obvious.
 - a cable or raceway
 - a fiber optic cable
 - an emergency secondary power source
 - a source of battery power
3. The requirement for grouping or identifying the conductors for different circuits within an enclosure shall not apply where branch-circuit conductors pass through a box or conduit body _____.
 - that is nonmetallic
 - without a loop, splice or termination
 - that contains no more than two different circuits
 - that contains terminations

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4. A multiwire branch-circuit consisting of ungrounded and/or grounded circuit conductors will be grouped by cable ties or other means in at least _____ within the panelboard or other point of origin.
 - one location
 - two locations
 - three locations
 - four locations
5. The requirement for grouping multiwire branch circuit conductors within a panelboard or point of origin shall not apply if the conductors are identified at their terminations with _____ corresponding to the appropriate circuit number.
 - colored wire markers
 - numbered wire markers
 - coded cable ties
 - factory-labeled metal ties
6. Receptacles installed within _____ of the outside edge of a dwelling unit sink must be GFCI protected.
 - 2 feet
 - 4 feet
 - 6 feet
 - 8 feet
7. Receptacles installed within _____ of the outside edge of a dwelling unit bathtub or shower stall must be GFCI protected.
 - 2 feet
 - 4 feet
 - 6 feet
 - 8 feet
8. Receptacles installed in dwelling unit laundry areas must be GFCI protected.
 - True
 - False
9. Receptacles installed on a non-dwelling unit rooftop must be GFCI protected and readily accessible.
 - True, but only if the receptacle is within 6 feet of the rooftop edge.
 - True, but only if the receptacle is within 10 feet of the rooftop edge.
 - False, non-dwelling unit rooftop receptacles do not have to be GFCI protected.
 - True, but they only need to be readily accessible from the rooftop.
10. Receptacles installed in non-dwelling unit _____ must be GFCI protected.
 - storage closets
 - garages and service bays
 - vehicle showrooms
 - vehicle exhibition rooms
 - all of the answers provided
11. GFCI protection shall be provided for outlets that supply _____ installed in dwelling unit locations.
 - dishwashers
 - microwaves
 - ovens
 - refrigerators
12. All 15A and 20A, 120V branch circuits supplying dormitory outlets in _____ require AFCI protection.
 - refrigerators
 - bathrooms
 - display cases
 - bedrooms and hallways
 - all of the answers provided and more
13. An individual branch-circuit shall be permitted to supply any load for which it is rated, but in no case shall _____.
 - the load increase the branch-circuit ampere rating
 - the load exceed the branch-circuit ampere rating
 - the load decrease the branch-circuit ampere rating
 - none of the answers provided
14. In no case shall dwelling unit bathroom receptacle outlets be located more than _____ below the top of a sink basin.
 - 2 inches
 - 6 inches
 - 1 foot
 - 2 feet
15. A feeder that provides continuous and/or non-continuous loads and the minimum _____ shall have an allowable ampacity of not less than the non-constant load.
 - feeder conductor size
 - grounding-conductor size
 - branch-circuit conductor size
 - receptacle conductor size

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16. For feeders of 600 volts or less, the minimum feeder conductor size shall have an allowable ampacity of not less than the maximum load to be served after the application of any _____.
- splices or terminations
 - installation factors
 - adjustment or correction factors
 - additional insulation or supports
17. In no case shall the point of attachment of an overhead service conductor to a building or other structure be less than _____ above finished grade.
- 2 feet
 - 4 feet
 - 6 feet
 - 8 feet
 - 10 feet
18. Only _____ conductors shall be permitted to be attached to a service mast.
- feeder
 - power service-drop or overhead service
 - uninsulated
 - copper alloy
19. A grounding electrode conductor may be connected between the grounding electrode system and _____.
- metal water pipes
 - any metallic enclosure
 - a load-side bonding jumper
 - an equipment grounding conductor installed within the feeder
20. Is it permissible for a metal structural frame of a building be used as a conductor to interconnect electrodes that are part of the grounding electrode system?
- Yes
 - No
21. A concrete-encased electrode of either the conductor type, reinforcing rod or bar extending from its location within the concrete to _____ above the concrete shall be permitted.
- another section of concrete
 - an accessible location
 - any location
 - a metal structure

Quiz 4 – Chapter 3

1. Chapter 3 of the NEC covers _____.
- general requirements for wiring methods and materials for wiring installations
 - general requirements for signaling and communication systems
 - special conditions for wiring
 - grounding and bonding
 - all of the answers provided
2. Underground _____ installed under a building shall be in a raceway.
- devices
 - tubing
 - water pipes
 - vents and ducts
 - cables and conductors
3. When running conductors and cables in an environmental air plenum the nonmetallic cable ties and nonmetallic cable accessories used to secure and support these cables must be _____.
- listed as having low smoke release properties
 - listed as having high heat release properties
 - black in color
 - locked into position
4. The use of _____ is a permitted manner with which to close an opening in a cabinet or a cutout box.
- an approved cap
 - epoxy
 - electrical tape
 - silver duct tape
 - plumber's putty
5. A warning label applied to an enclosure that has a feed-through conductor must identify the closest disconnecting means for that feed-through conductor.
- True
 - False
6. A drainage opening not larger than _____ is permitted to be installed in conduit boxes that are used in damp or wet locations.
- 1/4 inch
 - 5/16 inch
 - 3/8 inch
 - 7/16 inch
 - 1/2 inch

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7. Openings through which conductors enter boxes shall be closed in an approved manner.
 - True
 - False
8. Boxes can be supported from _____.
 - cable ties
 - feed-through conductors
 - a service mast
 - any structural member
9. Screws used for attaching covers or other equipment to a box must be _____ that _____ the thread gage or the screws that were provided by the manufacturer.
 - machine screws – match
 - wood screws – match
 - bolts – are self-taping and will work with
 - sheet metal – are self-taping and will work with
10. Boxes that support luminaires or lamp holder outlets on a vertical surface must be _____.
 - identified for luminaires that are 50 pounds or smaller
 - marked as suitable for vertical installations
 - identified and marked with the maximum luminaire weight if other than 50 pounds
 - none of the answers provided
11. The maximum weight of the luminaire that is permitted to be supported by a box or lamp holder outlet mounted on a vertical surface is _____.
 - 125% of the weight marked in the box
 - 40 pounds unless otherwise marked
 - 50 pounds unless otherwise marked
 - 65 pounds
 - unlimited
12. A ceiling outlet, used only for supporting a luminaire or lamp holder must be able to support, at a minimum, a luminaire weighing _____.
 - 30 pounds
 - 40 pounds
 - 50 pounds
 - 65 pounds
13. A ceiling luminaire outlet box used to support a luminaire that weighs more than 50 pounds must list on the _____ box the maximum weight that it shall be permitted to support.
 - interior of the
 - exterior of the
 - cover plate for the
 - manufacturer's literature in the
14. Guard strips must be installed to protect armored cables (AC) in an accessible attic. The strips must be _____.
 - at least as high as the cables
 - greater in height than the cables
 - 3/4 inches above the height than the cables
 - at least 1-1/2 inches higher than the cables
15. Type MC cable that has a corrosion-resistant jacket over its metallic covering can be used in wet locations when which of the following conditions are met?
 - The cable is enclosed in a raceway.
 - A jacket resistant to moisture is provided under the metal covering.
 - The conductors under the metallic covering are made of non-corrosive metal.
 - Type MC cables are never permitted to be used in wet locations.
16. In vertical installations, listed Type MC cables with ungrounded conductors 250 kcmil and larger shall be secured at intervals not exceeding _____.
 - 3 feet
 - 5 feet
 - 8 feet
 - 10 feet
 - 12 feet
17. Type MC cable of the interlocked armor type, in lengths not exceeding _____ from the last point where it is securely fastened is used to connect equipment where flexibility is necessary to minimize the transmission of vibration from equipment or to provide flexibility for equipment that requires movement after installation.
 - 3 feet
 - 5 feet
 - 8 feet
 - 10 feet
 - 12 feet

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18. Type RMC – Rigid Metal Conduit shall be secured within _____ of each outlet box or other termination.
 - 3 feet
 - 5 feet
 - 8 feet
 - 10 feet
 - 12 feet
 19. Type RMC – Rigid Metal Conduit minimum fastening requirements shall be increased to _____ where structural members do not readily permit fastening every 3 feet.
 - 2 feet
 - 5 feet
 - 8 feet
 - 10 feet
 - 12 feet
 20. Where approved, Type RMC – Rigid Metal Conduit shall not be required to be securely fastened within _____ of the service head for above-the-roof termination of a mast.
 - 3 feet
 - 5 feet
 - 8 feet
 - 10 feet
 - 12 feet
 21. Type RMC – Rigid Metal Conduit shall be made from any one of the following materials except _____.
 - steel with or without protective coatings
 - red brass
 - aluminum
 - stainless steel
 - PVC / ABS
 22. Type FMC – Flexible Metal Conduit may be supported by listed flexible metal conduit fittings.
 - True
 - False
 23. Rigid Polyvinyl Chloride Conduit (PVC) has been re-defined using the term _____ instead of the term conduit to impart a more inclusive term for electricians.
 - raceway
 - round plastic pipe
 - white pipe
 - tubing
 24. Type LFNC – Liquidtight Flexible Nonmetallic Conduit can now be supported using listed LFNC fittings.
 - True
 - False
 25. The ampacity adjustment factors in 310.15(B)(3)(a) shall be applied only where the number of current-carrying conductors, including neutral conductors classified as current-carrying under the provisions of 310.15(B)(5), exceeds _____ at any cross section of the wireway.
 - 10
 - 20
 - 30
 - 40
 - 50
 26. A power distribution block may be installed on the line side of the service equipment if _____.
 - it is listed for the purpose
 - the manufacturer recommends it
 - it is non-metallic
 - it is suitable for such use
 - none of the answers provided
 27. A power distribution block in a metal wireway must be installed such that its terminals are _____.
 - visible
 - accessible
 - properly spaced
 - unobstructed
 - color matched
 28. Surface metal raceways shall be _____ in accordance with the manufacturer's installation instructions.
 - supported
 - painted
 - inspected
 - color coordinated
- Quiz 5 – Chapter 4**
1. A raceway that enters a lighting switch box must be _____ for all contained conductors, including grounded conductors.
 - small enough
 - large enough
 - wide enough
 - long enough

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2. A neutral conductor isn't required where a light switch can be accessed to add or replace any cables or wires without _____ past completed work.
 - replacing or reworking
 - evaluating or redesigning
 - damaging or removing
 - none of the answers provided
3. A neutral conductor isn't required at a switch where the switch controls a _____.
 - receptacle
 - panelbox
 - disconnect
 - raceway
4. Arc-fault circuit-interrupter type and ground-fault circuit-interrupter-type receptacles shall be installed_____.
 - on any non-vertical surface
 - within 3 feet of an accessible location
 - in a readily accessible location
 - where they are unlikely to need replacement
5. Screws used to attach a snap switch to a box must be of the type provided with a listed snap switch, or part of listed assemblies or systems.
 - True
 - False
6. In seating areas or similar surfaces, it is permissible to install receptacles in a face-up position provided they are _____.
 - covered by a protective face plate
 - part of a commercial furniture assembly
 - listed either as a receptacle assembly for countertop applications or as a GFCI receptacle assembly for countertop applications
 - installed in a suitable location
 - all of the answers provided
7. In all dwelling unit areas, all nonlocking-type _____, 15- and 20- ampere receptacles shall be listed as tamper-resistant.
 - 110-volt
 - 125-volt
 - 220-volt
 - none of the answers provided
8. All nonlocking-type 125-volt, 15- and 20-ampere receptacles located in _____ shall be listed as tamper-resistant.
 - hotels and motels
 - guest rooms and suites of hotels and motels
 - hallways of hotels and motels
 - none of the answers provided
9. In all child care facilities, all nonlocking-type 125-volt, 15- and 20-ampere receptacles are not required to be listed as tamper-resistant provided they are at least 3 feet above ground level.
 - True
 - False
10. A receptacle supplying lighting loads shall be connected to a dimmer unless the plug/receptacle combination is a nonstandard configuration type that is specifically listed and identified for each unique combination.
 - True
 - False
11. All circuits and circuit modifications shall be legibly field identified as to their _____.
 - termination points
 - ampacity limits
 - potential for safety hazards
 - specific purpose
 - all of the answers provided
12. The field identification of circuits and circuit modifications must include _____ that allows each circuit to be distinguished from the others.
 - color coding
 - an approved degree of detail
 - listed clip-on labels
 - conductors with distinct insulation jackets
13. Luminaires installed in concealed locations under steel roof decking shall be installed and supported so that there is at least _____ from the lowest surface of the roof decking to the top of the luminaire.
 - 1 inch
 - 1-1/4 inch
 - 1-1/2 inch
 - 2 inches

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14. Article 411 covers lighting systems operating at 30 volts or less and their associated components as well as _____.
- lighting equipment connected to a Class 1 power source
 - lighting equipment connected to a Class 1 distributor
 - lighting equipment connected to a Class 2 power source
 - lighting equipment connected to a Class 3 power source
15. A low-voltage lighting system operating at no more than 30 volts must include _____ that is identified for the use.
- an isolating power supply
 - high-voltage luminaires
 - extra support components
16. A low-voltage lighting system's power supply output circuit shall be rated for _____ maximum under all load conditions.
- 25 amperes and 30 volts
 - 30 amperes and 25 volts
 - 10 amperes and 30 volts
 - 25 amperes and 20 volts
17. Listed Class 2 lighting equipment shall be _____ in conformance with Chapter 9, Table 11(A) or Table 11(B).
- approved
 - listed
 - moisture resistant
 - rated
18. The GFCI protection device required for appliances such as vending machines and tire inflation machines shall be readily accessible only to authorized personnel.
- True
 - False
19. Canopies of ceiling-suspended (paddle) fans and outlet boxes taken together shall provide sufficient space so that _____ can be properly installed.
- terminations
 - switches
 - conductors and their connecting devices
 - the fan blades

20. In a completed ceiling fan installation, each outlet box shall be provided with a cover even if it is concealed by the fan canopy.
- True
 - False

Quiz 6 – Chapter 5

1. Class 1 Locations are may have explosive _____ present in the air in quantities sufficient to produce explosive or ignitable mixtures.
- gas
 - fibers
 - dust
 - droplets
2. A location in which ignitable concentrations of flammable gasses may exist under normal operating conditions is a Class 1 _____ location.
- Division 1
 - Section A
 - Division 2
 - Normal Hazard
3. A location that may contain ignitable concentrations of flammable gasses, but only in the case of an equipment failure is classified as a Class 1 _____ location.
- Division 1
 - Division 2
 - Section 2
 - Extra Hazardous
4. Combustible dust particles are _____ microns or smaller, and present a fire or explosion hazard when dispersed and ignited in air.
- 100
 - 200
 - 300
 - 400
 - 500
5. Combustible dust particles will pass through a US No. _____ Standard Sieve.
- 25
 - 30
 - 35
 - 40
 - 50

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6. Which of the following is not part of the Dust Fire & Explosion Pentagon?
 - Ignition source
 - Confinement of dust cloud
 - Combustible dust
 - Dispersion of dust particles
 - Relative humidity of the air
7. Class I Temperature. The equipment temperature marking specified in 500.8(C) shall _____ the autoignition temperature of the specific gas or vapor that the equipment will encounter.
 - not exceed
 - be equal to
 - be greater than
 - no less than
8. The term autoignition temperature is interchangeable with the term _____.
 - ignition temperature
 - combustion temperature
 - self-contained burning temperature
 - self-starting combustion temperature
9. It is permissible to use flexible fittings at motor terminals.
 - Yes, this is not only permitted, but required.
 - No, this is not permitted.
 - Yes, this is permitted provided the flexible fittings are listed for the location.
 - Yes, this is permitted only for temporary installations.
10. Where it is necessary to use flexible connections in an industrial location, it is permissible to install Type TC-ER-HL cable.
 - Yes, this is permitted.
 - Yes, this is not only permitted, but required.
 - Yes, this is permitted for equipment limited to 400 volts nominal.
 - No, this is not permitted.
 - Yes, this is permitted for applications limited to 600 volts provided the additional requirements are met.
11. Type TC-ER-HL cable installed in an industrial location is not required to _____.
 - have an overall jacket
 - have a separate equipment grounding conductor
 - be terminated with fittings listed for the location
 - have a UV-resistant covering
12. Optical fiber cable Types OFNP, OFCP, OFNR, OFCR, OFNG, OFCG, OFN, and OFC shall be permitted to be installed in raceways in accordance with 501.10(A).
 - True
 - False
13. Optical fiber cables installed in raceways _____.
 - do not require additional sealing
 - must be sealed in accordance with 501.15
 - must be sealed only where they enter or exit a listed hazardous space
 - must be sealed only if they are installed in a moist or wet location
14. A cable seal must be installed within _____ of an explosionproof enclosure in a Class I location.
 - 12 inches
 - 18 inches
 - 24 inches
 - 36 inches
15. A cable seal is not required for conduit entry into an enclosure in a Class I location if the switch is _____.
 - 24 volts or less
 - bonded and grounded
 - located in a hermetically sealed chamber
 - remotely operated
16. A cable seal is not required for conduit entry into an explosionproof enclosure in a Class I location if the switch in the enclosure is immersed in _____.
 - water
 - oil
 - gasoline
 - 10 W-40
 - turpentine

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17. A cable seal is not required for conduit entry into an explosionproof enclosure in a Class I location if the contacts are enclosed within _____.
- a metal chamber
 - an explosionproof enclosure
 - a factory chamber
 - an identified location
 - an explosionproof chamber, identified for the location, and factory sealed
18. A non-incendive circuit _____.
- may spark under normal operations but the sparks do not have enough energy to cause ignition
 - is also known as a double-bonded circuit
 - may spark under normal conditions
 - is a circuit that is not electrically powered
19. Conduit entering a pressurized enclosure in a Class 1 area must have conduit seals installed within _____ of the enclosure in each conduit entry into a pressurized enclosure where the conduit is not pressurized as part of the protection system.
- 12 inches
 - 18 inches
 - 24 inches
 - 36 inches
20. Where two or more explosion-proof enclosures in a Class I location require conduit seals, the seals shall not be located more than _____ from each enclosure.
- 12 inches
 - 18 inches
 - 24 inches
 - 36 inches
21. Where two or more explosionproof enclosures in a Class I location require conduit seals, the total run distance of the nipples between the two enclosures shall not be more than _____.
- 12 inches
 - 18 inches
 - 24 inches
 - 36 inches
22. A conduit seal shall be required in each conduit run leaving a Class I Division 1 location, and must be installed within _____ of the boundary.
- 2 feet
 - 5 feet
 - 10 feet
 - 15 feet
 - 20 feet
23. Metal conduit that contains no unions, couplings, boxes, or fittings that passes completely through a Class I Division 1 location with no fittings installed within 12 inches of either side of the boundary shall not require a conduit seal if the termination points of the unbroken conduit are located in unclassified locations.
- True
 - False
24. For an electrical system in a Class 1 location, bonding can be made by _____.
- bonding jumpers
 - locknut bushings
 - either bonding jumpers or locknut bushings
 - neither bonding jumpers nor locknut bushings
25. In a Class 1 location, flexible metal conduit does not need an equipment bonding jumper if the following conditions are met except _____.
- if the voltage is less than 120 V
 - the length of flexible metal is less than 6 feet
 - the circuit has a maximum amp load of 10 amps
 - the circuit is not a power utilization load
26. Receptacles in a Class 1 location shall be part of the premises wiring unless specifically permitted otherwise.
- True
 - False
27. An attachment plug in conjunction with a receptacle in a Class 1 location must have the attachment switch in the _____ position before the plug can be inserted or removed.
- off
 - on
 - neutral
 - positive
 - negative

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Quiz 7

1. Class II locations are those that may have combustible _____ present in the air in quantities sufficient to produce explosive or ignitable mixtures.
 - gas
 - fibers
 - dust
 - droplets
2. Class II Division _____ locations may have combustible dust in the air under normal operating conditions.
 - 1
 - 2
 - 3
 - 4
3. Class II Division _____ locations may have combustible dust in the air when there is an equipment failure.
 - 1
 - 2
 - 3
 - 4
4. Which of the following is permissible for sealing optical fiber cable installed in a Class II location?
 - plumber's sealing putty
 - electrical tape
 - rubber fittings
 - listed flexible fittings
 - electrical sealing putty
5. In Class II locations, a flexible cord can be used between portable lighting equipment and _____.
 - utilization equipment
 - an attachment plug suitable for use in wet locations
 - the fixed portion of its supply circuit
 - a Class I location
6. A flexible cord can be used in a Class II location on fixed or mobile electrical utilization equipment if it is _____.
 - protected from damage by metal conduit
 - located only in a commercial establishment
 - in a location where only qualified people can install and service the installation
 - readily accessible
7. In a Class II location, a flexible cord can be used with an electric submersible pump when _____.
 - the pump can be removed without entering the wet-pit
 - the wet-pit is fully ventilated
 - the fluids pumped are non-toxic
 - all of the listed answers
 - none of the listed answers
8. A flexible cord may not be used with an electric mixer in a Class II location when it is intended to travel into and out of open-type tanks or vats.
 - True
 - False
9. Flexible cords used in Class II locations shall comply with all the following conditions except _____.
 - it must be listed for extra-hard usage
 - it must be yellow in color
 - it must be in a Class II Division 1 location, and have a listed cord connector and seal
 - it must be of continuous length
 - None of the answers provided
10. Class III locations are those that may have combustible _____ present in the air in quantities sufficient to produce explosive or ignitable mixtures.
 - gas
 - fibers
 - dust
 - droplets
11. Class III Division _____ locations are those in which fibers are handled, manufactured or used.
 - 1
 - 2
 - 3
 - 4
12. Class III Division _____ locations are those in which easily ignitable fibers are stored or handled other than in the manufacturing process.
 - 1
 - 2
 - 3
 - 4

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13. Elevator cable of type EO, EPT or ETT can be used in a Class III location if _____.
 - it is no longer than 40 feet in length
 - it is terminated with listed dust-tight fittings
 - both of the answers provided
 - neither of the answers provided
14. General-purpose enclosures shall be permitted for intrinsically safe apparatus _____.
 - provided the enclosure is dusttight
 - if the enclosures is hermetically sealed
 - because the apparatus are inherently water proof
 - provided they are installed on a vertical surface
 - because they prevent contact with live parts
4. For both open and closed dock construction, the Class I Hazardous location zone is _____ in height and _____ in all directions around the fuel dispenser.
 - 18 inches – 20 feet
 - 20 inches – 18 feet
 - 16 inches – 10 feet
 - 24 inches – 30 feet
5. Voids in motor fuel dispensing facility docks where flammable liquids or vapors could accumulate within _____ of the dispenser are classified as Class I Division 1 locations.
 - 10 feet
 - 20 feet
 - 30 feet
 - 40 feet

Quiz 8

1. The electrical wiring and equipment located at or serving motor fuel dispensing stations at boatyards and marinas shall be installed _____ of the wharf, pier, or dock _____ the liquid piping system.
 - on the side – opposite
 - in front – next to
 - behind – opposite
 - behind – next to
2. A motor fuel dispensing facility dock with closed construction must have _____ between the bottom of the dock and the water.
 - no space
 - no more than 18 inches of space
 - open space
 - open space greater than 18 inches
3. A motor fuel dispensing facility dock with open construction is built on stringers supported by pilings, floats or similar construction and has _____ between the bottom of the dock and the water.
 - no space
 - no more than 18 inches of space
 - open space
 - open space greater than 18 inches
6. An example of an enclosed spray process would be _____.
 - spraying a boat outdoors
 - spray painting the exterior of a house with oil based paint
 - spray painting a car in one's driveway
 - all of the answers provided
 - none of the answers provided
7. For unenclosed spray processes, a Class I Division 2 zone is all the space outside of but within _____ horizontally and _____ vertically of the Class I Division 1 zone.
 - 1-1/2 foot – 10 feet
 - 10 feet – 20 feet
 - 20 feet – 10 feet
 - No dimensions for this zone are defined.
8. The classified area for a closed-top, open-face or open-front spray booth is within _____ of any opening.
 - 3 feet
 - 5 feet
 - 10 feet
 - 15 feet
 - 20 feet
9. The Class I, Division 2 zone for an open-top spray booth is _____ vertically above the booth and within _____ of other booth openings.
 - 18 inches – 20 feet
 - 3 feet – 20 feet
 - 3 feet – 3 feet
 - 10 feet – 20 feet

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10. The classified zone for an enclosed spray booth is the area within _____ of any opening.
 - 3 feet
 - 5 feet
 - 10 feet
 - 20 feet
11. In an enclosed spray booth, where the exhaust air is re-circulated, the interior of the recirculation path is classified as a hazardous location.
 - True
 - False
12. For a limited finishing workstation, the area inside the _____ space horizontally and vertically beyond the volume enclosed by the outside surface of the curtains or partitions shall be classified.
 - 3 foot
 - 5 foot
 - 10 foot
 - 20 foot

Quiz 9 – Chapter 6

1. It is permissible for fixed, mobile, or portable electric signs, section signs, outline lighting, and retrofit kits, regardless of voltage, to be installed, even if they are not listed.
 - No, only listed signs and kits are permitted.
 - Yes, this is permissible provided that they are field inspected and field labeled.
 - Yes, this is permissible provided the manufacturer has provided installation instructions.
 - Yes, this is permissible if approved by special permission.
2. Electric signs, outline lighting, skeleton tubing systems, and retrofit kits shall be _____.
 - listed and labeled for use in a wet environment
 - marked with installation instructions
 - marked to indicate that field wiring and installation instructions are required
 - marked with their maximum operating voltage
3. Portable and cord-connected electric signs are required to be marked with installation instructions.
 - True
 - False
4. A disconnect for an electric sign shall be located where?
 - On the side of the building supplying the sign.
 - Inside the building supplying the sign.
 - At the point of entry to the sign enclosure or pole.
 - Inside the sign enclosure.
5. An electric sign disconnect shall not be required for a branch or feeder circuit _____ where enclosed in a listed raceway.
 - installed along the top of the sign
 - passing through the sign
 - installed along the bottom of the sign
 - none of the answers provided
6. _____ of electric signs, outline lighting systems and skeleton tubing systems must be connected to the circuit equipment grounding conductor.
 - Signs
 - Outline lighting systems
 - Non-metallic components
 - Metal equipment
7. Ballasts, transformers, electronic power supplies and class 2 power sources for electric signs shall be of the self-contained type or _____.
 - be enclosed by placement in a listed sign body or listed separate enclosure
 - be field enclosed in a nonmetallic enclosure
 - be of a type suitable for use in the location
 - have their own self-contained power supply
8. An elevator disconnecting means shall be an enclosed externally operable fused motor circuit switch or circuit breaker that is lockable in the closed position.
 - True
 - False
9. The provisions for locking an elevator disconnecting means shall remain in place _____.
 - provided the lock is installed
 - provided the lock is not in the open position
 - whether or not the lock is installed
 - except during maintenance by authorized personnel

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10. Audio system equipment supplied by branch-circuit power shall not be placed horizontally within _____ of the inside wall of a pool.
 - 1 foot
 - 2 feet
 - 3 feet
 - 4 feet
 - 5 feet
11. A _____ is an example of separately derived information technology equipment.
 - a computer
 - a laptop
 - a projector
 - a data center
 - none of the answers provided
12. A laptop is an example of _____.
 - separately derived information technology equipment
 - information technology grounding equipment
 - non-separately derived information technology equipment
 - a data center
13. A portable hot tub that is aboveground shall be capable of holding water to a maximum depth of _____.
 - 36 inches
 - 58 inches
 - 42 inches
 - 72 inches
14. Electrical equipment shall be installed in rooms or pits that do not have a drainage to prevent water accumulation during normal operation or filter maintenance.
 - True
 - False
15. Every maintenance disconnecting means for a fountain shall be readily accessible and within sight of its equipment, and shall be located at least _____ horizontally from the inside walls of the fountain.
 - 1 foot
 - 2 feet
 - 3 feet
 - 4 feet
 - 5 feet
16. The horizontal distance from a hot tub to its disconnecting means is to be measured from the water's edge along the _____ path required to reach the disconnect.
 - longest
 - shortest
 - highest
 - driest
17. GFCI protection is required for outlets supplying pool pump motors connected to _____ branch circuits, whether by receptacle or direct connection.
 - 1-phase 120v through 220v
 - 2-phase 120v through 220v
 - 1-phase 120v through 240v
 - 2-phase 120v through 240v
18. Listed low voltage luminaires not requiring grounding that don't exceed the low voltage contact limit and are supplied by listed transformers that comply with 680.23(A)(2) shall be permitted to be located _____ a pool.
 - within the walls of a pool
 - beneath a pool or hot tub water level
 - beneath the fountain spray
 - less than 5 feet from the inside walls of a pool
19. Branch circuits or feeders supplying an electric sign installed within a fountain shall have _____ for personnel.
 - sufficient head clearance
 - color-coded insulation
 - ground-fault circuit-interrupter protection
 - None of the answers provided
20. Both metal piping systems and grounded metal parts in contact with the circulating water of a swimming pool or fountain shall be bonded together using a solid copper bonding jumper that is _____.
 - labeled for use in a corrosive environment
 - at least 8 AWG
 - covered with a waterproof insulating jacket
 - no larger than 10 AWG

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Quiz 10 – Chapter 7 & 8

1. A listed surge protection device (SPD) is required to be installed on _____ for switchboards and panelboards.
 - emergency systems less than 15 KW
 - emergency systems greater than 15 KW
 - 208/240volt emergency systems
 - any emergency system switchboard or panelboard
2. A generator may be required to have only one disconnecting means _____.
 - provided the generator is located indoors
 - if there is a readily accessible disconnect within 18 inches of the generator
 - if the disconnect is inside of the building
 - where all ungrounded conductors pass through the building
 - all of the answers provided
3. An emergency lighting system shall include emergency illumination installed in the disconnect area when the disconnecting means are installed _____.
 - indoors
 - outdoors
 - either indoors or outdoors
 - only in a room without windows
4. Multi-wire branch circuits are allowed for emergency lighting and power circuits.
 - Yes, provided the total load is 20 amps or less.
 - Yes, if the circuit is 120 v.
 - Yes, but only for residential installations.
 - No, this is never permitted.
5. Ground Fault Protection of Equipment (GFPE) _____ required with automatic disconnecting means on emergency power systems but there _____ be a method of indication.
 - is – must
 - is not – must
 - is – is not required to
 - is not – is required to
6. Selective coordination of emergency system overcurrent devices with supply-side overcurrent devices must be performed by a licensed professional engineer engaged primarily in the design, installation or maintenance of electrical systems.
 - Yes, this is true.
 - No, it may also be performed by other qualified persons.
 - No, it may also be selected by the AHJ.
 - No, the coordination must be performed by a licensed electrical inspector.
7. Where an outdoor housed generator set is equipped with a readily accessible disconnecting means in accordance with 445.18 and the disconnecting means is located within sight of the building supplied, how many additional disconnecting means are required where ungrounded conductors serve or pass through the building?
 - Zero.
 - One.
 - No more than two.
 - No fewer than one.
8. Which of the following is an acceptable mandatory warning sign to be placed near a power inlet used for a temporary connection to a portable generator that indicates the type of derived system and its capabilities?
 - WARNING: FOR 120/240 VOLT SYSTEM ONLY
 - WARNING: FOR CONNECTION OF A SEPARATELY DERIVED (BONDED NEUTRAL) SYSTEM ONLY
 - WARNING: FOR 3 PHASE POWER – 208/240 VOLT SYSTEM ONLY
 - Any of the answers provided
 - None of the answers provided
9. How many additional disconnecting means are required for the ungrounded conductors of a housed generator rated greater than 15kW if it is installed outdoors, and has a readily accessible disconnecting means which is within sight of the building supplied.
 - Zero
 - One
 - Two
 - Three

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10. Where a portable generator rated less than 15kW is installed using a cord-and-plug connection, how many additional disconnecting means are required where ungrounded conductors serve or pass through the building or structure?
 - Zero
 - One
 - Two
 - Three
11. In a raceway containing conductors for power-limited circuits, the following are permitted:
 - water pipes
 - steam pipes
 - natural gas lines
 - PEX water lines
 - none of the answers provided
12. Class 2 and Class 3 cables installed in corrosive, damp, or wet locations should have cable covering ratings for these locations.
 - True
 - False
13. What is the maximum number of PLFA circuits permitted within a raceway or cable routing assembly?
 - Zero
 - One
 - Two
 - Three
 - Two or more
14. An innerduct is defined as _____.
 - a nonmetallic raceway placed within a larger raceway
 - a double plenum for air conditioning systems
 - a metallic outer tube with metallic inner tubes for optical fiber
 - none of the answers provided
15. An optical fiber cable is a _____ assembly of _____ optical fibers having an overall covering.
 - factory – one or more
 - field – four or more
 - factory – four or more
 - factory or field – one or more
 - none of the answers provided
16. Nonmetallic cable ties used to support optical fiber cables in plenums shall _____.
 - be listed as having no-smoke properties
 - be listed as having high heat release properties
 - be listed as having low smoke and low heat release properties
 - be field labeled as suitable for use in environmental air spaces
 - lock into position without sparking
17. Unlisted nonconductive outside plant optical fiber cables shall be permitted to enter the building from the outside and shall be permitted to be installed in any of the following raceways except _____.
 - intermediate metal conduit (IMC)
 - rigid metal conduit (RMC)
 - rigid polyvinyl chloride conduit PVC
 - electrical metallic tubing (EMT)
 - type L copper tubing
18. Rigid metal conduit (RMC) or intermediate metal conduit (IMC) containing optical fiber entrance cable shall be connected by _____ to a grounding electrode in accordance with 770.100(B).
 - a bonding conductor
 - a grounding electrode conductor
 - either a bonding conductor or a grounding electrode conductor
 - a nonmetallic bonding jumper
19. When installing optical fiber cable in _____, the electrician must perform the install in accordance with NEC articles 362.24 through 362.56.
 - underground trenches
 - open cable trays
 - outdoor lighting assemblies
 - damp, wet or corrosive locations
 - listed communications raceways
20. An electrical circuit protective system is used to _____.
 - protect the wiring system in the case of exterior fire exposure
 - prevent an arc flash
 - minimize toxic gas from a fire
 - automatically signal the fire department in the case of an exterior fire

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21. A listed plenum communications raceway may be permitted to be installed as an innerduct in _____ permitted in Chapter 3.
- any type of listed raceway
 - a corrosive environment near a swimming pool
 - an unlisted raceway that is suitable for such use
 - none of the answers provided
22. Nonmetallic cable ties used to support communication system cables in plenums shall _____ when nonmetallic cable ties and other nonmetallic cables accessories are used for securing and supporting.
- be listed as having no-smoke properties
 - be listed as having high heat release properties
 - be listed as having low smoke and low heat release properties
 - be field labeled as suitable for use in environmental air spaces
 - lock into position
23. Rigid metal conduit containing communications entrance wire shall be connected by a _____ to a grounding electrode in accordance with 800.100(B).
- a bonding conductor
 - a grounding electrode conductor
 - either a bonding conductor or a grounding electrode conductor
 - a nonmetallic bonding jumper
24. When installing communication wires and cables in _____, the electrician must perform the install in accordance with NEC articles 362.24 through 362.56.
- open cable trays
 - listed plenum communication raceways
 - fountains
 - ceiling-suspended luminaires
 - underground trenches
25. The maximum spacing between vertical supports for communication cables is _____.
- 4 feet
 - 5 feet
 - 10 feet
 - 12 feet
 - 20 feet
26. Nonmetallic cable ties and cable accessories used to support antenna cables for television and radio in environmental air spaces shall be listed as _____.
- smokeless
 - having high heat release properties
 - having both low smoke and low heat release properties
 - suitable for use in damp locations
 - able to support at least 25 pounds