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7. Upon passing, you will proceed to the next section. If failed to pass, you will be moved to the beginning of that section for more review.

Quiz 1 – Chapter 1

1. Being reached quickly for operation, renewal, or inspection without having to use tools, climb over, remove obstacles, or resort to portable ladders is known as ________.
   - instantly reachable
   - readily accessible
   - accessible
   - reachable

2. An adjustable speed drive system contains ________.
   - a motor
   - auxiliary equipment
   - both of the answers provided
   - neither of the answers provided

3. An example of an adjustable speed drive system is ________.
   - a conveyer
   - a hot pot dryer
   - a crusher
   - a hot wind dryer
   - any of the answers provided

4. A battery subsystem consisting of ________ or more storage batteries and chargers shall include inverters, converters, and other electrical equipment.
   - one
   - two
   - three
   - four

➤ Mobile users – Many current mobile devices are compatible with AnytimeCE and will probably work. If not, use a desktop or laptop computer to complete your course.
5. A cable routing assembly is meant for a single or multiple channels as well as associated fittings, forming a structural system that is used to ______ communication, fire alarm, and optical fiber cables.
   • A. support
   • B. protect
   • C. route
   • D. Both A and C

6. Communications equipment performs telecommunications operations for transmissions of ______.
   • data
   • video
   • audio
   • all of the answers provided

7. Communications equipment uses conductors dedicated solely to the operation of the equipment.
   • True
   • False

8. A communications raceway is an enclosed nonmetallic material meant for holding communication cables in ______ applications.
   • plenum
   • riser
   • general-purpose
   • all of the answers provided

9. 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

10. An effective ground-fault current path is designed to carry current under ground-fault conditions from the point of a ground fault on a wiring system to the ______.
    • overcurrent protective device
    • ground-fault detector
    • electrical supply source
    • none of the answers provided

11. The conductive path that provides a ground-fault current and connects normally noncurrent equipment together is known as an equipment grounding conductor or an EGC.
    • True
    • False

12. A combination consisting of a compressor and a motor, both of which are enclosed in the same housing with no external shaft or seals that contain the motor and operates in the refrigerant is known as a ______.
    • refrigeration cooling system
    • hermetic refrigerant motor-compressor
    • sealable system
    • separately derived system

13. 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
    • Intersystem bonding termination

14. Capable of being repositioned and assembled to support and power luminaires is known as a ______.
    • lighting track
    • ground fault path
    • communication raceway
    • none of the answers provided

15. The length of a lighting track can be altered by the ______ of sections of track.
    • addition
    • subtraction
    • both of the answers provided
    • neither of the answers provided

16. ______ locations are protected from weather and not subject to saturation with water or other liquids.
    • Damp
    • Wet
    • Dry
    • Moist
17. Examples of damp locations are ______.
   - canopies
   - marquees
   - roofed open porches
   - none of the answers provided
   - all of the answers provided

18. “Premises wiring” is interior and exterior wiring that includes ______ wired together with all their associated hardware, fittings, and wiring devices, both permanently and temporarily installed.
   - power
   - lighting
   - controls
   - signal circuits
   - all of the answers provided

19. Such premise wiring does not include wiring internal to ______.
   - appliances
   - luminaires
   - motors
   - controllers
   - all of the answers provided

20. Power sources include, but are limited to, interconnected or stand-alone batteries, solar photovoltaic systems, other distributed generation systems, or generators.
   - True
   - False

21. Enclosed channels of ______ materials designed expressly for holding wires, cables, or busbars, with additional functions as permitted in this Code, are known as raceways.
   - metallic
   - nonmetallic
   - either of the questions provided
   - neither of the questions provided

22. A raceway is identified within specific article definitions.
   - True
   - False

Quiz 2 – Chapter 1
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 enclosed in a ______ is provided with a means of sealing or locking so that live parts cannot be made accessible without opening the enclosure.
   - case
   - cabinet
   - both of the answers provided
   - neither of the answers provided

3. Can sealable equipment be operable without opening the enclosure?
   - Yes
   - No
   - Equipment may or may not be operable.

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. A nominal value is assigned to a ______ for the purpose of conveniently designating its voltage class.
   - circuit
   - system
   - both of the answers provided
   - neither of the answers provided

6. The actual voltage at which a circuit operates can vary from the nominal to within a range that permits satisfactory operation of equipment.
   - True
   - False
7. An arc-flash warning shall be located so that it can be clearly visible to qualified persons before ______ of the equipment.
   • examination
   • adjustment
   • servicing
   • maintenance
   • all of the answers provided

8. Electrical equipment, such as switchboards, switchgears, panelboards, control panels, meter sockets, and control centers in other than dwelling units must be ______ to warn qualified persons of associated dangers with arc flashes.
   • field marked
   • factory marked
   • both of the answers provided
   • neither of the answers provided

9. An arc-flash hazard warning shall be located so that it is clearly visible to qualified persons before ______ of the equipment.
   • examination
   • adjustment
   • servicing
   • maintenance
   • all of the answers provided

10. The manufacturer’s ______ shall be placed on all electrical equipment.
    • name
    • trademark
    • descriptive marking
    • all of the answers provided

11. Other markings that indicate ______ shall be provided as specified elsewhere in this code.
    • voltage
    • current
    • wattage
    • other ratings
    • any of the answers provided

12. 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

13. Where caution, warning, or danger signs or labels are required by code, the labels shall be permanently affixed to the ______.
    • A. equipment method
    • B. vehicle method
    • C. wiring method
    • D. only A and C
    • E. none of the answers provided

14. Field-applied hazard markings ______ permitted to be hand written.
    • shall be
    • shall not be
    • not listed in code

15. Where caution, warning, or danger signs or labels are required by code, the labels shall be of ______ to withstand the weather.
    • paper
    • laminated plastic
    • sufficient durability
    • engraved aluminum

16. Service equipment, other than in dwelling units, shall have a field marking ______.
    • of the maximum available fault current
    • of the date the fault-current calculation was made
    • that is sufficiently durable to weather
    • all of the answers provided

17. The fault-current calculation that was performed will need to be related to the required short-circuit current ratings of equipment.
    • True
    • False

18. 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
    • removed
    • replaced

19. ______ connection locking provisions shall not be required to remain in place without the lock installed.
    • Device
    • Raceway
    • Protected
    • Cord-and-plug
20. Where equipment is rated 800 A or more and 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 the opposite direction of egress and not be equipped with panic hardware
   • open in the direction of egress and not be equipped with panic hardware
   • open in the opposite direction of egress and be equipped with panic hardware
   • open in the direction of egress and be equipped with panic hardware

21. Outdoor electrical equipment shall be ______.
   • installed in suitable enclosures
   • protected from accidental contact by personnel
   • protected from accidental contact by vehicular traffic
   • protected from accidental contact by spillage or leakage from piping systems
   • any of the answers provided

22. Dedicated equipment space is the space equal to the width and depth of the equipment.
   • True
   • False

23. Dedicated equipment space extending from grade to a height of ______ above the equipment, shall be dedicated to the electrical installation.
   • 1 foot
   • 2 feet
   • 4 feet
   • 6 feet
   • 10 feet

Quiz 3 – Chapter 2
1. Neutral conductors shall not be used for more than ______ unless specified elsewhere in this code.
   • one branch circuit
   • one multiwire branch circuit
   • one set of ungrounded feeder conductors
   • all of the answers provided

2. Multiple circuits shall be identified or grouped to correspond with the ungrounded circuit conductors by ______ in at least one location within the enclosure.
   • wire markers
   • cable ties
   • similar means
   • all of the answers provided

3. The requirement for grouping or identifying shall not apply if the branch-circuit or feeder conductors enter from a ______ unique to the circuit, which makes grouping identification obvious.
   • A. cable
   • B. raceway
   • C. device
   • D. unit
   • E. only A and B

4. The requirement for grouping or identifying shall not apply where branch-circuit conductors pass through a box or conduit body ______.
   • without a loop
   • without a splice
   • without a termination
   • all of the answers provided

5. A multiwire branch-circuit, consisting of an ungrounded and/or grounded circuit conductor, 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

6. The requirement for grouping shall not apply if the conductors are identified at their terminations with ______ corresponding to the appropriate circuit number.
   • colored wire markers
   • numbered wire markers
   • cable ties
   • zip ties
7. Receptacles installed within ______ of the outside edge of the sink must be GFCI protected.
   - 2 feet
   - 4 feet
   - 6 feet
   - 8 feet

8. Receptacles installed within ______ of the outside edge of the bathtub or shower stall must be GFCI protected.
   - 2 feet
   - 4 feet
   - 6 feet
   - 8 feet

9. Receptacles installed in laundry areas must be GFCI protected.
   - True
   - False

10. Receptacles installed within ______ of the outside edge of a rooftop unit must be GFCI protected.
    - True – 6 feet
    - False – 10 feet
    - False – receptacles do not have to be installed within the outside edge of a rooftop unit
    - False – receptacles on rooftops shall not be required to be readily accessible other than from the rooftop

11. Receptacles installed in ______ must be GFCI protected.
    - garages
    - service bays
    - similar areas
    - vehicle exhibitions
    - all of the answers except vehicle exhibitions

12. GFCI protection shall be provided for outlets that supply ______ installed in dwelling unit locations.
    - dishwashers
    - microwaves
    - ovens
    - refrigerators

13. In a dwelling unit, a combination-type arc-fault circuit interrupter shall be installed to provide protection for the entire branch circuit.
    - True
    - False

14. In a dwelling unit, a feeder-type AFCI installed at the origin of the branch-circuit in combination with an outlet branch-circuit type arc-fault circuit interrupter, shall be installed at the ______ outlet box on the branch circuit.
    - first
    - second
    - third
    - forth
    - fifth

15. The first outlet box in the branch circuit shall be ______ to indicate that it is the first outlet of the circuit.
    - removed
    - marked
    - exchanged
    - replaced

16. A supplemental arc protection circuit breaker installed at the origin of the branch circuit with a listed outlet branch-circuit type AFCI installed at the first outlet box shall require ______ wiring from the branch-circuit to the AFCI outlet.
    - continuous
    - extra
    - removal of
    - non-continuous

17. A supplemental arc protection circuit breaker installed at the origin of the branch circuit with a listed outlet branch-circuit type AFCI installed at the first outlet box shall require a 14 AWG conductor to not exceed ______.
    - 20 feet
    - 50 feet
    - 70 feet
    - 90 feet
18. A supplemental arc protection circuit breaker installed at the origin of the branch circuit with a listed outlet branch-circuit type AFCI installed at the first outlet box shall require a 12 AWG conductor to not exceed ______.

- 20 feet
- 50 feet
- 70 feet
- 90 feet

19. A supplemental arc protection circuit breaker installed at the origin of the branch circuit with a listed outlet branch-circuit type AFCI installed at the first outlet box shall require ______.

- the first outlet box on the branch circuit to be marked
- the second outlet box on the branch circuit to be marked
- the third outlet box on the branch circuit to be marked
- any of the outlet boxes to be marked

20. An outlet branch-circuit type arc-fault interrupter installed at the first outlet on the branch circuit with a listed branch-circuit overcurrent protective device shall require ______ wiring from the branch-circuit to the AFCI outlet.

- continuous
- extra
- removal of
- non-continuous

21. An outlet branch-circuit type arc-fault interrupter installed at the first outlet on the branch circuit with a listed branch-circuit overcurrent protective device shall require a 14 AWG conductor to not exceed ______.

- 20 feet
- 50 feet
- 70 feet
- 90 feet

22. An outlet branch-circuit type arc-fault interrupter installed at the first outlet on the branch circuit with a listed branch-circuit overcurrent protective device shall require a 12 AWG conductor to not exceed ______.

- 20 feet
- 50 feet
- 70 feet
- 90 feet

23. An outlet branch-circuit type arc-fault interrupter installed at the first outlet on the branch circuit with a listed branch-circuit overcurrent protective device shall require ______.

- the last outlet box on the branch circuit to be marked
- the first outlet box on the branch circuit to be marked
- the second outlet box on the branch circuit to be marked
- none of the answers provided

24. An outlet branch-circuit type arc-fault interrupter installed at the first outlet on the branch circuit with a listed branch-circuit overcurrent protective device shall be identified as meeting the requirements for a system combination type AFCI.

- True
- False

25. What type of cables shall be permitted when installing an outlet branch-circuit type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit?

- RMC
- EMT
- MC
- Steel armored type AC
- all of the answers provided

26. If encasement is required in concrete for wiring between the branch-circuit and the first outlet, what type of tubing/cable is allowed to be used for the installation?

- Metal conduit
- Nonmetallic conduit
- Type MC Cable
- any of the answers provided

27. Tubing used for encasement in concrete will need to have a minimum depth of ______ when wiring from the branch circuit to the first outlet type AFCI.

- 2 inches
- 4 inches
- 6 inches
- 8 inches
- 10 inches
Quiz 4 – Chapter 2

1. All 15A and 20A, 120V branch circuits supplying dormitory outlets in ______ require AFCI protection.
   - closets
   - hallways
   - living rooms
   - bedrooms
   - all of the answers provided and more

2. With a branch circuit that supplies constant and non-constant loads, the minimum branch circuit conductor ______ shall have an allowable ampacity of not less than the non-constant load.
   - length
   - width
   - size
   - height
   - distance

3. The minimum branch-circuit conductor size shall have an allowable ampacity not less than the minimum load to be served after the application of adjustment or correction factors.
   - True
   - False

4. In Table 310.15(B)(3)(a), ______ will be included in the Number of Conductors column which is the total number of conductors in a raceway or cable.
   - extra conductors
   - spare conductors
   - conductors that are connected to electrical components
   - none of the answers provided

5. 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

6. In dwelling units, at least one receptacle outlet shall be installed in bathrooms within ______ of the outside edge of each basin.
   - 12 inches
   - 9 feet
   - 3 feet
   - 2 yards

7. In no case shall the dwelling unit receptacle outlets be located more than ______ below the top of the basin.
   - 2 inches
   - 6 inches
   - 1 foot
   - 2 feet

8. A feeder that provides constant and/or non-constant 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

9. 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 ______ factors.
   - adjustment
   - correction
   - both of the answers provided
   - neither of the answers provided

10. If a power monitoring system is installed, would it provide continuous information regarding the total general lighting load of a building?
    - Yes
    - No

11. A power monitoring system shall be set with alarm values to alert the building ______ if the lighting load exceeds the values set by the energy code.
    - owner
    - manager
    - both of the answers provided
    - neither of the answers provided
12. Only feeder or branch-circuit conductors specified within this section shall be attached to the feeder and/or branch-circuit mast.
   - True
   - False

13. _____ intended for use with a conduit that serves as a mast for support of feeder or branch-circuit conductors, shall be identified for use with a mast.
   - Braces
   - Guys
   - Hubs
   - Couplings

14. Feeder and/or branch-circuit conductors shall not be attached to a mast between _____ and _____ where the coupling is located above the last point of securement to the building.
   - a weatherhead – a coupling
   - the end of the conduit – a coupling
   - both of the answers provided
   - neither of the answers provided

15. Would an unused raceway that enters a building need to be sealed?
   - Yes
   - No

16. Sealants used for sealing raceways shall be identified for use with the ______.
   - cable insulation
   - conductor insulation
   - bare conductor
   - shield
   - any of the answers provided

17. The type of disconnecting means specified in 225.31 shall be comprised of a ______ or other approved means.
   - circuit breaker
   - molded case switch
   - general-use switch
   - snap switch
   - all of the answers provided

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**Quiz 5 – Chapter 2**

1. Conductors shall be considered to be outside of a building where installed with ______.
   - A. rigid metal conduit – RMC
   - B. polyvinyl chloride – PVC
   - C. intermediate metal conduit – IMC
   - D. answers A and C

2. Conductors shall be considered to be outside of a building where routed _____ an eave but not a wall of a building.
   - around
   - through
   - above
   - under

3. In no case shall the point of attachment be less than ______ above finished grade.
   - 2 feet
   - 4 feet
   - 6 feet
   - 8 feet
   - 10 feet

4. Only power ______ conductors shall be permitted to be attached to a service mast.
   - service-drop
   - overhead service
   - both of the answers provided
   - neither of the answers provided

5. The service mast shall be of adequate strength or be supported by braces or guys to withstand the strain imposed by the service-drop or overhead service conductors.
   - True
   - False

6. Hubs intended for use with a conduit that serves as a service mast shall be identified for use with ______.
   - service-drop equipment
   - service-entrance equipment
   - service-automotive equipment
   - service-mycronic equipment
7. Conductors shall be attached to a service mast if the weatherhead or the end of the conduit has a coupling attached above the conduit support, or if the coupling is above the building.
   - True
   - False

8. A grounding electrode conductor shall be connected between the grounding electrode system and the ______.
   - grounding conductor in each service equipment disconnecting means enclosure
   - equipment grounding conductor installed with the feeder
   - supply-side bonding jumper
   - any of the answers listed

9. Ferrous metal raceways and enclosures for grounding electrode conductors shall be electrically continuous from the point of ______, and shall be securely fastened to the ground clamp or fitting.
   - attachment to cabinets
   - equipment to the grounding electrode
   - both of the answers provided
   - neither of the answers provided

10. Ferrous metal raceways and enclosures shall be ______ to the grounding electrode located at the end of each raceway.
    - bonded
    - extended
    - replaced
    - inspected

11. Can 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

12. A concrete-encased electrode of ______ extending from its location within the concrete to an accessible location above the concrete shall be allowed.
    - conductor type
    - reinforcing rod
    - reinforcing bar
    - any of the answers provided

13. The supply-side bonding jumper shall not be smaller than specified in ______.
    - Table 310.15(B)(3)(a)
    - Table 250.102(C)(1)
    - Table 310.15(B)(16)
    - Table 680.8(A)

14. Where the ungrounded supply conductors are paralleled in ______ or more raceways, the supply-side bonding jumper is sized based on the ungrounded supply conductors in each raceway.
    - one
    - two
    - three
    - four
    - five

15. A ______ and larger covered conductor shall be permanently identified as an equipment grounding conductor at each end, and at every point where the conductor is accessible.
    - 16 AWG
    - 4 AWG
    - 10 AWG
    - 2 AWG

16. A wire-type equipment grounding conductor in a transformer shall serve as ______.
    - an equipment grounding conductor
    - a grounding electrode conductor
    - both of the answers provided
    - neither of the answers provided

17. Wire-type grounding conductors only need to be ______ in size when ungrounded conductors are ______ in size from the minimum size that has sufficient ampacity.
    - increased – decreased
    - decreased – decreased
    - decreased – increased
    - increased – increased

18. A grounding-type receptacle extension originating from a different branch circuit shall be connected to an equipment grounding conductor.
    - True
    - False
19. Where a metal fence is located within 16 feet of the exposed electrical equipment, ________.
   - bonding jumpers shall be installed at each fence corner at maximum intervals of 160 feet along the fence
   - gates shall be bonded to the gate support post, and each gate support post shall be bonded to the grounded electrode system
   - the grounding grid or grounding electrode systems shall be extended to cover the swing of all gates
   - any gate or other opening in the fence shall be bonded across the opening by a buried bonding jumper
   - all of the answers provided

4. An approved manner to close an opening in a cabinet or a cutout box would be to ________.
   - use an approved cap
   - use gray duct tape
   - use black electrical tape
   - use silver duct tape
   - use plumber’s putty

5. A warning label must be applied to an enclosure that has a feed-through conductor. It 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

7. Openings through which conductors enter boxes shall be closed in an approved manner.
   - True
   - False

8. Boxes can be supported from ________.
   - a wood beam
   - a metal beam
   - a uni-strut
   - any structural member

9. Screws used for attaching covers or other equipment to a box must be ________ that ________ the thread gauge 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
   - marked
   - both identified and marked
   - none of the answers provided

11. The maximum weight of a box mounted on a vertical surface to support a lampholder outlet is _______.
   - 30 pounds
   - 40 pounds
   - 50 pounds
   - 65 pounds
   - no limit

12. A ceiling outlet, used only for supporting a luminaire or lamp holder, must be able to support at least _______.
   - 30 pounds
   - 40 pounds
   - 50 pounds
   - 65 pounds
   - no limit

13. A ceiling outlet, used only for supporting a luminaire or lamp holder above the minimum required weight 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
   - manufacture’s literature in the

14. A guard strip must be installed to protect armored cables (AC) in an accessible attic. The strip must be _______.
   - at least as high as the cables
   - greater in height than the cables
   - greater than 3/4 inches in height than the cables
   - greater than 1-1/2 inches in height that 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 is/are met?
   - When the metallic covering is impervious to moisture.
   - When a jacket resistant to moisture is provided under the metal covering.
   - When the insulated conductors under the metallic covering are listed for use in wet locations.
   - All 3 conditions are acceptable for use of Type MC in a wet location.

16. In vertical installations, listed Type MC Cables with ungrounded conductors 250 kcmil and larger, shall be permitted to 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

**Quiz 7 – Chapter 3**

1. Single conductors and multi-rated USE conductors are not restricted to the ampacity limitation of 60°C but are issued with an increase of _______.
   - 25°C
   - 50°C
   - 75°C
   - 100°C
2. 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

3. Type RMC – Rigid Metal Conduit shall be increased to ______ where structural members do not readily permit fastening at the aforementioned smaller interval.
   - 3 feet
   - 5 feet
   - 8 feet
   - 10 feet
   - 12 feet

4. 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

5. 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

6. Type FMC – Flexible Metal Conduit shall be securely fastened in place by an approved means within ______ of each box, cabinet, conduit body, or other conduit termination.
   - 8 inches
   - 1 foot
   - 100 mm
   - 12 feet

7. Type FMC – Flexible Metal Conduit may be supported by listed flexible metal conduit fittings.
   - True
   - False

8. 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

9. Type LFNC – Liquidtight Flexible Nonmetallic Conduit can now be supported using listed LFNC fittings.
   - True
   - False

10. Number of Conductors and Ampacity. The 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

11. A power distribution block may be installed on the line side of the service equipment if ______.
    - it is listed for the purpose
    - it is black in color
    - it is non-metallic
    - all of the listed answers
    - none of the listed answers

12. In a metal wireway, the power distribution block will need to be installed in such a manner that the conductors are ______.
    - visible
    - accessible
    - properly spaced
    - unobstructed
    - color matched

13. Surface metal raceways shall be ______ in accordance with the manufacturer’s installation instructions.
    - supported
    - painted
    - inspected
    - color coordinated
14. Metal cable trays containing only non-power conductors shall be electrically continuous through approved connections or the use of a bonding jumper with a minimum size of ______ AWG.
   - 8
   - 10
   - 12
   - 14
   - No specific size is specified in the code.

15. Article 393 of the NEC covers ______.
   - the installation of illuminates
   - the installation of low-voltage suspended ceiling power distribution systems
   - general requirements for grounding and bonding of electrical installations
   - the electrical conductors and equipment installed within or on mobile and manufactured homes

16. Suspended ceiling power distribution systems shall not be installed ______.
   - in damp or wet locations
   - in concealed locations
   - in hazardous (classified) locations
   - for lighting in general or critical patient care areas
   - all of the answers provided

Quiz 8 – Chapter 4

1. Conductors that enter the box and enclose the switch through a raceway, shall provide a ______ raceway for all contained and grounded conductors.
   - small enough
   - large enough
   - wide enough
   - long enough

2. A neutral conductor isn’t required where a switch can be accessed to add or replace any cables or wires without ______ past completed work.
   - damaging
   - removing
   - both of the answers provided
   - neither of the answers provided

3. A neutral conductor is not required at a switch that does not serve a ______.
   - habitable room
   - bathroom
   - both of the answers provided
   - neither of the answers provided

4. A neutral conductor is not required where multiple switch locations control the same lighting load such that the entire floor area of the room or space is visible from the ______ switch locations.
   - A. single
   - B. multi
   - C. combined
   - D. highest
   - E. answers A and C

5. A neutral conductor is not required at a switch where lighting is controlled by ______.
   - automatic means
   - a panelbox
   - a receptacle
   - disconnect means

6. A neutral conductor isn’t required at a switch where the switch controls a ______.
   - receptacle
   - panelbox
   - disconnect
   - raceway

7. A multipole, general-use snap switch shall not be fed from more than a single circuit unless it is listed and marked as a ______ switch.
   - A. two-circuit
   - B. three-circuit
   - C. four-circuit
   - D. five-circuit
   - E. answers A and B

8. Screws used for the purpose of attaching a snap switch to a box shall be of the type provided with a listed snap switch.
   - True
   - False
9. 125-volt, 15- and 20-ampere, nonlocking-type receptacles that are controlled by an automatic control device, shall be marked with Figure 406.3(E) on the ______ of the receptacle after installation.
   • back
   • front
   • right side
   • left side

10. ______ receptacles shall be installed in a readily accessible location.
    • Arc-fault circuit-interrupter type
    • Ground-fault circuit-interrupter type
    • both of the answers provided
    • neither of the answers provided

11. Screws used to attach a receptacle to a box will be of the type provided with a listed receptacle, or part of listed assemblies or systems.
    • True
    • False

12. Countertop receptacles shall be listed as ______.
    • AFCI
    • GFCI
    • weather-resistant
    • tamper-resistant

13. In seating areas or similar surfaces, receptacles shall not be installed in a face-up position unless they are ______.
    • part of an assembly listed as a furniture power distribution unit
    • part of an assembly listed either as household furnishings or as commercial furnishings
    • listed either as a receptacle assembly for countertop applications or as a GFCI receptacle assembly for countertop applications
    • installed in a listed floor box
    • all of the answers provided

14. 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

15. All nonlocking-type 125-volt, 15- and 20-ampere receptacles located in ______ shall be listed as tamper-resistant.
    • guest rooms
    • guest suites of hotels and motels
    • both of the answers provided
    • neither of the answers provided

16. In all child care facilities, all nonlocking-type 125-volt, 15- and 20-ampere receptacles shall not be listed as tamper-resistant.
    • True
    • False

17. 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

18. All circuits and circuit modifications shall be legibly identified as to their ______.
    • clear purpose
    • evident purpose
    • specific purpose
    • specific use
    • all of the answers provided

19. ______ each circuit to be distinguished from all others will be the identifier.
    • An approved length of detail that allows
    • An approved degree of detail that allows
    • An unapproved degree of detail that allows
    • An unapproved length of detail that allows

20. Luminaires in concealed locations under steel roof decking shall be installed and supported so that there is not less than ______ 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
Quiz 9 – Chapter 4

1. The scope that covers lighting systems operating at 30 volts or less, and their associated components, shall also cover ______.
   - 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

2. A low-voltage lighting system operating at 30 volts shall consist of ______ that is/are identified for the use.
   - an isolating power supply
   - low-voltage luminaires
   - associated equipment
   - all of the answers provided

3. A low-voltage lighting system’s output circuit for a power supply 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

4. Listed Class 2 lighting equipment shall be rated in conformance with ______.
   - Chapter 9
   - Table 11(A)
   - Table 11(B)
   - any of the answers provided

5. The device providing GFCI protection required in this article shall be readily accessible.
   - True
   - False

6. Canopies of ceiling-suspended (paddle) fans and outlet boxes taken together shall provide sufficient space so that ______ can be installed.
   - conductors
   - connecting devices
   - both of the answers provided
   - neither of the answers provided

7. Each outlet box shall be provided with a cover unless covered by means of a ceiling-suspended (paddle) fan canopy.
   - True
   - False

8. Any combustible ceiling finish exposed between the edge of the fan canopy and the outlet box must be covered with ______.
   - noncombustible material
   - combustible material
   - nothing
   - plywood

9. ______ provided for public use shall be protected by a ground-fault circuit interrupter.
   - Tire inflation machines
   - Automotive vacuum machines
   - both of the answers provided
   - neither of the answers provided

10. When would a vending machine need to be connected to a ground-fault circuit-interrupter protected circuit?
    - When powering the vending machine.
    - When providing internet access to the vending machine.
    - When a vending machine is not utilizing a cord and plug connection.
    - Never

11. Nameplates for all stationary generators and portable generators rated more than ______ shall also give the power factory, the subtransient and transient impedances, the insulation system class, and the time rating.
    - 7.5 kW
    - 12 kW
    - 13.5 kW
    - 20 kW
    - 15 kW

12. All 125-volt, single-phase, 15- and 20-ampere receptacle outlets that are part of a 15-kW or smaller portable generator shall ______.
    - have ground-fault circuit-interrupter protection for personnel integral to the generator
    - not be available for use when the 125/250-volt locking-type receptacle is in use
    - both of the answers provided
    - neither of the answers provided
13. Where grounding conductors and supply-side bonding jumpers are installed, a terminal bar for all grounding and bonding conductor connections shall be secured inside the enclosure.

- True
- False

14. Terminals of every cell unit or multi-cell units shall be readily accessible for ______ where required by the equipment design.

- readings
- inspections
- cleaning
- all of the answers provided

15. Every side of transparent battery containers shall be readily accessible for inspection of the internal components.

- True
- False

16. A minimum clearance of ______ shall be required for every battery rack between a cell container and any wall on the side not requiring access for maintenance.

- 1 inch
- 2 inches
- 3 inches
- 4 inches
- 5 inches

17. Provided that the battery shelf has a free air space for not less than ______ of its length, battery stands shall be permitted to contact adjacent walls or structures.

- 75 percent
- 33 percent
- 90 percent
- 15 percent

18. Personnel doors intended for entrance to rooms designated as battery rooms shall ______.

- open in the direction of egress
- be equipped with listed panic hardware
- both of the answers provided
- neither of the answers provided

Quiz 10 – Chapter 5

1. Class 1 Hazardous Locations are those that have explosive ______ present in the air in quantities sufficient to produce explosive or ignitable mixtures.

- gas
- fibers
- dust
- droplets

2. Class 1 Division ______ category is flammable under normal operating conditions.

- 1
- 2
- 3
- 4

3. Class 1 Division ______ category is flammable when there is an accidental breakdown.

- 1
- 2
- 3
- 4

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

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. For equipment installed in a Class II, Division 1 location, the temperature class or operating temperature shall be based on operation of the equipment when blanketed with the ______ amount of dust that can accumulate on the equipment.
   - maximum
   - minimum
   - average
   - 24 hour accumulation
   - monthly

8. Class 1 Temperature. The temperature marking specified in 500.8(C) shall _______ the autoignition temperature of the specific gas or vapor to be encountered.
   - not exceed
   - be equal to
   - be less than

9. “Autoignition” temperature is interchangeable with _______.
   - ignition temperature
   - combustion temperature
   - self-contained burning temperature
   - self-starting combustion temperature

10. Where necessary to employ flexible connections, i.e. at motor terminals, the following shall be permitted:
    - Flexible fittings listed for the location
    - A flexible cord in accordance with the provisions of 501.140 that is terminated with cord connectors listed for the location
    - Both of the answers provided
    - Neither of the answers provided

11. Type TC-ER-HL cable can be used in an industrial location if the following conditions are present:
    - There is restricted public access
    - Only qualified personnel is permitted to service the installation
    - The equipment is limited to 600 V or less
    - The cable is protected from damage by a suitable guard
    - All of the listed requirements plus at least 3 more requirements

12. Type TC-ER-HL cable can be used in an industrial location if the following conditions are present. Which of the following is not a listed requirement?
    - The cable has an overall jacket.
    - The cable has a separate equipment grounding conductor.
    - The cable is terminated with fittings listed for the location.
    - The cable must have a UV protected covering.

13. 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

14. The purpose of sealing optical fiber cable is to _______.
    - exclude moisture and other fluids from the cable insulation
    - stop the movement of air from a listed hazardous space to an unclassified space
    - stop the movement of fluids from a listed hazardous space to an unclassified space
    - stop gas movement from a listed hazardous space to an unclassified space
    - all of the answers listed

15. A cable seal must be installed within _______ of Class 1 Hazardous location enclosures.
    - 12 inches
    - 18 inches
    - 24 inches
    - 36 inches

16. Entry into an enclosure located in a Class 1 Hazardous A cable seal is not required if the switch is _______.
    - 24 volts or less
    - bonded and grounded
    - located in a hermetically sealed chamber
    - remotely operated

17. A cable seal is not required if the switch in the enclosure is immersed in _______.
    - water
    - oil
    - gasoline
    - 10 W-40
    - turpentine
18. A cable seal in a Class 1 Hazardous location is not required if the switch is located in _______.
   - a metal chamber
   - an explosion-proof
   - a factory chamber
   - an identified location
   - an explosion-proof chamber, identified for the location, and factory sealed

19. A nonincendive 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
   - is also known as a double-grounded circuit
   - is a circuit that is not electrically powered

20. A conduit entering a pressurized enclosure from a Class 1 area must have conduit seals, and shall be 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

21. Where two or more explosion-proof enclosures require conduit seals, the seals shall not be located more than _______ from each enclosure.
   - 12 inches
   - 18 inches
   - 24 inches
   - 36 inches

22. Where two or more explosion-proof enclosures 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

23. A conduit seal shall be required in each conduit run leaving a Division 1 location, and must be installed within _______ of the division boundary.
   - 2 feet
   - 5 feet
   - 10 feet
   - 15 feet
   - 20 feet

24. Metal conduit that contains no unions, couplings, boxes, or fittings, and that passes completely through a 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

25. 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

26. 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

27. Generally, receptacles in a Class 1 location shall be part of the premises wiring.
   - True
   - False

28. 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
Quiz 11 – Chapter 5
1. Class II Hazardous locations are those that have explosive ______ present in the air in quantities sufficient to produce explosive or ignitable mixtures.
   - gas
   - fibers
   - dust
   - droplets

2. Class II Division ______ category is flammable under normal operating conditions.
   - 1
   - 2
   - 3
   - 4

3. Class II Division ______ category is flammable when there is an accidental breakdown.
   - 1
   - 2
   - 3
   - 4

4. Which of the following methods is used to properly seal optical fiber cable installed in a Class 2 location?
   - electrical sealing putty
   - If the cable is installed in a horizontal raceway at least 10 ft. long
   - If the cable is installed in a vertical raceway at least 5 ft. long, extending downward from a dust-proof ignition enclosure
   - If the cable is installed in a raceway with (2) or (3) that extends only horizontally and downward from a dust-proof ignition enclosure
   - all of the answers provided

5. For equipment installed in a Class II, Division 1 location, the temperature class or operating temperature shall be based on operation of the equipment when blanketed with the ______ amount of dust that can accumulate on it.
   - maximum
   - minimum
   - average
   - 24 hour
   - Monthly

6. In Class II locations, a flexible cord can be used with portable lighting equipment if the connection between portable lighting equipment and the fixed portion of its supply circuit ______.
   - is attached to the utilization equipment with a cord connector that is listed for the protection of the equipment wiring compartment
   - of the attached plug is in accordance with 502.145
   - both of the answers provided
   - neither of the answers provided

7. A flexible cord can be used in a Class II location on fixed or mobile electrical equipment if it is ______.
   - protected from damage by a suitable guard
   - located only in an industrial establishment
   - in a location where only qualified people can install and service the installation
   - all of the answers provided

8. 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

9. A flexible cord can 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

10. A flexible cord can be used for temporary portable assemblies consisting of receptacles, switches, and other devices that are not considered portable utilization equipment, but that are individually listed for the location.
    - True
    - False
11. Flexible cords used in Class II Hazardous locations shall comply with all the following conditions except _______.
   - it must be of extra-hard usage
   - it must only be yellow in color
   - it must be in Division 1, and have a listed cord connector and seal
   - it must be of a continuous length
   - None of the answers provided

12. Class III Hazardous locations are those that have explosive _______ present in the air in quantities sufficient to produce explosive or ignitable mixtures.
   - gas
   - fibers
   - dust
   - droplets

13. Class III Division _______ category is flammable under normal operating conditions.
   - 1
   - 2
   - 3
   - 4

14. Class III Division _______ category is flammable when originated from a different location.
   - 1
   - 2
   - 3
   - 4

15. Elevator cable can be used in a Class III hazardous location if _______.
   - it is shown under the “use” column in Table 400.4
   - it is terminated with listed dust-tight fittings
   - both of the answers provided
   - neither of the answers provided

16. General-purpose enclosures shall be permitted for intrinsically safe apparatus because a general-purpose enclosure _______.
   - protects against dust
   - protects against light
   - protects against indirect splashing
   - prevents contact with live parts
   - all of the answers provided

Quiz 12 – Chapter 5

1. For Motor Fuel Dispensing Stations located at boatyards and marinas, the electrical wiring and equipment located at or serving these locations 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 dock with closed construction must have _______ between the bottom of the dock and the water.
   - no space
   - 18 inches of space
   - open space
   - open space greater than 18 inches

3. A dock with open construction is built on pilings, floats or similar construction. It has _______ between the bottom of the dock and the water.
   - no space
   - 18 inches of space
   - open space
   - open space greater than 18 inches

4. For both open and closed dock construction, the Class I Hazardous location zone is _______ in height and _______ around the fuel dispenser.
   - 18 inches, 20 feet
   - 20 inches, 18 feet
   - 16 inches, 10 feet
   - 24 inches, 30 feet

5. The classified area on an above-ground motor fuel tank dispenser is _______ horizontally from the dispenser.
   - 10 feet
   - 20 feet
   - 30 feet
   - 40 feet

6. An example of an unclosed 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. A Class I Division 1 zone is ______ horizontally and ______ vertically.
   • 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 and open-front spray booth is ______ of any opening.
   • 3 feet
   • 5 feet
   • 10 feet
   • 15 feet
   • 20 feet

9. The classified area Class 1, Division 2 for an open-top spray booth is ______ vertically above the booth and ______ from other booth openings.
   • 18 inches – 20 feet
   • 3 feet – 20 feet
   • 3 feet – 3 feet
   • 10 feet – 20 feet

10. The classified area Class 1, Division 2 for an enclosed spray booth is an area of ______ from 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. In a classified area Class 1, Division 2 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 feet
    • 5 feet
    • 10 feet
    • 20 feet

Quiz 13 – Chapter 5
1. Patient Care Space is a ______.
   • space in which failure of equipment or a system is not likely to have a physical impact on patients or caregivers
   • space in which failure of equipment or a system is not likely to cause injury to patients or caregivers but may cause patient discomfort
   • space within a health care facility wherein patients are intended to be examined or treated
   • space in which failure of equipment or a system is likely to cause major injury or death to patients or caregivers
   • space in which failure of equipment or a system is likely to cause minor injury to patients or caregivers

2. Basic Care Space is a ______.
   • space in which failure of equipment or a system is not likely to have a physical impact on patients or caregivers
   • space in which failure of equipment or a system is not likely to cause injury to patients or caregivers but may cause patient discomfort
   • space within a health care facility wherein patients are intended to be examined or treated
   • space in which failure of equipment or a system is likely to cause major injury or death to patients or caregivers
   • space in which failure of equipment or a system is likely to cause minor injury to patients or caregivers

3. General Care Space is a ______.
   • space in which failure of equipment or a system is not likely to have a physical impact on patients or caregivers
   • space in which failure of equipment or a system is not likely to cause injury to patients or caregivers but may cause patient discomfort
   • space within a health care facility wherein patients are intended to be examined or treated
   • space in which failure of equipment or a system is likely to cause major injury or death to patients or caregivers
   • space in which failure of equipment or a system is likely to cause minor injury to patients or caregivers
4. Critical Care Space is a ______.
   • space in which failure of equipment or a system is not likely to have a physical impact on patients or caregivers
   • space in which failure of equipment or a system is not likely to cause injury to patients or caregivers but may cause patient discomfort
   • space within a health care facility wherein patients are intended to be examined or treated
   • space in which failure of equipment or a system is likely to cause major injury or death to patients or caregivers
   • space in which failure of equipment or a system is likely to cause minor injury to patients or caregivers

5. Support Space is a ______.
   • space in which failure of equipment or a system is not likely to have a physical impact on patients or caregivers
   • space in which failure of equipment or a system is not likely to cause injury to patients or caregivers but may cause patient discomfort
   • space within a health care facility wherein patients are intended to be examined or treated
   • space in which failure of equipment or a system is likely to cause major injury or death to patients or caregivers
   • space in which failure of equipment or a system is likely to cause minor injury to patients or caregivers

6. An isolated ground receptacle shall not be installed within a patient care vicinity.
   • True
   • False

7. An isolated ground receptacle can easily be identified since ______.
   • the receptacle is orange in color
   • the receptacle is red in color
   • the receptacle has a triangle symbol on its face
   • the receptacle has a rectangle symbol on its face
   • the receptacle has a circular symbol on its face

8. There need to be at least ______ branch circuits that supply the receptacles for a patient bed location.
   • two
   • three
   • four
   • five

9. Each receptacle in a patient care vicinity shall be identified ______.
   • with a label on the receptacle showing panel board number
   • with a label on the receptacle showing branch circuit number
   • with a distinctive color
   • all of the answers provided
   • none of the answers provided

10. The minimum number of receptacles at a patient bed location is ______.
    • two
    • four
    • six
    • eight
    • ten

11. A hospital grade receptacle is identified by ______.
    • the green dot on the receptacle
    • its red color
    • the words “Hospital grade” stamped in the metallic ground
    • all of the answers provided
    • only two of the answers provided

12. The required essential electrical system shall have the following branches:
    • emergency and lighting branches
    • equipment, life safety, and critical branches
    • emergency, critical, and communication branches
    • life threatening and emergency power branches
    • intensive care and emergency room branches
13. Non-locking 125 V receptacles that are supplied by power from the essential electrical system shall ______.
   • have an illuminated face or an indicator light to show that there is power to the receptacle
   • have a distinctive color
   • have a marking or identification that it is off hospital grade
   • all of the answers provided
   • none of the answers provided

Quiz 14 – Chapter 5
1. The continuity of the equipment grounding conductor system used to reduce electrical shock hazards at carnivals, circuses, fairs and similar events shall be verified each time that the portable electrical equipment is connected.
   • True
   • False

2. An equipotential plane is an area where wire is embedded in or placed under concrete, and is bonded to all metal structures that may become energized. It is connected to the electrical grounding system in order to ______ voltage potentials within the plane and between the grounded equipment and the earth.
   • minimize
   • maximize
   • equalize
   • eliminate
   • multiply

3. Where an equipment grounding conductor is installed underground in an agricultural building, the grounding conductor shall be ______.
   • insulated
   • covered
   • both of the answers provided
   • neither of the answers provided

4. An enclosed assembly, that can include equipment such as receptacles, circuit breakers, fused switches, fuses, a watt-hour meter(s), panel boards, and monitoring means approved for marine use, is known as ______.
   • a marine power outlet
   • a damp/wet power outlet
   • a boating/water craft outlet
   • an offshore power device

5. The insulated equipment grounding conductor shall be not smaller than ______.
   • 8 AWG
   • 10 AWG
   • 12 AWG
   • 14 AWG
   • 16 AWG

6. In a temporary installation, cable assemblies, flexible cords, and cables installed as branch circuits or feeders, shall not be installed in the floor or in the ground.
   • True
   • False

7. On a construction site that has a temporary panel box, a flexible cord can be attached to the panel box if ______.
   • it is not smaller than 14 AWG
   • it is rated for extra hard use
   • it is a single cord
   • it is secured to the panel box with a “Romex” connector
   • it is secured to the panel box with a fitting designed for securing a flexible cord

Quiz 15 – Chapter 6
1. Fixed, mobile, or portable electric signs, section signs, outline lighting, and retrofit kits, regardless of voltage, shall be ______ unless otherwise approved by special permission.
   • listed
   • provided with installation instructions
   • listed and installed in conformance with that listing
   • all of the answers provided

2. Signs, outline lighting, skeleton tubing systems, and retrofit kits shall be ______ as required.
   • marked to indicate the field wiring
   • marked with installation instructions
   • both of the answers provided
   • neither of the answers provided

3. Portable and cord-connected signs are required to be marked with installation instructions.
   • True
   • False
4. A disconnect for a 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.
   - Inside the sign enclosure.

5. A disconnect shall not be required for ______ passing through the sign where enclosed in a listed raceway.
   - a branch
   - a feeder circuit
   - both of the answers provided
   - neither of the answers provided

6. Metal equipment of ______ must be connected to the circuit equipment grounding conductor.
   - signs
   - outline lighting systems
   - skeleton tubing
   - all of the answers provided

7. ______ shall be of the self-contained type or be enclosed by placement in a listed sign body or listed separate enclosure.
   - Ballasts
   - Transformers
   - Electronic power supplies
   - Class 2 power sources
   - all of the answers provided

8. An elevator disconnecting means shall be an enclosed externally operable fused motor circuit switch or circuit breaker that is lockable in the open position.
   - True
   - False

9. The provisions for locking shall remain in place ______ the lock installed for an elevator disconnecting means.
   - A. with
   - B. without
   - C. every other day with
   - D. only A and B

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. Separately derived information technology equipment is an example of ______.
    - a computer
    - a laptop
    - a projector
    - a data center
    - none of the answers provided

12. Non-separately derived information technology equipment is an example of ______.
    - A. a computer
    - B. a laptop
    - C. a projector
    - D. a data center
    - E. only A, B, and C

13. A modular data center (MDC) consists of ______.
    - an outer enclosure housing multiple racks of information technology equipment
    - electrical service equipment
    - electrical distribution equipment
    - HVAC systems
    - all of the answers provided

14. A receptacle shall be provided in each modular data center so that an extension cord is no routed through the doorway.
    - True
    - False

15. Modular data centers shall be provided with emergency lighting where an area is used for ______.
    - exit access
    - exit discharge
    - both of the answers provided
    - neither of the answers provided
Quiz 16 – Chapter 6
1. 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

2. Service-drop conductors, overhead service conductors and open overhead wiring for swimming pool and similar installations shall comply with the ______ clearances given in Table 680.8(A) and illustrated in Figure 680.8(A).
   • minimum
   • maximum
   • average

3. 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

4. Each means shall be readily accessible and within sight of its equipment, and shall be located at least ______ horizontally from the inside walls of a fountain.
   • 1 foot
   • 2 feet
   • 3 feet
   • 4 feet
   • 5 feet

5. The fountain’s horizontal distance is to be measured from the water’s edge along the ______ path required to reach the disconnect.
   • longest
   • shortest
   • highest
   • none of the answers provided

6. GFCI protection is required for outlets supplying pool pump motors connected to ______, 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

7. Low voltage luminaires that aren’t grounded, and don’t exceed the low voltage contact, shall be allowed to be located less than ______ from the inside walls of the pool.
   • 1 foot
   • 2 feet
   • 3 feet
   • 4 feet
   • 5 feet

8. Pool water must have an electrical connection to one of the bonded parts or a corrosion-resistant surface that exposes not less than ______ of surface area to the pool water at all times.
   • 12 inches
   • 9 inches
   • 3 inches
   • 20 inches

9. Equipotential bonding of perimeter surfaces shall not be provided for spas and hot tubs where ______.
   • the spa or hot tub is listed as a self-contained spa for aboveground use
   • the spa or hot tub is not identified as suitable only for indoor use
   • the installation is located on or above grade
   • all of the answers provided

10. ______ supplying the sign shall have ground-fault circuit-interrupter protection for personnel.
    • Branch circuits
    • Feeders
    • Both of the answers provided
    • Neither of the answers provided

11. Both metal piping systems and grounded metal parts in contact with the circulating water, shall be bonded together using a solid bonding jumper that is ______ not smaller than 8 AWG.
    • insulate
    • covered
    • bare
    • all of the answers provided
12. Where a building consists of a utility service and a PV system together, a permanent label will be required with the following wording:
- WARNING: PHOTOVOLTAIC SYSTEM
- DANGER: PHOTOVOLTAIC SYSTEM EQUIPPED WITH A DISCONNECT
- PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN
- EQUIPPED WITH A RAPID SHUTDOWN

13. The photovoltaic label shall be displayed ______.
- reflectively
- with all letters capitalized and having a minimum height of 3/8 inch
- with white letters on a red background
- all of the answers provided

14. Do wind turbines need to have a readily accessible manual shutdown button or switch?
- Yes
- No

15. Turbines with a swept area of less than ______ shall not be required to have a manual shutdown button or switch.
- 235 feet
- 743 feet
- 538 feet
- 122 feet

16. The shutdown procedure for a wind turbine shall be ______ at the location of a shutdown means and at the location of the turbine controller or disconnect.
- defined
- permanently posted
- both of the answers provided
- neither of the answers provided

17. A Surge Protection Device (SPD) is required on ______ for switchboards and panelboards.
- emergency systems less than 15 KW
- emergency systems greater than 15 KW
- 208/240 volt emergency systems
- any emergency system

2. A generator is required to have only one (1) disconnecting means if the following condition(s) is/are met.
- If a generator is located outdoors
- If there is a readily accessible disconnect
- If the disconnect is within sight of the building
- If all ungrounded conductors pass through the building
- All of the answers provided

3. Individual unit equipment for emergency illumination shall consist of ______.
- a rechargeable battery
- a battery charging means
- provisions for one or more lamps mounted on the equipment
- a relay device arranged to energize the lamps automatically upon failure of the supply to the unit equipment
- all of the answers provided

4. An emergency lighting system shall be installed in the disconnect area when the disconnects are installed ______.
- indoors
- outdoors
- either indoors or outdoors
- only in a room without windows

5. Multi-wire branch circuits are allowed for emergency lighting and power circuits if ______.
- the total load is 20 amps or less
- if the circuit is 120 v
- found on a residential installation
- never allowed

6. Ground Fault Protection of Equipment (GFPE) ______ required with automatic disconnecting means on emergency power systems. If this is the case, then there ______ be a method of indication.
- is – must
- is not – must
- is – is not required to
- is not – is required to
7. Selective coordination is designed by a licensed professional engineer or other qualified person engaged in ______ of electrical systems.
   - design
   - installation
   - maintenance
   - all of the answers provided

8. The selection shall be documented and made available to those authorized to ______ the system.
   - design
   - install
   - maintain
   - all of the answers provided

9. An outdoor generator set is equipped with a readily accessible disconnecting means in accordance with 445.18. The disconnecting means is located within sight of the building. How many additional disconnecting means are required where ungrounded conductors serve or pass through the building or structure?
   - Zero
   - One
   - Two
   - Three

10. Ground-fault indication of the legally required standby source shall be provided in accordance with 701.6(D), if ground-fault protection of equipment with automatic disconnecting means is not provided.
    - True
    - False

11. Legally required stand systems require selective coordination. Selective coordination is designed by a licensed professional engineer or other qualified person engaged in ______ of electrical systems.
    - design
    - installation
    - maintenance
    - operating the system
    - all of the list answers

12. A power inlet is used for a temporary connection to a portable generator, and a warning sign shall be placed near the inlet to indicate the type of derived system and its capabilities. Based on the wiring of the transfer equipment, which of the following is the correct warning label?
    - 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
    - All of the answers provided
    - None of the answers provided

13. How many additional disconnecting means are required for the ungrounded conductors of a generator 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

14. A portable generator less than 15kW is installed using a cord-and plug-type connection. How many additional disconnecting means are required where ungrounded conductors serve or pass through the building or structure?
    - Zero
    - One
    - Two
    - Three

15. In a power-limited circuit raceway, the following are permitted:
    - a water pipe
    - a steam pipe
    - a natural gas line
    - a PEX water line
    - none of the answers provided

16. Class 2 and Class 3 cables installed in corrosive, damp, or wet locations should have cable covering ratings for these locations.
    - True
    - False
Quiz 18 – Chapter 7 & 8

1. Article 728 of the NEC covers ______.
   - the installation of fire-resistive cables, fire-resistant conductors, and other system components
   - the survivability of critical circuits
   - the continuum of operations during a specified time under fire conditions
   - all of the answers provided

2. Fire-resistive cables, conductors, and components shall ______.
   - be designed for use in a specific fire-rated system
   - not be interchangeable between systems
   - both of the answers provided
   - neither of the answers provided

3. An energy management system consists of ______.
   - monitors
   - controllers
   - timers
   - communications equipment
   - all of the answers provided

4. What is the number of PLFA circuits that can be run in a raceway or cable routing assembly?
   - Zero
   - One
   - Two
   - Three
   - Two or more

5. An innerduct is ______.
   - a nonmetallic raceway placed within a larger raceway
   - used in a double plenum for air conditioning systems
   - a metallic outer tube with metallic inner tubes for optical fiber
   - none of the answers provided

6. 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
   - either factory or field – one or more
   - none of the answers provided

7. Optical fiber cables located in plenums shall ______ when nonmetallic cable ties and other nonmetallic cables accessories are used for securing and supporting.
   - be listed as having low smoke properties
   - be listed as having low heat release properties
   - be listed as having both low smoke and low heat release properties
   - be black in color
   - lock into position

8. 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

9. 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
   - both answers are correct
   - neither answer is correct

10. When installing optical fiber cable in ENT, the electrician must adhere to the following code articles:
    - 362.24 – bending radius
    - 362.26 – max. bends – 360
    - 362.28 – trim to remove burs on ends
    - 362.30 – support every 3 feet
    - All of these code articles

11. An electrical circuit protective system is used ______.
    - to protect the wiring system if power is interrupted by a fire
    - to prevent an arch flash
    - to minimize toxic gas from a fire
    - to automatically signal the fire department
12. An innerduct is ______.
   - a nonmetallic raceway placed within a larger raceway
   - used in a double plenum for air conditioning systems
   - a metallic outer tube with metallic inner tubes for optical fiber
   - none of the answers provided

13. Communication cables located in plenums shall ______ when nonmetallic cable ties and other nonmetallic cables accessories are used for securing and supporting.
   - be listed as having low smoke properties
   - be listed as having low heat release properties
   - be listed as having both low smoke and low heat release properties
   - be black in color
   - lock into position

14. Rigid metal conduit containing communications entrance wire or cable shall be connected by a ______ to a grounding electrode in accordance with 800.100(B).
   - bonding conductor
   - grounding electrode conductor
   - both answers are correct
   - neither answer is correct

15. When installing communication wires and cable in ENT, the electrician must adhere to the following code articles:
   - 362.24 – bending radius
   - 362.26 – max. bends - 360
   - 362.28 – trim to remove burs on ends
   - 362.30 – support every 3 feet
   - All of these code articles

16. The maximum spacing between horizontal supports for communication cables is ______.
   - 4 feet
   - 5 feet
   - 10 feet
   - 12 feet
   - 20 feet

17. The maximum spacing between vertical supports for communication cables is ______.
   - 4 feet
   - 5 feet
   - 10 feet
   - 12 feet
   - 20 feet

18. What shall be listed as suitable for limiting surges on the cable that connects the antenna to the receiver/transmitter electronics?
   - A community television antenna
   - An antenna lead-in protector
   - An antenna lead-in conductor
   - An indoor lead-in

19. The antenna lead-in protector shall be grounded using a ______.
   - bonding conductor
   - grounding electrode conductor
   - both of the answers provided
   - neither of the answers provided

20. Where bonding or grounding is required, devices used to connect ______ to a grounding electrode conductor shall be part of listed equipment.
   - a shield
   - a sheath
   - non-current-carrying metallic members of a cable
   - metal parts of antennas
   - all of the answers provided

21. When installing antenna cables for television and radio, nonmetallic cable and cable accessories shall be used. These cable ties shall ______.
   - be listed as having low smoke properties
   - be listed as having low heat release properties
   - be listed as having both low smoke and low heat release properties
   - be black in color
   - lock into position