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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.

- **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.
- **WA. Electricians** – WA. L&I requires all online test questions and answers to be randomized. Be sure to answer all of the test questions on your printed copy.

Quiz 1 WA Electricians: Answer all questions - 50% of the following will appear in random order with random answers -as required by WA LNI

1. Before installing the service and equipment, the _____ must contact the utility program regarding the service entrance requirements for meter equipment and location.
 - owner
 - owner's agent
 - electrical contractor
 - any of the answers provided
2. The total thickness of sheetrock required on both sides of a 2-hour firewall is _____.
 - 1 inch
 - 1-1/4 inches
3. Who sets the standards for the height of the center of the service meter?
 - 2 inches
 - 2-1/2 inches
 - The serving utility
 - The Department
 - The WACs and RCWs
 - The Federal Power Administration
4. All overhead drops for service, feeder, or branch circuits exceeding #1 AWG aluminum or #3 AWG copper must be rigid steel galvanized conduit no smaller than _____.
 - 1 inch
 - 1-1/4 inches
 - 2 inches

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- 2-1/2 inches
5. All overhead drops for service, feeder or branch circuits not exceeding #1 AWG aluminum or #3 AWG copper must be rigid steel galvanized conduit no smaller than _____.
 - 1 inch
 - 1-1/4 inches
 - 2 inches
 - 2-1/2 inches
 6. A residential patio cover for an overhead conductor span must have at least _____ of clearance.
 - 12 inches
 - 24 inches
 - 36 inches
 - 48 inches
 7. _____, non-hardening mastic must be placed between lead-type flashings and the conduit.
 - Aluminum
 - Plastic
 - Copper
 - Steel
 8. Masts must be braced, secured, and supported in such a manner that no pressure from the attached conductors will be exerted on roof flashings, meter bases, or other enclosures. The minimum size wire for supporting is _____.
 - No. 6 copper weld
 - aircraft cable
 - either of the answers provided
 - neither of the answers provided
 9. The minimum bracing support tubing must be _____.
 - 1/2 inch rigid galvanized metal conduit
 - 3/4 inch rigid galvanized metal conduit
 - 1 inch rigid galvanized metal conduit
 10. What is the minimum angle between the mast and the braces or supporting wires?
 - 30 degrees
 - 45 degrees
 - 60 degrees
 11. The minimum size U-bolts that can be used to secure the electrical mast are _____.
 - 1/4 inch
 - 5/16 inch
 - 3/8 inch
 - 1/2 inch
 12. Use of couplings for a mast is permitted only _____ the point where the mast is braced, secured, or supported.
 - above
 - at
 - below
 13. Except as otherwise required by the serving utility, service mast supports must be installed if the service drop attaches to the mast more than _____ above the roof line.
 - 12 inches
 - 24 inches
 - 32 inches
 - 36 inches
 14. Except as otherwise required by the serving utility, service mast support must be installed if the service drop is greater than _____ in length away from the pole or support.
 - 50 feet
 - 100 feet
 - 200 feet
 - 250 feet
 15. An intermediate support mast must be installed in an approved manner with methods _____ those required for service masts.
 - identical to
 - equal to
 - either of the answers provided
 - neither of the answers provided
 16. Conductors must extend at least _____ from all mastheads to permit connection to the overhead wiring.
 - 12 inches
 - 18 inches
 - 24 inches
 - 36 inches

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17. In multi-family buildings with more than one service disconnect at different locations, no more than _____ service disconnects shall be supplied from a single transformer.
- 2
 - 4
 - 6
 - 8
 - 10
18. In multi-family buildings with more than one service disconnect at different locations, a permanent identification plate must be placed at each service disconnect location, and must identify _____.
- all other service disconnect locations in or on the building
 - the area or units served by each disconnect
 - the total number of service disconnecting means on the building
 - the area or units served
 - all of the answers provided
19. A permanent identification plate _____ each feeder disconnecting means identifying the area.
- must be placed at
 - is not required to be placed at
 - must be placed only after installation at
 - is not adopted in the state of Washington
20. If the service conductors have a lesser ampacity than the overcurrent protection or the equipment rated that they terminate in or on, an identification plate showing the ampacity of the conductors _____ on the service equipment.
- must be installed
 - is not required to be installed
 - is required to be installed only after installation
 - is not adopted in the state of Washington

Quiz 2: WA Electricians: Answer all questions - 50% of the following will appear in random order with random answers -as required by WA LNI

1. The installation of service conductors not exceeding 600 volts nominal within a building or structure is limited to the use of the following materials except _____.
- galvanized or aluminum rigid metal conduit
 - galvanized intermediate metal conduit
 - EMT
 - auxiliary gutters
 - minimum schedule 40 rigid polyvinyl chloride conduit
2. Electrical metallic tubing (EMT) must not be installed as the wiring method for service entrance conductors inside a _____.
- car
 - train
 - building
 - boat
3. The grounded service conductor is permitted to be identified with a _____, or with one or more yellow stripes.
- yellow jacket
 - blue jacket
 - green jacket
 - black jacket
4. Service equipment, subpanels and similar electrical equipment are not allowed in _____.
- clothes closets
 - toilet rooms
 - shower rooms
 - all of the answers provided
5. Which is not required of indoor service equipment and subpanel equipment?
- To be located with the center of the panel between 4 feet 6 inches and 5 feet 6 inches from the datum plane of the floor.
 - To have adequate working space.
 - To be adequately illuminated.
6. A service disconnecting means located outside a building must be within _____ and in sight of the building served.
- 10 feet
 - 15 feet
 - 20 feet
 - 30 feet
 - 50 feet
7. The building disconnecting means may supply _____ building(s).
- one
 - two
 - three
 - four

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8. The service disconnecting means shall have an identification plate with _____ high letters.
 - 1/4 inch
 - 1/2 inch
 - 3/4 inch
 - 5/8 inch
9. When the service disconnecting means is installed inside the building or structure, it must be located so that the service raceway extends no more than _____ into the building/structure.
 - 10 feet
 - 15 feet
 - 20 feet
 - 30 feet
 - 50 feet
10. The installation of service conductors exceeding 600 volts nominal within a building or structure, must be limited to the use of the following materials except _____.
 - galvanized rigid metal conduit
 - galvanized intermediate metal conduit
 - EMT
 - schedule 80 polyvinyl chloride conduit
 - metal-clad cable that is exposed for its entire length
11. Which of the following is not an acceptable method for the inspector to use to verify that the electrode encased in concrete has been correctly installed?
 - The inspector can verify the continuity of the electrode conductor with a minimum 20 foot linear span between testing points.
 - The inspection can accept the job site inspector's verbal word that the electrode has been correctly installed.
 - The concrete encased electrode is accessible for visual inspection.
 - All of the answers provided
12. The minimum distance between rods when installed in cases of services feeding adjacent but structurally separate buildings is _____.
 - 2 feet
 - 6 feet
 - 10 feet
 - 12 feet
13. _____ used in nonmetallic plumbing systems are not required to be bonded to the electrical system unless required by an electrical equipment manufacturer's instructions.
 - Metallic stubs
 - Valves
 - either of the answers provided
 - neither of the answers provided
14. _____ are not required to be bonded together if the inspector can determine that the lines are mechanically and electrically joined by one or more metallic mixing valves.
 - Hot water plumbing lines
 - Cold water plumbing lines
 - both of the answers provided
 - neither of the answers provided
15. NEC power limited, Class 2, and Class 3 cables must be secured in compliance with which NEC reference article?
 - NEC 334.30
 - NEC 314.17
 - NEC 334.34
16. NEC power limited, Class 2, and Class 3 cables must be secured to boxes in compliance with which NEC reference article?
 - NEC 334.30
 - NEC 314.17
 - NEC 334.34
17. Telecommunication cables must be secured at intervals not exceeding _____ and in a manner that will not cause damage to the cables.
 - 3 feet
 - 5 feet
 - 8 feet
 - 12 feet
18. Cables are considered adequately supported when run through _____ in building structures.
 - holes
 - walls
 - raceways
 - supporting beams

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19. Clamps or fittings are not required where telecommunications cables enter _____.
 - rooms
 - boxes
 - buildings
 - houses
20. Optical fiber cables located in suspended ceilings must be secured in a manner that will not cause damage to the cables, and at intervals not exceeding _____.
 - 3 feet
 - 5 feet
 - 8 feet
 - 10 feet
 - 12 feet
- Quiz 3: WA Electricians: Answer all questions - 50% of the following will appear in random order with random answers -as required by WA LNI**
1. The maximum sized cable that can be supported by wires in a suspended ceiling is _____.
 - 1/4 inch trade size
 - 1/2 inch trade size
 - 3/4 inch trade size
 - 1 inch trade size
2. The maximum number of cables that can be supported by a suspended ceiling wire is _____.
 - 1
 - 2
 - 3
 - 4
 - 5
3. The suspended ceiling support for the two-cable limitation does not apply to _____.
 - 120 volt, No.14, ground cable
 - 12 gauge Romex
 - Telecommunications cables, Class 2 and Class 3 cables
4. The minimum sized support wire in a suspended ceiling is _____.
 - #10 AWG
 - #12 AWG
 - #14 AWG
 - #16 AWG
5. Telecommunications cable may pass through ceiling area with _____ mounted on or supported inside the ceiling area.
 - no terminations
 - no devices
 - either of the answers provided
 - neither of the answers provided
6. Which of the following is not a requirement for cables placed in a raceway?
 - That the cable is appropriate for the environment
 - That the percentage fill does not exceed that allowed in NEC Chapter 9, Table 1
 - That the cables are multi-stranded
7. Prior to any electrical inspection, the installer must provide the inspector with documentation substantiating the _____ for nonmetallic-sheathed cables.
 - type of building materials
 - finish material rating(s)
 - both of the answers provided
 - neither of the answers provided
8. In multifamily dwellings, _____ cable(s) shall be used in construction for Type III, IV, and V structures.
 - Type NM
 - Type NMC
 - Type NMS
 - all of the answers provided
9. All cable(s) must be concealed within walls, floors, or ceilings that provide a thermal barrier of material with at least a _____ finish rating.
 - 5-minute
 - 10-minute
 - 15-minute
 - 20-minute
10. EMT (electrical metallic tubing) may be installed in direct contact with the earth or in concrete on or below grade.
 - True
 - False

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11. Where electrical metallic tubing is _____ in wet locations, an equipment grounding conductor must be installed within the raceway and size.
 - removed
 - replaced
 - installed
 - repaired
 12. Knob-and-tube wiring in an attic has been inspected and found to be in good condition; is it legal to use loose insulation here?
 - No, remove the old knob-and-tube wiring and upgrade to current NEC required wires.
 - No, loose insulation is a fire hazard.
 - Yes, since the wiring does not appear to be damaged
 13. Foam insulation may be used with knob-and-tube wiring if _____.
 - the wiring has been inspected and authorized
 - the wiring has been modified
 - it is illegal to use foam insulation with knob-and-tube
 14. The following overcurrent device(s) may be used with knob-and-tube wiring:
 - A. a penny (1 cent)
 - B. a circuit breaker
 - C. a Type S fuse
 - D. an inverse current fuse
 - E. answers B and C
 15. All luminaires within an enclosed shower area or within _____ of the waterline of a bathtub must be enclosed.
 - 4 feet
 - 5 feet
 - 6 feet
 - 7 feet
 16. Luminaires in shower/bathtub areas, having exposed metal parts that are grounded, must be protected by a/n _____.
 - circuit breaker
 - fuse
 - inverse current fuse
 - ground fault circuit interrupter
 - no special additional protection is necessary
 17. A flexible cord connected to a source junction box must utilize the approved _____.
 - A. cable clamp
 - B. cable outlet
 - C. cable connector
 - D. answers A and B
 - E. answers A and C
 18. The length of the cord for a suspended pendant drop from a permanently installed junction box to a suitable tension take-up device must not exceed _____.
 - 4 feet
 - 6 feet
 - 8 feet
 - 10 feet
 - 12 feet
 19. Strain relief(s) on the flexible cord are located _____.
 - on the control end
 - on the equipment end
 - on both ends
 - none of the answers provided
 20. The flexible cord must be a minimum _____ copper.
 - #16 AWG
 - #14 AWG
 - #12 AWG
 - #10 AWG
 21. Vertical flexible cord supplying electric discharge luminaires must be secured to the luminaire supports.
 - True
 - False
- Quiz 4: WA Electricians: Answer all questions - 50% of the following will appear in random order with random answers -as required by WA LNI**
1. Water heaters with a rated circuit load in excess of 3,500 watts at 208 or 240 volts must be provided with branch circuit conductors not smaller than _____.
 - #16 AWG
 - #14 AWG
 - #12 AWG
 - #10 AWG
 - #8 AWG

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2. All motors must be manufactured according to _____ standards.
 - NEMA
 - ASHREA
 - OSHA
 - NEC
 - NAACP
3. The minimum distance that oil-filled transformers installed outdoors may be from any portion of a building with a combustible surface is _____.
 - 2 feet
 - 4 feet
 - 6 feet
 - 8 feet
 - 10 feet
4. The minimum distance that oil-filled transformers installed outdoors may be from any portion of a building with a non-combustible surface is _____.
 - 2 feet
 - 4 feet
 - 6 feet
 - 8 feet
 - 12 feet
5. Where a transformer is to be installed next to an uninhabitable structure, the transformer may be no closer than _____ from the structure.
 - 2 feet
 - 4 feet
 - 6 feet
 - 8 feet
 - 10 feet
6. The transformer must be outside a line _____.
 - extending horizontally from the side of the building/structure
 - extending vertically from the ends of the eaves or rooflines
 - eyeballed and approximated
7. A transformer may be installed no closer than _____ from a building's doors, windows, stairways, or other openings.
 - 2 feet
 - 4 feet
 - 6 feet
 - 8 feet
 - 10 feet
8. Oil leaking from the transformer must flow _____ the building/structure.
 - away from
 - towards
 - into a puddle next to
9. The number of posts required to adequately guard a transformer is:
 - 1
 - 2
 - 3
 - 4
 - no number specified
10. Enclosures for total underground oil-filled transformers must not be located within _____ of doorways, operable windows, stairways or fire escapes.
 - 4 feet
 - 6 feet
 - 8 feet
 - 10 feet
 - 12 feet
11. S.T.E.P. means _____.
 - Septic Tank Effluent Pump
 - Standard Technical Electrical Pump
 - State Tested Efficiency Pump
12. The pumping chamber must be adequately vented with a minimum _____ vent.
 - 1 inch
 - 2 inch
 - 3 inch
 - 4 inch
13. Equipment that in normal operation may cause an arc, _____ installed in any pumping chamber.
 - is allowed to be
 - is not allowed to be
 - is sometimes allowed to be
14. Float switches installed in a pumping chamber _____ hermetically sealed.
 - must be
 - are not required to be
 - are, when inspection is made, required to be
 - none of the answers provided

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15. Junction boxes, conduits and fittings installed in a septic atmosphere _____ of a non-corrosive type.
- must be
 - are not required to be
 - may be
16. Wire splices in junction boxes installed in pumping chambers _____ suitable for wet locations.
- must be
 - are not required to be
 - are, when inspection is made, required to be
 - none of the answers provided
17. Residential wastewater loading characteristics in a nonresidential installation of less than 3,500 gallons of wastewater per day may be certified by _____.
- the building department
 - the Department of Ecology
 - the state wastewater treatment director
 - the Department of Natural Resources
 - a professional wastewater system design engineer
18. Residential wastewater loading characteristics in a nonresidential installation of more than 3,500 gallons of wastewater per day may be certified by _____.
- a professional wastewater system design engineer
 - the local permitting agency
 - the plumbing contractor
 - the Department of Ecology
 - the Wastewater Treatment Association
19. Any residential or nonresidential system that has building or structure floor drains being discharged into the system is classified as _____.
- Class I, Division I
 - Class I, Division 2
 - Class 2, Division I
 - Class 2, Division 2
20. Drains from any commercially made _____ are not considered floor drains.
- shower
 - basins
 - sinks
 - toilets
 - all of the answers provided

Quiz 5: WA Electricians: Answer all questions - 50% of the following will appear in random order with random answers -as required by WA LNI

1. Which persons are not permitted to be engaged in doing electrical trade field work?
- Master journey level electricians
 - Electrical administrators
 - Journey level electricians
 - Master specialty electricians
 - All of the answers provided
2. How often does an apprentice need to renew his/her training certificate?
- One time only
 - Every 6 months
 - Annually
 - Every two years
3. At the time of renewal, the holder shall provide the department with an accurate list of the holder's employers for the previous biennial period, and the number of hours worked for each employer.
- True
 - False
4. Apprentices, when performing electrical work, shall have their _____ on them at all times.
- driver's license
 - electrical training certificate
 - passport
 - no documentation is required
5. What is the maximum percentage of each working day for which a journeyman does not have to be present on the job site?
- 0%
 - 25%
 - 33%
 - 50%
6. When working as a specialty electrician, not more than _____ noncertified individuals for every certified master specialty electrician.
- 1
 - 2
 - 3
 - 4

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7. A noncertified electrician may work without direct supervision during the last _____ of working towards meeting his/her practical experience requirements.
 - 4 months
 - 6 months
 - 10 months
 - 12 months
8. If the ratio of certified to noncertified individuals on a job site becomes one certified electrician to 3 or 4 noncertified individuals, the certified electrician must _____.
 - assist the noncertified individuals via supervision, instruction and directly engaging in electrical installation
 - be on the same job site with the noncertified individuals for a minimum of 75% of each working day
 - accurately verify and attest to the electrical trainee hours worked by electrical trainees on behalf of the electrical contractor
9. For which reason may the department review an electrical contractor's reported trainee hours?
 - Excessive hours are reported
 - Hours average 40 per week
 - Hours are less than 40 per week
 - No overtime hours are reported
10. What is the minimum number of hours you must have in fieldwork before taking the journeyman license test?
 - 1000
 - 2000
 - 4000
 - 8000
11. What is the minimum number of hours you must have in fieldwork before taking a specialty electrician test?
 - 1000
 - 2000
 - 4000
 - 8000
12. If you have successfully completed an apprenticeship program approved under chapter 49.04 RCW for the electrical construction trade, are you permitted to take the journeyman license test?
 - Yes
 - No
13. The master electrician exam will have questions relating to _____.
 - safety
 - the state electrical code
 - electrical theory
 - all of the answers provided
14. How many times may a person take the competency examination?
 - 1 time
 - 5 times
 - 11 times
 - Unlimited times
15. The certificate of competency shall be renewed every _____ on or before the license holder's birthday.
 - year
 - 2 years
 - 3 years
 - 4 years
16. How many annual hours of continuing education classes are required?
 - 4
 - 8
 - 12
 - 16
17. What is the penalty for late renewal of the certificate of competency?
 - No penalty
 - Twice the normal fee
 - You lose your right hand
 - You must start again as an entry-level apprentice
18. If a holder of a temporary permit fails the exam, an extension of _____ may be issued.
 - 20 days
 - 30 days
 - 60 days
 - 90 days
 - 120 days

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19. Which is a valid reason for the revocation of an electrical certificate?
- Misrepresenting work hours to meet field experience time in order to qualify to take the test
 - Scoring 100% on the exam
 - Challenging an electrical inspector regarding NEC rules and regulations
 - Safe but sloppy work
20. Can the department suspend the license of a person who is not in compliance with a child support order?
- Yes
 - No