

2009 WAC/ RCW Part 2 Questions.

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2009 WAC/RCW Part 2 Quiz 1 Sections WAC 296-46B-230

1) The total thickness of sheetrock required on both sides of a 2-hour firewall is:

- 1 inch
- 1 ¼ inch
- 2 inches
- 2 ½ inches

2) Who sets the standards for the height of the center of the service meter?

- The serving utility
- The Department
- The WACs and RCWs
- The Federal Power Administration

3) A service disconnect for a transient voltage surge suppressor does not need to be counted as one of the six service disconnects allowed by NEC 230.71.

True False

4) A residential patio cover for an overhead conductor span must be have at least _____ inches of clearance.

12

- 24
- 36
- 48

5) 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 _____ inches.

- 1
- 1 1/4
- 2
- 2 ½

6) 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 ¼ inches
- 2 inches
- 2 ½ inches

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7) The minimum distance between the lower loop of the entrance service wires and the roof is _____.

12 inches
16 inches
18 inches
24 inches

8) Plastic, non-hardening mastic must be placed between lead-type flashing and the conduit of the service entrance.

True False

9) Masts must be braced, secured, and supported in such a manner that no pressure from the attached conductors will be exerted on a roof flashing, meter base, or other enclosures. The minimum size wire for supporting is _____.

No. 6 Copperweld

Air craft cable

No. 12 single strand copper wire

The first two listed

10) The minimum bracing support tubing to be used is _____.

½ inch rigid galvanized metal conduit

¾ inch rigid galvanized metal conduit

1 inch rigid galvanized metal conduit

11) What is the minimum angle between the mast and the braces or supporting wires?

30 degrees

45 degrees

60 degrees

12) The minimum sized galvanized lag bolts that can be used to secure electrical channel is:

¼ inch

5/16 inch

3/8 inch

½ inch

13) Utilization of couplings for a mast is permitted only _____ the point where the mast is braced, secured, or supported.

Above

At

Below

14) Service mast support guys must be installed if the service drop attaches to the mast more than _____ above the roofline.

12 inches

24 inches

32 inches

36 inches

15) Service mast support guys must be installed if the service drop is greater than _____ feet in length from the pole or support.

50 feet

100 feet

200 feet

250 feet

16) Intermediate support masts may be installed in any manner deemed appropriate by the installation company.

True

False

17) Conductors must extend at least _____ from all mastheads to permit connection to the connecting overhead wiring.

12 inches

18 inches

24 inches

36 inches

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 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 above

19) Permanent identification plates are not required at each feeder disconnect identifying the area or units served if the feeder disconnect is remote from the area or unit served.

True

False

20) On an equipment upgrade, the following conditions were found:

a) The service conductors have an ampacity of 50 amps

b) The overcurrent protection for the equipment is 60 amps

What action is NOT allowed?

Run the equipment without any changes.

Replace the equipment with lower ampere unit

Pull larger service wires

Install an over current protection device to match conductor ampacity

Install an identification plate on the service equipment showing the ampacity of the conductors.

21) The installation of service conductors not exceeding 600 volts, nominal, within a building or structure is limited to the following methods EXCEPT:

Galvanized or aluminum rigid metal conduit

Galvanized intermediate metal conduit

EMT

Rigid nonmetallic conduit

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22) EMT (Electrical metallic tubing) is permissible for use service entrance conductors inside a building.

True False

23) Only conductors sheathed in white or green are permitted as the grounded service conductors.

True False

24) A sub panel may be allowed in a bathroom if it is located at least 5 ft from the water line of the bathtub.

True False

25) Which is NOT required of indoor service equipment and sub-panel equipment:

Be located with the center of the panel between 4'6" and 5' 6" from the datum plane of the floor.

Have adequate working space.

Be adequately illuminated.

26) A temporary construction service may be used as a permanent auxiliary service source for shops, barns, and garages exceeding 1000 sq. ft.

True False

27) A service disconnecting means located outside must be within _____ ft and in sight of the building served.

10

15

20

30

50

28) The building disconnecting means may supply _____ building(s).

One

Two

Three

29) When the service disconnecting means is installed inside the building, it must be located so that the service raceway extends no more than _____ inside the building/structure.

10 feet

15 feet

20 feet

30 feet

30) The installation of service conductors exceeding 600 volts, nominal, within a building or structure must be limited to the following methods EXCEPT:

Galvanized rigid metal conduit

EMT

Schedule 80 rigid nonmetallic conduit

Metal-clad cable that is exposed for its entire length

31) Grounded service conductors above 600 volts nominal shall only be green or white.

True False

2009 WAC/RCW Part 2 Quiz 2

Sections WAC 296-46B-250 through WAC 296-46B -300

1) An equipment-grounding conductor is not required to be installed with the circuit conductors between buildings.

True False

2) A grounded conductor (i.e., neutral) is not permitted to be used in place of a separate equipment grounding conductor between buildings.

True False

3) Which of the following is NOT an acceptable method for the inspector for verifying that the electrode that is encased in concrete has been correctly installed?

At a time previous to the electrical inspection, another inspector verified that the electrode was correctly installed.

Accepting the job site superintendent's verbal word that that the electrode was correctly installed.

Having the inspector measure the resistance of the grounding electrode attached to 20 feet of re-bar.

All of the above are acceptable.

4) The maximum distance that rods can be installed from each other in cases of services feeding adjacent but structurally separate buildings is _____.

2 feet

6 feet

10 feet

12 feet

5) A metallic valve used in nonmetallic plumbing systems is not required to be bonded to the electrical system unless required by an electrical equipment manufacturer's instructions.

True False

6) Hot and cold water plumbing lines are not required to be bonded together if, at the time of inspection, the inspector can determine the lines are mechanically and electrically joined by one or more metallic mixing valves.

True False

7) The neutral of a solidly grounded neutral system may be grounded at more than one point, at the following locations EXCEPT:

Services

Underground circuits where the neutral is exposed

Overhead circuits installed outdoors

In new single-phase (i.e., single phase to ground) installations

8) NEC power limited, Class 2, and Class 3 cables must be secured in compliance with which NEC reference article?

NEC 334.30

NEC 324.17

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NEC 334.34

9) Generally, cables for Class 2 power limited circuits must be installed using the same methods as line voltage wires.

True False

10) Telecommunication cables must be secured in a manner that will not cause damage to the cables and at intervals not exceeding ____ feet.

3
5
8
12

11) Cables are considered adequately supported when run through holes in building structural elements or other supporting elements.

True False

12) Clamps or fittings are not required where telecommunications cables enter boxes.

True False

13) 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 _____ feet.

3
5
8
10
12

14) The maximum sized cable that can be supported by wires in a suspended ceiling is:

½ inch trade size
¾ inch trade size
1 inch trade size

15) The maximum number of cables that a suspended ceiling wire can support is _____.

1
2
3
4
5

16) The suspended ceiling support for the two cable limitation does not apply to:

120 volt, No. 14, + ground cable
12 gauge Romex
Class 2 cables or Class 3 cables

17) The minimum sized support wire in a suspended ceiling is:

10 AWG
12 AWG
14 AWG
16 AWG

18) Support wires must be securely fastened to the structural ceiling and the suspended ceiling support frame.

True False

19) Telecommunications cables may pass through a ceiling area with no terminations or devices inside the ceiling area.

True False

20) Which of the following is NOT a requirement for cables placed in a raceway?

The cable is appropriate for the environment
The percentage fill does not exceed that allowed in NEC Chapter 9, Table 1

The cables are multi-stranded.

2009 WAC/RCW Part 2 Quiz 3 Sections WAC 296-46B-314 through WAC 296-46B-334

1) In vehicular traffic areas the open bottom junction boxes must be rated for not less than _____ loading.

None required
H-10
H-15
H-20

No open bottom junction boxes are allowed in vehicular traffic areas

2) In vehicular traffic areas the open bottom junction boxes must be provided with a bolted, hinged, or slide-on lid embossed with the identification _____.

“JUNCTION BOX”
“AUTHORIZED PERSONNEL ONLY”
“ELECTRICAL”
“NO ADMITTANCE”
No marking required

3) In incidental vehicular traffic areas (e.g., parks, sports fields, sidewalks, grass lawns, etc.) the open bottom junction boxes must be rated not less than:

None required
H-10 loading
H-15 loading
H-20 loading
Boxes are not rated

4) For the above application, the identification word embossed on the lid shall be:

“JUNCTION BOX”
“AUTHORIZED PERSONNEL ONLY”
“ELECTRIC”
“DANGER – HIGH VOLTAGE”
None required

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5) In non-vehicular traffic areas (e.g., flower beds, patio decks, etc.) the open bottom junction box must be rated not less than:

- None required
- H-10
- H-15
- H-20
- H-30

6) In non-vehicular traffic areas (e.g., flower beds, patio decks, etc.) the open bottom junction box must be designed for the purpose and must be provided with a lid embossed with the identification

- “JUNCTION BOX”
- “AUTHORIZED PERSONNEL ONLY”
- “ELECTRIC”
- “DANGER – HIGH VOLTAGE”
- None required

7) All conductors that are installed in approved electrical raceways (pull junction boxes) shall enter _____ into the enclosure.

- From either side
- Vertically from the bottom
- From the back only
- No restrictions

8) These raceways must be fitted with a:

- Bushing
- Terminal fitting
- Seal
- Any of the above
- None of the above

9) The raceway shall project above the surface material not less than:

- 1 inch
- 2 inches
- 3 inches
- 6 inches

10) The bottom surface material must be pea gravel or sand a minimum thickness of _____ or more if required by the box manufacturer.

- 1 inch
- 2 inches
- 3 inches
- 6 inches

11) Placing sheet rock over a “J” box containing electrical wiring is permissible by code.

- True
- False

12) “Romex” (Type NM) may be legally installed in which of the following places?

- Duplex residence
- Four-plex apartment building
- Subway Sandwich Shop
- Dental Office
- Community church building

13) Romex is not allowed in a structure more than _____ floors above grade.

- One
- Two
- Three
- Four
- Five

14) The first floor of a structure will be the lowest floor that has _____ % or more of the exterior wall surface level with or above finished exterior grade.

- 33
- 49
- 50
- 51
- 66

2009 WAC/RCW Part 2 Quiz 4

Sections WAC 296-46B-358 through WAC 296-46B-450

1) EMT (electrical metallic tubing) may be installed in direct contact with the earth or in concrete on or below grade.

- True
- False

2) Knob and tube wiring in an attic has been inspected and found to be in good condition. Is it legal to use loose fill insulation?

- No, remove the old knob and tube wiring and upgrade to current NEC required wires.
- No, loose filled insulation is a fire hazard.
- Yes, since the wiring does not appear to have been overheated.

3) Foam insulation may be used with knob-and-tube wiring if:

- Wiring has been inspected and authorized
- Knob and tube may be allowed if modified
- Not legal, never allowed to be used with knob and tube

4) The following overcurrent device may be used with knob & tube wiring.

- A penny (US 1 cent)
- Circuit breaker
- Type S fuse
- Inverse current fuses
- Choices 2 and 3

5) All luminaires within an enclosed shower area or within _____ of the waterline of a bathtub must be enclosed.

- 4 ft
- 5 ft
- 6 ft
- 6 ft 6 in
- No exposed luminaires are permitted in a bathroom

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6) The above luminaires, having exposed metal parts that are grounded, must be protected by a:
Circuit breaker
Fuse
Inverse current fuse
Ground fault circuit interrupter
No special additional protection is necessary

7) A flexible cord and connection to a suspended pendant box must utilize an _____ threaded hub.
Integral
External
Unattached
ASME
UPC

8) 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 _____ feet.
4
6
8
10
12

9) Strain relief(s) on the flexible cord are located:
The control end
The equipment end
On both ends
Not required by code

10) The flexible cord must be a minimum _____ copper:
#16 AWG
#14 AWG
#12 AWG
#10 AWG
#8 AWG

11) Water heaters with a rated circuit load in excess of 3,500 watts at 208/ 240 volts, must be provided with branch circuit conductors not smaller than _____.
#16 AWG
#14 AWG
#12 AWG
#10 AWG
8 AWG

12) All motors must be manufactured according to _____ standards for motors.
NEMA
ASHREA
OSHA
NEC
NAACP

13) 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

14) The minimum distance that oil filled transformers installed outdoors may be from any portion of a building with a non-combustible surface is _____ ft.
2 Feet
4 Feet
8 Feet
6 Feet
12 Feet

15) In an area in which a transformer is to be installed next to a non-inhabited structure, the transformer may be no closer than _____ feet from the building/structure.
2 Feet
4 Feet
6 Feet
8 Feet
10 Feet

16) The transformer must be outside a line:
Extended horizontally from the side of building.
Extended vertically from the ends of the eaves or rooflines.
Eyeballed and approximated.

17) A transformer can be installed no closer than _____ feet from a building's doors, windows, stairways, or other openings.
2
4
6
8
10

18) Oil leaking from the transformer should flow _____ the building.
Away from
Towards
Into a puddle next to

19) The number of posts required to adequately guard a transformer:
1
2
3
4
No number specified

20) Enclosures for total under ground oil-filled transformers must not be located within _____ of a doorway.
4 feet

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6 feet
8 feet
10 feet
12 feet

2009 WAC/ RCW Part 2 Quiz 5 RCW 19.280.161- 241

1) Which persons are not permitted to be engaged in the electrical trade doing fieldwork?

Master Journeyman electrician
Electrical Administrator
Journeyman electrician
Apprentice with an electrical training certificate working under supervision of a journeyman
All of the above

2) How often does an apprentice need to renew their training certificate?

One time only
Every 6 months
Annually
Every two years

3) Supervision of an electrical trainee requires a journeyman at the job site.

True False

4) What is the maximum percentage of each working day that a journeyman does not have to be present on the job site?

0% 25% 33% 50%

5) A non-certified electrician may work without direct supervision the last _____ months of meeting the practical experience requirements.

4
6
10
12

6) If the ratio of certified to non-certified individuals on a job site becomes one certified electrician to 3 or 4 non-certified individuals, the certified electrician must: Assist the non-certified individuals by supervision, instruction and directly engage in electrical installation

Be on the same job site as the non-certified 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

7) For which reason may the department review an electrical contractor's reported trainee hours?

Excessive hours were reported
Hours averaged 40 per week

Hours were less than 40 per week
No over time hours were reported

8) What is the minimum number of hours you must have in fieldwork before taking the 01 Journeyman license test?

1000
2000
4000
8000

9) If you 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

10) What is the minimum number of hours of fieldwork you must have completed before taking a specialty electrician test?

1000 2000 4000 8000 No requirement

11) How many times can a person take the competency examination?

1 5 11 Unlimited

12) How many annual hours of continuing education classes are required?

4 8 12 16

13) What is the penalty for a late renewal of the certificate of competency?

No penalty
Twice the normal fee
You lose your right hand
Start again as entry-level apprentice

14) If a holder of a temporary permit fails the exam, an extension of _____ days may be issued.

20 30 60 90 120

15) Which is a valid reason for the revocation of an electrical certificate?

Misrepresenting his work hours to meet field experience time to qualify to take the test.
Scoring 100% on the exam.
Challenging an electrical inspector as to NEC rules and regulations.
Safe but sloppy work.

16) Can the department suspend the license of a person who is not in compliance with a child support order?

Yes No

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