Part B: Code Book Questions

Article 200: Use And Identification Of Grounded Conductors

1. The grounded conductor, when insulated, shall have insulation that is suitable, other than color, for any ungrounded conductor of the same circuit on circuits of less than _____ volts.

(a) 120  
(b) 240  
(c) 600  
(d) 1000

2. No grounded interior wiring shall be electrically connected to a supply system unless the supply system contains a corresponding conductor which is ____.

(a) shielded  
(b) bonded  
(c) grounded  
(d) low-voltage

3. The grounded conductor of a mineral-insulated, metal-sheathed cable shall be identified at the time of installation by a ____ marking at its termination.

(a) distinctive  
(b) neutral  
(c) solid  
(d) identified

4. Insulated conductors smaller than ____, intended for use as grounded conductors of circuits, shall have an outer identification of white or gray outer finish or by three continuous white stripes.

(a) #4  
(b) #2  
(c) #1  
(d) #1/0

5. A 120 volt lighting circuit and a 277 volt lighting circuit are installed in the same raceway, the 120 volt circuit has a white colored grounded conductor, the 277 volt grounded conductor would be ____.

(a) white  
(b) gray  
(c) white with a green stripe  
(d) white with a yellow stripe

6. The identification of terminals to which a grounded conductor is to be connected shall be substantially _____ in color.

(a) brass  
(b) copper  
(c) green  
(d) white
7. All devices excluding lighting and appliance branch circuit panelboards provided with terminals for the attachment of conductors and intended for connection to more than one side of the circuit shall have _____ properly marked for identification.

(a) conductors  (c) sides 
(b) terminals  (d) none of these

8. For devices with screw shells the terminal for the _____ conductor shall be the one connected to the screw shell.

(a) green  (c) ungrounded 
(b) grounded  (d) grounding

9. Appliances that have _____ that are to be connected by (1) permanent wiring method or (2) by field installed attachment plugs and cords with three or more wires (including the equipment grounding conductor) shall have means to identify the terminal for the grounded circuit conductor (if any).

(a) line-connected screw shell lampholders  (c) a single pole switch 
(b) a single pole overcurrent device in the line  (d) all of these

10. No grounded conductor shall be attached to any terminal or lead so as to reverse designated _____.

(a) phase  (c) polarity 
(b) angle  (d) line

**Article 210: Branch Circuits**

11. Which of the following is not a standard classification for a branch circuit supplying several loads?

(a) 20 amp  (c) 30 amp 
(b) 25 amp  (d) 50 amp

12. All conductors in a multiwire branch circuit shall originate from the same _____.

(a) feeder  (c) panelboard 
(b) service  (d) receptacle

13. A multiwire branch circuit supplying more than one device or equipment on the same ____ shall be provided with a means to disconnect simultaneously all the hot conductors at the panelboard where the branch circuit originated.

(a) branch-circuit  (b) yoke  (c) device  (d) outlet assembly
14. A multiwire branch-circuit shall supply only _____.

(a) line-to-neutral loads  
(b) a multiwire branch circuit that supplies only one utilization equipment  
(c) a branch circuit overcurrent device that opens all ungrounded conductors simultaneously  
(d) all of the above

15. In dwelling units and guest rooms of hotels, motels, and similar occupancies, the voltage shall not exceed 120 volts, between conductors that supply the terminals of _____.

(a) cord and plug connected loads 1440 volt amperes or less  
(b) cord and plug connected loads, less than 1/4 horsepower  
(c) luminaires  
(d) all of these

16. Voltage shall not exceed 600 volts between conductors on branch circuits supplying only ballasts for electric-discharge lamps in tunnels with a height of not less than ____ feet.

(a) 12’  
(b) 15’  
(c) 18’  
(d) 22’

17. Ground-fault circuit protection for personnel is required for all 120 volt single-phase, 15 and 20 ampere receptacles that are installed in dwelling unit _____.

(a) bathrooms  
(b) garages  
(c) kitchen counter-tops  
(d) all of these

18. In other than dwellings ____ must have GFCI protection in a commercial buildings, when installed.

(a) garage receptacles  
(b) basement receptacles  
(c) bathroom receptacles  
(d) storage room receptacles

19. Two-wire D.C. circuits and A.C. circuits of two or more ungrounded conductors shall be permitted to be tapped from the ungrounded conductors of circuits having _____.

(a) a properly sized tap conductor  
(b) less than 50 volts  
(c) a balanced neutral system  
(d) a grounded neutral conductor

20. For the kitchen small appliance branch circuit in a dwelling, the Code requires not less than which of the following?

(a) two 20 amp circuits  
(b) one 15 amp circuit  
(c) two 15 amp circuits  
(d) one 20 amp circuit
21. For household ranges rated _____ or more rating, the minimum branch circuit rating shall be 40 amperes.

   (a) 4 kW  (c) 8 kW
   (b) 6 kW  (d) 8-3/4 kW

22. Where a ____ supplies continuous loads or any combination of continuous and non-continuous loads, the rating of the overcurrent device shall not be less than the noncontinuous load plus 125% of the continuous load.

   (a) load  (c) demand
   (b) branch-circuit  (d) conductor

23. Where connected to a branch circuit having a rating of ____ amperes, lampholders shall be of the heavy-duty type.

   (a) 15  (c) 25
   (b) 20  (d) 30

24. Heavy-duty lampholders shall have a rating not less than _____ watts if of the admedium type, and not less than 750 watts of any other type.

   (a) 600  (c) 750
   (b) 660  (d) 1000

25. A single receptacle shall have a rating of _____ percent of the branch-circuit rating.

   (a) 70  (c) 100
   (b) 80  (d) 125

26. For portable appliances used on 15 or 20 amp branch circuits, the rating of any one appliance shall not exceed _____ percent of the branch circuit rating.

   (a) 50%  (c) 80%
   (b) 60%  (d) 100%

27. Branch circuits in dwelling units shall supply only loads within that dwelling unit or loads associated only with that dwelling unit. Branch circuits required for the purpose of lighting, ____, or other needs for public or common areas shall not be supplied from a dwelling unit panelboard.

   (a) communications  (c) central alarm
   (b) signal  (d) all of these
28. A cord connector that is supported by a permanently installed cord pendant shall be considered _____.

(a) receptacle outlet  
(b) permanent cord  
(c) lighting outlet  
(d) outlet device

29. Where flexible cords are permitted by the code to be permanently connected, it is permissible to omit _____ for such cords.

(a) switches  
(b) receptacles  
(c) grounding connections  
(d) GFCI protection

30. Outlets for specific appliances such as laundry equipment, shall be within _____ feet of the appliance.

(a) 4’  
(b) 6’  
(c) 8’  
(d) 10’

31. Receptacles located _____ feet above the floor are not counted in the required number of receptacles along the wall.

(a) 4’  
(b) 6’  
(c) 5-1/2’  
(d) none of these

32. A factory installed duplex receptacle in a baseboard heater where the heater is to be permanently installed in a residence is _____.

(a) prohibited by the code  
(b) allowed only when the receptacle is factory connected to the heater circuit  
(c) not allowed to be used as the required receptacle outlet for flexible cords with attachment plugs, when wired on a separate circuit from the heater circuit  
(d) allowed to be used in lieu of the required receptacle outlet for flexible cords with attachment plugs, when wired on a separate circuit from the heater circuit

33. No point along the floor line in any usable wall space in a dwelling may be more than ____ feet from an outlet.

(a) 6’  
(b) 6-1/2’  
(c) 8’  
(d) 10’

34. Receptacle outlets in floors shall not be counted as part of the required number of receptacle outlets unless located within _____ of the wall.

(a) 1 foot  
(b) 1-1/2 feet  
(c) 2 feet  
(d) 30 inches
35. For dwelling units, all of the following are true except _____.

(a) outdoor outlets are permitted to be supplied through the small appliance branch circuits
(b) the outlet for kitchen refrigeration equipment may be supplied by an individual 15 amp branch circuit
(c) bathroom receptacles shall be supplied by a 20 amp branch circuit which shall have no other outlets
(d) the clothes washer shall be supplied by a 20 amp branch circuit and outlets outside the laundry area are not permitted on this circuit

36. A dwelling unit kitchen receptacle outlet shall be installed at each wall counter space that is ____ inches or wider.

(a) 12"
(b) 24"
(c) 36"
(d) 48"

37. A bathroom in a dwelling has a counter space of seven feet (including the sink). How many receptacles are required to serve this area?

(a) 1
(b) 3
(c) 4
(d) none are required

38. A one-family dwelling unit that is at grade level shall have a minimum of _____ outdoor outlets.

(a) 1
(b) 2
(c) 3
(d) 4

39. For a one family dwelling at least one receptacle outlet, in addition to any provided for laundry equipment, shall be installed in each ____.

(a) basement
(b) attached garage
(c) detached garage with electric power
(d) all of these

40. At least one receptacle outlet shall be required for hallways of ____ feet or more in length.

(a) 6’
(b) 8’
(c) 10’
(d) 12’

41. The space measured horizontally above a show window must have at least one receptacle for each ____ linear feet.

(a) 12’
(b) 10’
(c) 8’
(d) 6’
42. A residence has a front entrance on the north side of the house along with an attached garage with an 8' wide door, also a back entrance door on the south side of the house. How many lighting outlets are required for these outdoor entrances?

(a) 1  
(b) 2  
(c) 3  
(d) none of these

**Article 215: Feeders**

43. The minimum feeder-circuit conductor size, before the application of any adjustment or correction factors, shall have an allowable ampacity equal to or greater than the noncontinuous load plus ____ percent of the continuous load.

(a) 125%  
(b) 100%  
(c) 80%  
(d) 75%

44. The feeder conductor ampacity shall not be less than that of the service conductors where the feeder conductors carry the total load supplied by the service conductors with an ampacity of ____ amps or less.

(a) 40  
(b) 45  
(c) 50  
(d) 55

45. Feeders containing a common neutral shall be permitted to supply ____.

(a) 2 sets of 3-wire feeders  
(b) 3 sets of 3-wire feeders  
(c) 2 sets of 4-wire or 5-wire feeders  
(d) all of these

46. Where installed in a metal raceway all conductors of all feeders using a common neutral shall be ____.

(a) insulated for 600 volt  
(b) shielded  
(c) enclosed within the same raceway  
(d) none of these

47. Where required, a diagram showing feeder details shall be provided prior to the ____.

(a) completion of the installation  
(b) installation of the feeders  
(c) use of feeders  
(d) use of branch-circuits
Article 220: Branch Circuit, Feeder, And Service Calculations

48. Except where computations result in a major fraction of an ampere ____, such fractions may be dropped.

(a) larger than 0.5  (c) smaller than 0.5
(b) 0.5 or larger     (d) 0.8 or larger

49. When determining the load on the “volt-amps per square foot” basis, the floor area shall be computed from the _____ dimensions of the building.

(a) inside  (c) midpoint
(b) outside  (d) any of these

50. For dwelling unit(s), the computed floor area shall not include ____.  

(a) closets  (c) bathrooms
(b) kitchens  (d) open porches

51. When an office is to be wired with the number of receptacles unknown, the demand for receptacles is _____ volt-ampere per square foot.

(a) 1 vA  (c) 3.5 vA
(b) 3 vA  (d) 180 vA

52. The unit lighting load for dwellings expressed in volt-amperes per square foot is ____.

(a) 1 vA  (c) 3 vA
(b) 2 vA  (d) 3-1/2 vA

53. For fixed multioutlet assemblies, where appliances are likely to be used simultaneously, each ____ foot or fraction thereof shall be considered as an outlet of not less than 180 vA.

(a) 1’  (c) 3’
(b) 2’  (d) 5’

54. A previously unwired portion of an existing residence or a structural addition to an existing residence, either which exceeds _____ square feet, shall be computed in accordance with section 220.12 and 220.14.

(a) 100’  (c) 300’
(b) 250’  (d) 500’
55. In computing the load of fluorescent light fixtures, the computation shall be based on the ____ of the fixture.

(a) wattage of the ballast  
(b) wattage of the lamps  
(c) total ampere rating  
(d) lamp voltage rating

56. The minimum feeder load for 40 linear feet of show window lighting is ____ vA.

(a) 4,000  
(b) 8,000  
(c) 10,000  
(d) none of these

57. For feeder and service calculations, in other than dwelling units, a maximum of ____ of lighting track, or fraction thereof, shall be considered 150 vA.

(a) 2’  
(b) 4’  
(c) 5’  
(d) 8’

58. Fixed electric space heating loads shall be computed at ____ percent of the total connected load; however in no case shall a feeder or service load current rating be less than the rating of the largest branch circuit supplied.

(a) 80%  
(b) 100%  
(c) 115%  
(d) 125%

59. Application of demand factors to small appliance and laundry loads in dwellings are permitted in Table ____.

(a) 220-3  
(b) 220-12  
(c) 220-42  
(d) 220-44

60. It shall be permissible to apply a demand factor of 75% to the nameplate-rating load of 4 or more _____ fastened in place in a dwelling.

(a) water heaters  
(b) dishwashers  
(c) disposals  
(d) all of these

61. In using the general method of calculation what is the minimum demand for a household clothes dryer?

(a) 4,000 watts  
(b) 4,500 watts  
(c) 5,000 watts  
(d) the nameplate rating
62. Which of the following is not true about Table 220.55?

(a) A demand factor from Table 220.55 could be applied to a cooking appliance over 1-3/4 kW.
(b) Table 220.55 is permitted to calculate a branch circuit for one household range.
(c) Table 220.55 can be used to calculate commercial cooking equipment.
(d) The maximum demand for a 12 kW range is 8kW.

63. Five kitchen appliances in a restaurant would have a demand factor of ____ percent.

(a) 65%  (b) 70%  (c) 80%  (d) 90%

64. Where it is unlikely that two or more noncoincident loads will be in use simultaneously, it shall be permissible to use only the ____ load of the two in computing the total load of a feeder.

(a) smaller  (b) larger  (c) total  (d) average

65. For a feeder supplying household cooking equipment and household electric clothes dryers the maximum unbalanced load on the neutral conductor shall be considered as ____ of the load on the ungrounded conductors.

(a) 40%  (b) 50%  (c) 70%  (d) 80%

66. A 500 ampere load supplied by a 240/120v feeder requires a feeder neutral with an ampacity of ____ amps.

(a) 410  (b) 340  (c) 280  (d) 350

67. Under the optional method of calculation for a single-family dwelling, the general calculated load shall be not less than 100 percent of the first 10 kVa plus ____ percent of the remainder.

(a) 40%  (b) 50%  (c) 60%  (d) 75%

68. Using the optional method of calculation for a single-dwelling unit, the central space heating would be calculated at ____ percent.

(a) 40%  (b) 50%  (c) 65%  (d) 100%

69. The multifamily dwelling optional method of calculation is permitted if ____.

(a) there are three or more dwelling units
(b) no dwelling unit is supplied by more than one feeder
(c) each dwelling unit is equipped with electric electric cooking equipment
(d) all of these