

## ICC Master/Journeyman, 2011 NEC - Practice Exam

- 1622.** In what application is Type BMU cable permitted to be used?
- A. in other spaces used for environmental air
  - B. in risers in fireproof shafts
  - C. within buildings in other than air-handling spaces and risers in RMC or IMC
  - D. none of the above
- 1623.** What type of network-powered broadband communications cable is permitted to substitute for Type BLR cable.
- A. CMP
  - B. CMR
  - C. BMR
  - D. any of the above
- 1624.** What is the maximum cross-sectional area of a conduit when the number of conductors is two?
- A. 31%
  - B. 40%
  - C. 53%
  - D. 65%
- 1625.** What is the maximum cross-sectional area of a conduit when there are more than two cables in the conduit?
- A. 31%
  - B. 40%
  - C. 53%
  - D. 65%

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- 1626.** Informative Annex C shows the maximum number of conductors and fixture wires \_\_\_\_\_ permitted in trade sized of the applicable conduit or tubing.
- A. all of the same size
  - B. all of different size
  - C. most of the same size
  - D. of two different sizes
- 1627.** When calculating conduit or tubing fill, the dimensions of equipment grounding or bonding conductor \_\_\_\_\_ be included.
- A. shall
  - B. shall not
  - C. need not
  - D. may
- 1628.** Conduit or tubing nipples that are \_\_\_\_\_ inches in length or less are permitted to be filled to 60% of their total cross-sectional area.
- A. 6
  - B. 12
  - C. 18
  - D. 24
- 1629.** If a conductor is not listed in Chapter 9, conductor fill is calculated using \_\_\_\_\_.
- A. an average of the dimensions
  - B. an estimate of the dimensions
  - C. the actual dimensions
  - D. any of the above

**Answer Key: ICC Master/Journeyman, 2011 NEC**

<u>Question</u>	<u>Ans.</u>	<u>Reference</u>
1625	B	Chapter 9 Tables - Table 1, Percent of Cross Section of Conduit and Tubing for Conductors and Cables
1626	A	Chapter 9 Tables - Notes to Tables (1)
1627	A	Chapter 9 Tables - Notes to Tables (3)
1628	D	Chapter 9 Tables - Notes to Tables (4)
1629	C	Chapter 9 Tables - Notes to Tables (5)
1630	D	Chapter 9 Tables - Notes to Tables (6)
1631	C	Chapter 9 Tables - Notes to Tables (7)
1632	B	Chapter 9 Tables - Notes to Tables (9)
1633	A	Chapter 9 Tables - Tables 4 and 5
		From Table 5 the approximate area of a single 12 AWG THHN conductor is 0.0133 in <sup>2</sup> . Since there are 3 conductors the cross sectional area is $3 \times 0.0133 = 0.0399$ in <sup>2</sup> . The maximum fill percentage for 3 or more conductors is 40% or 0.4 therefore the minimum conduit area is $0.0399 \div 0.4 = 0.09975$ in <sup>2</sup> . From Table 4 for EMT conduit the area of the smallest trade size that is not less than 0.09975 in <sup>2</sup> is trade size 1/2 with an area of 0.304 in <sup>2</sup> .
1634	C	Chapter 9 Tables - Tables 4 and 5
		From Table 5 the approximate area of a single 300 kcmil XHHW conductor is 0.4536 in <sup>2</sup> . Since there are 2 conductors the cross sectional area is $2 \times 0.4536 = 0.9072$ in <sup>2</sup> . The maximum fill percentage for 2 conductors is 31% or 0.31 therefore the minimum conduit area is $0.9072 \div 0.31 = 2.926$ in <sup>2</sup> . From Table 4 for RMC conduit the area of the smallest trade size RMC that is not less than 2.926 in <sup>2</sup> is trade size 2 with an area of 3.408 in <sup>2</sup> .
1635	D	Chapter 9 Tables - Tables 4 and 5
		From Table 5 the approximate area of a single 750 kcmil RHH conductor without outer cover is 1.1652 in <sup>2</sup> . Since there is only a single conductor the cross sectional area is $1 \times 1.1652 = 1.1652$ in <sup>2</sup> . The maximum fill percentage for a single conductor is 53% or 0.53 therefore the minimum conduit area is $1.1652 \div 0.53 = 2.107$ in <sup>2</sup> . From Table 4 for Rigid PVC Conduit (PVC), Schedule 80 conduit the area of the smallest trade size that is not less than 2.107 in <sup>2</sup> is trade size 2 with an area of 2.874 in <sup>2</sup> .
1636	B	Chapter 9 Tables - Tables 4 and 5
		From Table 5 the approximate area of a single 2/0 AWG TFE conductor is 0.2027 in <sup>2</sup> . Since there are 4 conductors the cross sectional area is $4 \times 0.2027 = 0.8108$ in <sup>2</sup> . The maximum fill percentage for 3 or more conductors is 40% or 0.4 therefore the minimum conduit area is $0.8108 \div 0.4 = 2.027$ in <sup>2</sup> . From Table 4 for EMT conduit the area of the smallest trade size that is not less than 2.027 in <sup>2</sup> is trade size 2 with an area of 3.246 in <sup>2</sup> .
1637	B	Chapter 9 Tables - Table 8
1638	D	Chapter 9 Tables - Table 8
1639	C	Chapter 9 Tables - Table 8
1640	B	Chapter 9 Tables - Table 8
1641	A	Chapter 9 Tables - Table 8
1642	C	Chapter 9 Tables - Table 8
1643	B	Chapter 9 Tables - Table 8
1644	A	Chapter 9 Tables - Table 8
1645	D	Chapter 9 Tables - Table 9
1646	C	Chapter 9 Tables - Table 9
1647	A	Chapter 9 Tables - Table 9
1648	B	Chapter 9 Tables - Table 9

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Questions in the practice tests are categorized as shown in the table below. Note that in many cases a question could be categorized in more than one category.

Category	Practice Exam Questions
General Knowledge and Plan Reading	1-62, 1624-1665
Services and Service Equipment	174-261
Feeders	100-114
Branch Circuits and Conductors	65-99, 115-173
Wiring Methods and Materials	382-544, 1549-1623
Equipment and Devices	63-64, 262-381, 545-554, 576-579, 600-680, 747-761, 765-798
Control Devices	555-575, 580-599
Motors and Generators	681-746, 762-764
Special Occupancies, Equipment and Conditions	799-1548

The electrical code does not have a section on Plan Reading and there are no questions on this subject in this practice exam. If you are not familiar with reading plans we suggest that you take a course or purchase book on the subject. One good book is *Reading Architectural Plans for Residential and Commercial Construction*, Fifth Edition by Ernest R. Weidhaas. This book has a section on electrical plan reading. Studying from this book and working the exercises at the end of the book should give you a pretty good feel for reading plans.