

Level II

Chapter 3

Worksheet

1. What is the appropriate occupancy classification for a university building constructed to accommodate offices, classrooms and non-hazardous research laboratories?
 - a. Group I
 - b. Group B
 - c. Group E
 - d. Group H

2. A reformatory is constructed with Use Condition 1 Restraint. What is the occupancy classification?
 - a. Group B
 - b. Group R
 - c. Group M
 - d. Group I-3

3. A restaurant with an occupant load of 86 people shall be classified as Group _____.
 - a. M
 - b. A-2
 - c. A-1
 - d. B

4. Child care facilities which accommodate 105 children less than 2.5 years old, and who stay less than 24 hours per day, shall be classified as Group _____.
 - a. E
 - b. B
 - c. R
 - d. I-4

5. Dormitory facilities shall be classified as Group _____?
- a. R-1
 - b. E
 - c. R-2
 - d. B
6. Dry cleaning establishments which utilize a liquid solvent having a flash point at or above 200° F are a(n) _____ Occupancy.
- a. F-1
 - b. B
 - c. F-2
 - d. Hazardous
7. Class 3 Oxidizers that are pressurized at more than _____ psi are classified as _____ Occupancies.
- a. 15, H-2
 - b. 20, H-2
 - c. 30, H-5
 - d. 15, H-3
8. A chemical that has a median lethal dose of more than 200 milligrams per kilogram is a(n) _____ chemical.
- a. organic peroxide
 - b. oxidizer
 - c. pyrotechnic
 - d. toxic
9. A child care facility that provides accommodations in a residence occupied as a home by the caregiver for persons of any age for less than 24 hours, including more than five but not more than 16 occupants, excluding staff would be a(n) _____ occupancy.
- a. educational
 - b. child care facility
 - c. R-4
 - d. I-4

10. Cooperative Innovative High School Programs taught at colleges, community colleges or universities shall be considered a(n)_____.
- a. A-3, because there could be less than 100 students
 - b. B, because it is not a required part of primary schooling
 - c. E, because the students are still below the 12th grade
 - d. I-2, because some hospitals are considered teaching hospitals

Level II

Chapter 3

Answer Key

1. B 304.1
2. B 308.4.1
3. B 303.1
4. D 308.5.2
5. C 310.1
6. D 307.1 #5
7. A 307.4
8. D 307 – DEFINITION P. 26
9. C 310.1
10. B 304.1 & 305.1

Level II

Chapter 4

Worksheet

1. What is the appropriate occupancy classification for a one story private garage less than 1000 sf?
 - a. Group S-1
 - b. Group U
 - c. Group B
 - d. Group M

2. The clear height of each floor level in vehicle and pedestrian traffic areas shall be no less than _____ feet.
 - a. 6
 - b. 7
 - c. 8
 - d. 9

3. Exit access corridors walls in Group I-2 shall be _____.
 - a. 1-hour fire resistance
 - b. smoke resistant
 - c. not less than 10 feet in height
 - d. none of the above

4. Resident sleeping room doors in Group I-3 shall have a minimum clear opening of _____ inches.
 - a. 28
 - b. 30
 - c. 32
 - d. 36

5. The maximum travel distance to a fire extinguisher on a single floor in an R-4 adult day care facility shall be ____ feet.
 - a. 40
 - b. 50
 - c. 75
 - d. 100

6. A proscenium curtain on a 60 ft high stage must withstand flames and smoke, the opening shall be provided with _____.
 - a. a fire-resistive-rating
 - b. a fire curtain in compliance with NFPA 80
 - c. an approved water curtain complying with Section 903.1.1
 - d. all are correct

7. The maximum travel distance to a fire extinguisher in a temporary overflow emergency shelter for the homeless shall be ____ feet.
 - a. 40
 - b. 45
 - c. 50
 - d. 75

8. Boiler rooms in public schools shall be separated from the remainder of the building by ____ hour rated construction.
 - a. 1
 - b. 2
 - c. 3
 - d. 4

9. Refuge areas in Group I-2 shall have at least ____ net square feet per patient in treatment rooms and other low-hazard areas.
 - a. 30
 - b. 45
 - c. 60
 - d. 65

10. Where cellulose nitrate film is utilized or stored, such rooms shall comply with _____.
- a. NFPA 20
 - b. NFPA 40
 - c. IFPA 40
 - d. IBC 2020
11. Underground buildings shall be of Type _____ construction.
- a. V
 - b. III
 - c. IV
 - d. I
12. Means of egress for anchor buildings attached to a covered mall shall be _____.
- a. included when calculating the occupant load of any given space
 - b. applied to the food courts only, since they are assembly areas
 - c. provided independently from the mall means of egress system
 - d. located every 75 feet regardless of occupant classification
13. Each normally occupied story of a licensed residential care facility shall have at least _____ exit(s).
- a. one
 - b. two
 - c. two remotely located
 - d. three emergency escape and rescue
14. Overhead heating pipes routed through a drying room shall have a clearance of not less than _____ from combustible contents in the dryer.
- a. ½ inch
 - b. 2 inches
 - c. 4 inches
 - d. 10 inches

15. Residential aircraft hangers shall not exceed _____ square feet in area and _____ feet in height.
- a. 1,000, 10
 - b. 1,500, 15
 - c. 2,000, 20
 - d. 2,500, 25

Level II

Chapter 4

Answer Key

1. B 406.1.1 & 406.1.2
2. B 406.2.2
3. B 407.3, 711.3 & 711.4
4. A 408.3.1
5. A 426.3
6. D 410.3.5
7. C 424.1.10
8. B 427.1
9. A 407.4.1
10. B 409.1
11. D 405.2
12. C 402.4.3.1
13. C 425.3.3
14. B 417.2
15. C 412.5.5

Level II

Chapter 5

Worksheet

1. The allowable area for a business (B), type V-B construction, unsprinklered, one story building built on the property line is _____ sq. ft.
 - a. 6,000
 - b. 12,000
 - c. 9,000
 - d. 18,000

2. What is the maximum height of an educational occupancy of type IV construction and is unsprinklered?
 - a. 80 ft.
 - b. 90 ft.
 - c. 65 ft.
 - d. 55 ft.

3. The maximum area limit of a two-story residential (R1) building, Type III-B unsprinklered, is _____ square feet.
 - a. 12,000
 - b. 16,000
 - c. unlimited
 - d. None of the above

4. The maximum area per floor of a Group I-2 building, Type II-B, two-story, sprinklered is _____ square feet.
 - a. 11,000
 - b. 22,000
 - c. unlimited
 - d. None of the above

5. Height modifications are allowed in all occupancies except ____.
- a. Business
 - b. Mercantile
 - c. Hazardous
 - d. Allowed in all of the above occupancies
6. What is the allowable area for an F-1 occupancy with Type III-B construction and no area increase?
- a. 12,000 sq. ft.
 - b. 14,500 sq. ft.
 - c. 19,000 sq. ft.
 - d. 23,500 sq. ft.
7. The clear height above and below the mezzanine floor construction shall not be less than _____.
- a. 6 ft., 8 inches
 - b. 7 ft., 0 inches
 - c. 7 ft., 6 inches
 - d. 8 ft., 0 inches
8. A Group R-1 occupancy of Type III-B construction, 3 stories in height, sprinklered has an allowable height of _____.
- a. 55 feet
 - b. 65 feet
 - c. 75 feet
 - d. 60 feet

Level II

Chapter 5

Answer Key

1. C TABLE 503
2. C TABLE 503
3. B TABLE 503
4. B 506.3
5. C 504.2, 506.3
6. A TABLE 503
7. B 505.1
8. A 504.2

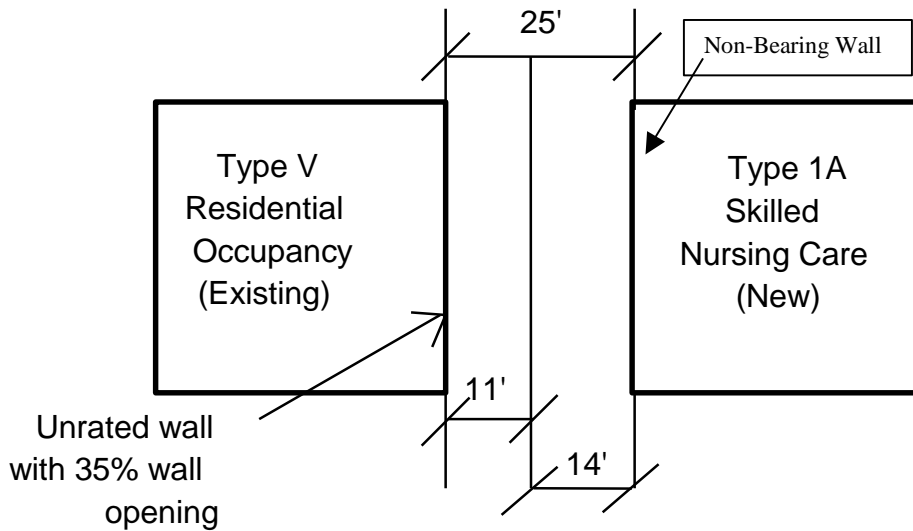
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Chapter 6

Worksheet #1

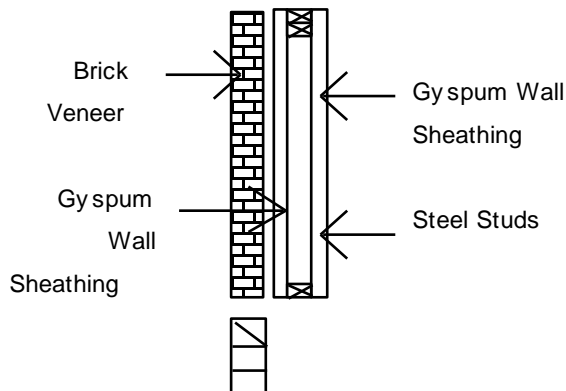
Table 601 & 602 Examples

1. Given the following:



What is the required rating of the non-load bearing wall of the skilled nursing center?

2. Given the following exterior wall section, indicate the type(s) of construction to which it applies.



3. A two story Type II-B 1 hr. protected school is proposed. During value engineering, a fire retardant treated roof system is presented to you for approval. Is this roof system acceptable?
- a. yes
 - b. no
4. Partitions dividing portions of offices occupied by one tenant only, and which do not establish a corridor serving an occupant load of _____ or less may be constructed of fire-retardant treated wood up to 6 feet in height.
- a. 10
 - b. 30
 - c. 50
 - d. 100
5. Roof framing splice plates in type IV construction shall be no less than _____ inches in thickness.
- a. 3
 - b. 4
 - c. 5
 - d. 6
6. What is the lowest fire resistive rating for a beam that supports only a roof that is 25 feet above the floor below in a mercantile occupancy of type I-A construction?
- a. 0
 - b. 1
 - c. 1.5
 - d. 2
7. A type I-B building with a girder supporting a floor only shall have a fire resistive rating of _____ hour(s).
- a. .5
 - b. 1
 - c. 1.5
 - d. 2

8. Given a Type I building, four stories in height with 30 feet of open space to property lines; what is the minimum type of material for non bearing walls?
- a. Non-combustible
 - b. Fire-retardant
 - c. Steel studs
 - d. Conventional lumber
9. Given a two-story, Type I building; wood trusses can be used if _____.
- a. of conventional lumber
 - b. of fire retardant lumber
 - c. of non-combustible materials
 - d. spaced 2 feet on center
10. Fire retardant partitions can be used in _____.
- a. Type V construction only
 - b. All types of construction
 - c. Type IV only
 - d. Type I & II construction only

Level II

Chapter 6

Answer Key #1

1. 1 HOUR TABLES 601 & 602
2. TYPE I, II & IV CONSTRUCTION
3. A TABLE 601, NOTE C
4. B 603.1(8)
5. A 602.4.3
6. A TABLE 601 NOTE C
7. D TABLE 601
8. B 603.1
9. B TABLE 601, NOTE C (3)
10. B 603.1.8

Level II

Chapter 7

Worksheet

1. What is the opening protection required for a three story office building mechanical shaft?
 - a. 1 hour.
 - b. 1.5 hours
 - c. 3 hours
 - d. 20 minutes

2. What is the opening protection required for a door to a bath room off a corridor with no electric heat and 1 hour walls surrounding the bath room?
 - a. 20 minutes
 - b. .75 hour
 - c. 45 minutes
 - d. None required

3. What is the required rating of an opening protective that is separated 12 feet from the property line in an office building of Type V construction?
 - a. 20 minutes
 - b. .50 hours
 - c. 0 hours
 - d. 1 hour

4. What is the maximum size of wired glass for 1 and 1.5 rated doors in an exterior wall?
 - a. None
 - b. 100 square inches
 - c. 1296 square inches
 - d. The amount that was tested in the assembly

5. What is the maximum size of wire glass in a .75 hour door?
 - a. None
 - b. 100 square inches
 - c. 1296 square inches
 - d. The amount that was tested in the assembly

6. What is the maximum size of wire glass for a 20 minute rated door?
 - a. Not limited
 - b. 100 square inches
 - c. 1296 square inches
 - d. The amount that was tested in the assembly

7. What is the approved NFPA standard for fire doors?
 - a. NFPA 80
 - b. ASTM E-119
 - c. ASTM E-84
 - d. NFPA 13

Level II

Chapter 7

Answer Key

1. A TABLE 715.4
2. D TABLE 715.4
3. C TABLE 602
4. B TABLE 715.5.3
5. C TABLE 715.5.3
6. A TABLE 715.5.3
7. A 715.4

Level II

Chapter 9

Worksheet

1. Automatic fire sprinklers are not required for:
 - a. Basement areas with less than 1,500 sq. ft.
 - b. buildings with suitable access on at least one side of each story above grade.
 - c. nightclubs and lounges less than 500 sq. ft. when located in a basement.
 - d. Both a & b

2. Automatic sprinklers are required anytime a Group M occupancy with combustible materials on display for public sale and the fire area exceeds ____ sf.
 - a. 12,000
 - b. 14,000
 - c. 18,000
 - d. 20,000

3. Automatic sprinkler systems must be monitored by a supervising station, unless they are limited area systems serving fewer than ____ sprinklers.
 - a. 20
 - b. 19
 - c. Both a & b
 - d. Neither a or b

4. All smoke detectors in Group R-1 occupancies are required to be installed in the following areas:
 - a. at least one per story within the sleeping unit
 - b. one in every sleeping room or area
 - c. one outside of every sleeping room in the means of egress
 - d. all of the above

5. In buildings where a fire alarm system is required, visible alarm notification appliances are not required in the following _____.
 - a. public areas, like a lobby
 - b. common areas like a break room
 - c. in exits as defined in 1002.1
 - d. in building alterations where no fire alarm system work occurs

6. An automatic sprinkler system shall be installed in rubbish and linen chutes in the following locations _____.
 - a. terminal rooms
 - b. top of the chute
 - c. chutes three or more stories tall shall have additional accessible sprinkler heads
 - d. all of the above

7. In new and existing buildings protected with quick response sprinklers, it is acceptable to eliminate portable fire extinguishers in _____.
 - a. Group A
 - b. Group S
 - c. Group B
 - d. Group I

8. Stages over 1,000 sf in area shall be equipped with a _____ wet standpipe system with 1 ½ inch and 2 ½ inch connections on _____ side(s) of the stage.
 - a. Class I, one
 - b. Class II, two
 - c. Class III, one
 - d. Class III, each

9. Manual pull stations for commercial cooking systems shall be near the _____, positioned _____ feet from the exhaust system.
 - a. deep fat fryer, 5
 - b. means of egress, between 10-20
 - c. 10 burner range, 14
 - d. kitchen, 40

10. Wiring and controls for operation and control of smoke exhaust fans shall be _____.
 - a. protected against temperatures over 1,000 degrees F
 - b. accessible to the fire service from the exterior
 - c. connected ahead of the main disconnect
 - d. all of the above

Level II

Chapter 9

Answer Key

1. D 903.2.11.1
2. A 903.2.7
3. A 903.4 EXCEPTION #2
4. D 907.2.11.1
5. C 907.5.2.3 EXCEPTION #2
6. D 903.2.11.2
7. C 906.1 #1 EXCEPTION
8. D 905.3.4
9. B 904.11.1
10. D 910.4.4

Level II

Chapter 10

Worksheet

1. Stairs serving as a means of egress must have a minimum head room clearance of _____.
 - a. 7', 2"
 - b. 7', 0"
 - c. 6', 8"
 - d. 7', 6"

2. How far apart must the exits be in an unsprinklered Business Occupancy with dimensions of 30' X 40' with two required exits?
 - a. 45.85 feet
 - b. 33.50 feet
 - c. 22.91 feet
 - d. 50 feet

3. In general, ramps with a rise greater than 6" shall have a hand rail on _____ side(s) and be at least ____ inches high.
 - a. 1, 38
 - b. 2, 34
 - c. 2, 38
 - d. 1, 34

4. What is the maximum dead-end length in a NFPA 13 sprinklered Group B occupancy corridor?
 - a. 50 feet
 - b. 20 feet
 - c. 35 feet
 - d. none of the above

5. A one story, sprinklered restaurant has a 40' X 40' dining room. It is lined around the exterior wall by 24 booths, each having 2 seats 48" long. Each booth occupies 24 sf of floor area. What is the maximum seating capacity, if the rest of the dining room has movable tables and chairs?
- a. 106 persons
 - b. 68 persons
 - c. 164 persons
 - d. 99 persons
6. How many exits are required in the restaurant in the previous question?
- a. 1
 - b. 2
 - c. 3
 - d. 4
7. What is the minimum clear opening width of the exit(s) doors required in the restaurant in question 5?
- a. 32 inches
 - b. 36 inches
 - c. 44 inches
 - d. 24.60 inches
8. Without applying exceptions, guard rails on open sided stairs shall have intermediate rails or ornamental patterns spaced so that a _____ diameter sphere cannot pass through any openings within 34 inches of the floor.
- a. 4 inches
 - b. 6 inches
 - c. 8 inches
 - d. there is no maximum
9. Exit signs are required in all of the following spaces except _____.
- a. access to exits
 - b. corridors leading to an exit
 - c. where the exit is not clear
 - d. spaces requiring only one means of egress

10. Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet wide that contain control devices shall be equipped with _____.
- a. an exit door
 - b. bolt lock
 - c. panic hardware
 - d. panic hardware or fire exit hardware
11. Parking structures shall not have less than _____ exits from each parking tier.
- a. one
 - b. two
 - c. three
 - d. depends on the size of the parking structure
12. Exit enclosures shall terminate at a(n) _____.
- a. exit discharge
 - b. exit passageway
 - c. public way
 - d. Both a or c
13. Emergency escape and rescue openings are _____ in basements without habitable spaces that are no larger 200 sf.
- a. not required
 - b. always required
 - c. never installed
 - d. usually installed
14. Exits in Group A occupancies with more than 300 occupants are required to discharge _____ percent out of the main exit.
- a. 25
 - b. 40
 - c. 50
 - d. 100
15. The common path of egress travel shall not exceed _____ feet in a Group H-2 facility.
- a. 15
 - b. 25
 - c. 50
 - d. 75

Level II

Chapter 10

Answer Key

1. C 1009.2
2. C 1015.2.1
3. B 1010.8
4. A 1018.4 EXCEPTION #2
5. B TABLE 1004.1.1
6. B TABLES 1021.1
7. A 1008.1.1
8. A 1013.3
9. D 1011.1 EXCEPTION #1
10. D 1008.1.10
11. B 1021.1.2
12. D 1022.2
13. A 1029.1 EXCEPTION #7
14. C 1028.2
15. B 1014.3

LEVEL II

CHAPTER 16

WORKSHEET

1. What figure shows the basic wind speed for the determination of wind loads?
 - A. Figure 1608
 - B. Figure 1609
 - C. Figure 1609.6.2.1(1)
 - D. Figure 1610.1
2. What is the uniformly distributed live load for a corridor on the first floor of an office structure?
 - A. 80 psf
 - B. 90 psf
 - C. 100 psf
 - D. 40 psf
3. Grab bars shall be designed to resist a single concentrated load of ____ applied in any direction at any point?
 - A. 200 psi
 - B. 150 psi
 - C. 250 psf
 - D. 250 pounds
4. Vehicle barrier systems for passenger cars shall resist a minimum of which of the following.
 - A. 60,000 lbs at 1 ft 8 in. above the floor
 - B. 6,000 lbs at 1 ft. 8 in. above the floor
 - C. 2,500 lbs at 2 ft. 4 in. above the ramp
 - D. 6,000 lbs psf at 1 ft. 6 in. above the floor

LEVEL II

CHAPTER 16

ANSWER KEY

1. B. 1609.3, FIG 1609
2. C. TABLE 1607.1
3. D. 1607.7.2
4. D 1607.7.3

Level II

Chapter 17

Worksheets

1. Special inspections area required for which of the following?
 - a. smoke control systems
 - b. steel
 - c. concrete
 - d. all of the above

2. What is the correct reference standard for welding of structural steel?
 - a. AWS D1.1
 - b. AWS D1.4
 - c. ACI 318
 - d. AISC A.3.6

3. Special inspection agencies that test smoke control systems must have expertise in _____.
 - a. fire protection engineering
 - b. mechanical engineering
 - c. certification as air balancers
 - d. all of the above

4. In conducting a preconstruction load test, the tested assembly shall be considered to have successfully met the test requirements if the assembly recovers not less than _____ of the maximum deflection within _____ after the removal of the test loads.
 - a. 50, 12
 - b. 90, 24
 - c. 75, 24
 - d. 75, 12

5. What is the correct standard for joist hangers?
- ASTM D 1143
 - ASTM D 1761
 - ASTM E 72
 - ASTM E 196
6. Aluminum, vinyl and wood exterior windows and glass doors shall be labeled as conforming to _____.
- AANA/NWWAD/101/1.S.2
 - AAMA/DWWA/101/1.S.2
 - exterior door and window requirements
 - AAMA/WDMA/CSA101/I.S.2/A440
7. The information recorded shall include installation equipment used, pile dimensions, tip elevations, final depth, final installation torque and other pertinent data as required by the registered design professional for _____ foundations.
- cast-in-place deep
 - driven deep
 - helical pile
 - vertical masonry
8. In level 1 masonry construction, how often shall the construction of mortar joints be verified and inspected, prior to grouting?
- once per hour
 - once per day
 - once per wall
 - periodic
9. Sprayed fire-resistant materials shall be a minimum allowable thickness of _____ or greater.
- 1 inch
 - what the approved fire-resistance design requires
 - ¼ inch
 - 12 inches by 12 inches

10. What is the minimum height that requires special inspection for storage racks anchoring in structures assigned to Seismic Design Category D, E or F?
- a. any metal racks
 - b. in a high-piled storage facility as required in section 413.1
 - c. 6 feet
 - d. 8 feet

Level II

Chapter 17

Answer Key

1. D 1704.3, 1704.4, 1704.16
2. A 1704.3.1.1
3. D 1704.16.2
4. C 1715.3.1
5. B 1716.1.1
6. D 1714.5.1
7. C 1704.10
8. D TABLE 1704.5.1 #6 D
9. B 1704.12.4
10. D 1707.5

Level II

Chapter 18

Worksheet

1. A column carrying a load of 30 kips is to be erected on silty sand. If presumptive bearing capacities are used as design criteria, which column footing size is most appropriate?
 - a. 24" x 24"
 - b. 30" x 30"
 - c. 48" x 48"
 - d. None of the above

2. A design shows a 10 inch open ended steel pipe pile with a $\frac{1}{4}$ wall thickness. Is this permitted by the code?
 - a. Yes
 - b. No

3. Concrete in foundations shall have a specified compressive strength of not less than ____ pounds per square inch.
 - a. 3,000
 - b. 3,500
 - c. 2,000
 - d. 2,500

4. Pier and curtain wall foundations shall be permitted to be used to support Type V construction in dwellings not more than _____ stories in height.
 - a. 3
 - b. 2
 - c. 1
 - d. Not allowed

5. The minimum width of a turn down slab shall be _____ inches unless designed by an engineer.
 - a. 12
 - b. 16
 - c. 8
 - d. 20

6. Plain concrete footings for Group R-3 occupancies are permitted to be a minimum of _____ inches in thickness.
- a. 4
 - b. 6
 - c. 8
 - d. 10
7. What is the maximum height of a 4-inch load bearing masonry wall supporting wood frame walls and floors?
- a. 3 feet
 - b. 4 feet
 - c. 6 feet
 - d. 10 feet
8. Foundation drains can not contain more than 10% of material that pass through a _____.
- a. #4 sieve
 - b. #6 sieve
 - c. #8 sieve
 - d. #10 sieve
9. A pile load test shall be performed if _____ shaft stress is exceeded.
- a. 200 psi
 - b. 300 psi
 - c. 400 psi
 - d. 1,200 psi

10. Steel cased piles shall not be less than _____ in diameter.
- a. 8 inches
 - b. 10 inches
 - c. 12 inches
 - d. 16 inches
11. Cast in place concrete pile shall be deigned by a registered design professional if the length of the pile exceeds _____ times the diameter.
- a. 5
 - b. 10
 - c. 25
 - d. 30
12. In driven precast concrete pile foundations, piles having a diameter of 16 inches or less shall have ties not smaller than _____.
- a. No. 3 gage
 - b. No. 5 gage
 - c. No. 6 gage
 - d. No. 7 gage
13. Retaining walls providing a vertical relief of five feet within a horizontal distance of _____ feet shall be designed by a registered design professional.
- a. 30
 - b. 50
 - c. 75
 - d. 100
14. Where a basement is considered a story above grade and the finished ground level adjacent to the basement wall is below the _____ basement floor elevation for _____ % or more of the perimeter, the basement walls and floors shall be damp proofed.
- a. 25
 - b. 50
 - c. 30
 - d. 75

15. What number and type of rebar is required for an 7.5 inch concrete foundation wall with a designlateral soil load of 60 psf/ ft, with a wall height of 8 feet and 6 feet of unbalanced fill?
- a. #4 – 43 inches on center
 - b. #5 – 43 inches on center
 - c. #6 – 43 inches on center
 - d. #8 – 43 inches on center
16. Plain concrete foundation walls with five feet of unbalanced fill against a seven foot wall sited in "SC" type soil shall be a minimum thickness of _____.;
- a. 8 inches
 - b. 7.5 inches
 - c. 10 inches
 - d. 12 inches
17. What is the minimum size of a column footing sited in sedimentary rock supporting a load of 80,000 pounds?
- a. 4.47 feet x 4.47 feet
 - b. 2.66 feet x 2.66 feet
 - c. 2 feet x 2 feet
 - d. 2.33 feet x 2.33 feet
18. What is the allowable bearing capacity of loose sand?
- a. 2,000 psf
 - b. 3,000 psf
 - c. 4,000 psf
 - d. 5,000 psf

Level II

Chapter 18

Answer Key

1. C TABLE 1806.2
2. A 1810.3.5.3.2
3. D TABLE 1808.8.1
4. B 1809.10
5. A 1809.4
6. B 1809.8, EXCEPTION
7. B 1809.10.4
8. A 1805.4.2
9. C 1810.3.5.2.4
10. A 1810..3.5.3.2
11. D 1810.3.5.2.2 EXCEPTION
12. B 1810.3.8.1
13. B 1807.2.5
14. A 1805.1.1
15. B TABLE 1807.1.6.2
16. C 1807.1.6.2, ALSO 1610.1
17. A TABLE 1806.2
18. A TABLE 1806.2

Level II

Chapter 19

Worksheet

1. In reinforced concrete, the nominal maximum size of coarse aggregate shall not be larger than _____.
 - a. $\frac{1}{2}$ the least dimension between the sides of the forms
 - b. $\frac{1}{4}$ the depth of slabs
 - c. $\frac{3}{5}$ the minimum clear spacing between individual reinforcing bars or wires, bundles of bars, or pre-stressing tendons or ducts.
 - d. per ACI 318 specifications

2. Per ACI, air entrainment is required when the concrete is located in _____.
 - a. Severe exposure
 - b. Moderate exposure
 - c. Both A & B
 - d. None of the above

3. The placement of metal reinforcement in concrete _____.
 - a. shall not be welded
 - b. shall comply with ACI 318, Section 7.5
 - c. shall not have rust or mill scale
 - d. both A and C

4. The specified compressive strength for concrete shall not be less than _____ psi.
 - a. 2,500
 - b. 3,000
 - c. 3,500
 - d. 7,500

5. In North Carolina, the minimum specified strength of concrete in basement walls exposed to moderate weathering shall be _____.
- a. 2,500 psi
 - b. 3,000 psi
 - c. 3,000 psi, air entrained
 - d. 3,500 psi, air entrained
6. Sample for strength tests of each class of concrete placed each day shall be taken not less than _____.
- a. once a day
 - b. once for each 150 cubic yards of concrete
 - c. once for each 5,000 square feet of surface area
 - d. in accordance with ACI 318
7. How many concrete cylinders are required to conduct a 28-day strength test?
- a. 1
 - b. in accordance with ACI 318
 - c. 3
 - d. 45
8. The minimum cover for #6 rebar in cast in place concrete exposed to the earth or weather is _____ inches.
- a. in accordance with ACI 318
 - b. 1.5
 - c. 0.75
 - d. 54
9. A vapor barrier is required to be installed under all slab on grade.
- a. Yes
 - b. No

10. What is the allowable service load of $\frac{3}{4}$ bolts with 5 inches of embedment in 3,000 psi concrete, 4.5 inches from the edge in shear?
- a. 3,250 pounds
 - b. 3,560 pounds
 - c. 4,275 pounds
 - d. 4,300 pounds
11. When the total volume of a given class of concrete is less than _____ cubic yards, strength tests are not required.
- a. 25
 - b. 50
 - c. 75
 - d. 100
12. Structural plain concrete bearing walls shall not be less than _____ inches in thickness.
- a. 3.5
 - b. 4
 - c. 5.5
 - d. 6
13. Special inspections shall be conducted of concrete elements of buildings and structures as required by Chapter _____.
- a. 1
 - b. 5
 - c. 10
 - d. 17
14. Where openings in walls occur with structural plain concrete, at least _____ rebar shall be No. _____ around windows and doors.
- a. one, 4
 - b. one, 5
 - c. one, 6
 - d. two, 5

15. Shotcrete shall be kept moist for at least _____ hours and shall be maintained above _____ degrees F.
- a. 12, 24
 - b. 12, 32
 - c. 24, 40
 - d. 24, 68

Level II

Chapter 19

Answer Key

1. D 1903.1, ACI 318
2. C TABLE 1904.3 NOTE B
3. B 1907.5
4. A TABLE 1904.3
5. C TABLE 1904.3
6. D 1905.6.2
7. B 1905.6.3
8. A 1907.5
9. B 1910.1 EXCEPTIONS
10. B TABLE 1911.2
11. B 1905.6.2 EXCEPTION
12. C 1909.6.2
13. D 1901.5
14. B 1909.6.3
15. C 1913.9.1, 1913.9

Level II

Chapter 21

Worksheets

1. The maximum spacing for weep holes in masonry walls is _____.
 - a. 24 inches on center
 - b. 36 inches on center
 - c. 33 inches on center
 - d. 60 inches on center

2. The minimum compressive strength for type M mortar is _____ psi.
 - a. 2,500
 - b. 1,800
 - c. 750
 - d. 350

3. The minimum thickness of masonry bearing walls more than one story high shall be ____ inches.
 - a. 6
 - b. 10
 - c. 8
 - d. 12

4. The design for lintels shall provide for a minimum support at the _____ ends of _____ inches in length.
 - a. 2
 - b. 3
 - c. 4
 - d. 5

Level II

Chapter 21

Answer Key

1. C 2104.1.8
2. A TABLE 2103.8 (2)
3. C 2109.5.2
4. C 2104.1.5

Level II

Chapter 22

Worksheet

1. What organization writes the specification for the design fabrication and erection of structural steel?
2. What organization writes the specification for welding in building construction?
3. What are the two types of high strength bolts?
4. What does ASTM stand for?
5. What is the nominal depth of a W14 X 38 beam?
6. What is the nominal weight per linear foot of a W-14 x 38 beam?

Level II

Chapter 22

Answer Key

1. AISC
2. AWS
3. A325, A490
4. American Society for Testing Materials
5. 14"
6. 38 lb/ft

Level II

Chapter 24

Worksheet

1. Tempered spandrel glass _____.
 - a. is exempt from labeling
 - b. is exempt from permanent labeling
 - c. shall be identified with a removable paper label by the manufacturer.
 - d. Both a and c

2. The following locations require safety glazing:
 - a. openings in doors through which a 3-inch sphere is unable to pass.
 - b. glazing with a glazed area exceeding 9 sq. ft. with lowest edge less than 18" above the finish floor level with a 1 1/2" horizontal member located at 30" above the floor.
 - c. glazing in storm doors.
 - d. faceted and decorative glass.

3. Sloped glass, ___ degrees or less from vertical in a window shall be designed to resist the wind loads in Chapter 16.
 - a. 8
 - b. 10
 - c. 12
 - d. 15

4. Glass located within _____ inches of a door and in the same plane of the door is considered hazardous.
 - a. 12
 - b. 16
 - c. 24
 - d. 30

5. The differential deflection of interior glazing where installed adjacent to a walking surface and has two adjacent unsupported edges shall not be greater than the thickness of the panels when a force of ____ pounds per linear foot is applied horizontally to one panel at any point up to ____ inches above the walking surface.
- 15, 15
 - 30, 24
 - 42, 50
 - 50, 42
6. For multiple-layer glazing systems in skylights or other glazing systems, each light or layer shall consist of any glazing materials which may include ____.
- wired glass
 - light-transmitting plastic materials
 - laminated glass with a minimum 10-mil polyvinyl butyral interlayer
 - Only a & b
7. Glass in glass elevator hoistway doors shall not be less than _____ percent of the total visible door panel surface area as seen from the landing side.
- 15
 - 60
 - 75
 - 100
8. What testing method shall be used to confirm the impact loads for individual glazed areas in squash courts?
- NFPA 10
 - ANSI Z24.1
 - CPSC 16 CFR 1201
 - OSHA 1910.120
9. Glazing in doors where more than 9 square feet of area on one side of one lite in a greenhouse, shall require Class _____ when using CPSC 16 CFR 1201.
- I
 - II
 - III
 - IV

10. Annealed glass is permitted to be installed without screens in the sloped glazing system used exclusively for growing plants and not open to the public, as long as the ridge does not exceed _____ feet above grade.
- a. 30
 - b. 35
 - c. 40
 - d. 45

Level II

Chapter 24

Answer Key

- | | | |
|-----|---|---------------------|
| 1. | D | 2403.1 |
| 2. | C | 2406.4 #3 |
| 3. | D | 2404.1 |
| 4. | C | 2406.4 (6) |
| 5. | D | 2403.4 |
| 6. | D | 2405.2 #2 |
| 7. | B | 2409.1.2 |
| 8. | C | 2408.2.1 |
| 9. | B | TABLE 2406.2 (1) |
| 10. | A | 2405.3 EXCEPTION #3 |

Level II

Chapter 30

Worksheet

1. A four story building with 4 elevators, each serving all floors, will require a minimum of how many hoistways?
 - a. 1
 - b. 2
 - c. 3
 - d. 4

2. Hoistway walls in a 4-story building must be _____ - hour rated construction.
 - a. 1
 - b. 2
 - c. 3
 - d. 4

3. A new building is planned with 4 elevators, 2 each in 2 hoistways. Each hoistway is 12' x 8'. What area of vents is required for each hoistway?
 - a. 4,360 square feet
 - b. 6 square feet
 - c. 8.72 square feet
 - d. not enough information

4. Escalators provided in below grade transportation stations shall have a clear width of _____ inches.
 - a. 32
 - b. 36
 - c. 42
 - d. 48

5. _____ systems shall not be located in elevator equipment rooms.
- a. Communication
 - b. Electrical
 - c. Plumbing
 - d. Mechanical
6. Where only one elevator is installed, the elevator shall automatically transfer to standby power within _____ seconds after failure of normal power.
- a. 10
 - b. 30
 - c. 60
 - d. 90
7. Wires or cables that provide normal and standby power shall be protected by construction having a minimum_____ fire-resistance rating.
- a. 20 minute
 - b. 45 minute
 - c. 1-hour
 - d. 2-hour
8. The occupant evacuation elevators shall be used for occupant self-evacuation only in the normal elevator operating mode prior to _____.
- a. taking the stairs
 - b. Phase I Emergency Recall Operation
 - c. Phase II Emergency In-Car Operation
 - d. waiting 20 minutes to see if the fire alarm is real
9. Elevators hoistways and elevator machine rooms that are protected by automatic fire sprinklers, a means shall be provided in accordance with NFPA 72, Elevator Shutdown, to disconnect automatically the main power supply to the affected elevator prior to the application of water. What is this safety measure called?
- a. venting
 - b. Phase I Emergency Recall Operation
 - c. shunt trip
 - d. fire alarm activation

10. Elevator hoistways or dumbwaiters penetrating more than three stories shall be provided with _____ for smoke and hot gases in case of fire.
- a. vents
 - b. fire sprinklers
 - c. smoke detectors
 - d. 3-hour fire rating

Level II

Chapter 30

Answer Key

1. B 3002.2
2. B 3002.1 AND 708.4
3. B 3004.3
4. A 3005.2.2
5. C 3006.6
6. C 3003.1.2
7. C 3008.15.1
8. B 3008.3
9. C 3006.5
10. A 3004.1

Level II

Chapter 31

Worksheet

1. Membrane structures erected by for a period shorter than 180 days shall comply with the _____.
 - a. IBC
 - b. IFC
 - c. NFPA
 - d. IRC

2. Standby power for a required auxiliary inflation system on an air-supported or air-inflated structure shall be capable of operating independently for a minimum of _____ hours.
 - a. 2
 - b. 1
 - c. 0.5
 - d. 4

3. Fire barriers between pedestrian walkways, openings within the 10 foot horizontal extension of protected walls shall be equipped with devices providing _____ hour(s) fire protection rating in accordance with section 715.
 - a. 2
 - b. 1.5
 - c. 1
 - d. 0.75

4. Awnings shall have frames of noncombustible material, fire-retardant- treated wood, wood of type _____ size, or _____ hour(s) construction.
 - a. IV, 1
 - b. IIB, 2
 - c. V, 1
 - d. IV, 2

5. Which of the following signs is exempt from the requirements to obtain a permit before erection?
- a. Ground sign
 - b. Wall mounted sign
 - c. Electric sign
 - d. Changing a sign face
6. The minimum type of construction of isolated radio towers not more than 75 feet in height shall be _____.
- a. Type I
 - b. Type II-A
 - c. Type II-B
 - d. Type IV
7. On swimming pool barriers, the maximum vertical clearance between the grade and the bottom of the barrier shall be _____.
- a. 6 inches
 - b. 4 inches
 - c. 3 inches
 - d. 2 inches
8. If a projecting sign exceeds _____ in one facial area, there shall be provided two supports on each side not more than _____ apart to resist wind pressure.
- a. 20 square feet, 8 feet
 - b. 30 square feet, 4 feet
 - c. 30 square feet, 8 feet
 - d. 50 square feet, 8 feet
9. Which of the following signs can be attached with combustible materials?
- a. Roof top sign on a sloped roof
 - b. Structural frame of a 36 feet tall ground sign
 - c. Plastic materials with a burn rate faster than 2.5 inches per minute
 - d. Wall sign attached to buildings with wood wall construction

10. Vehicular gates intended for automation shall be designed, constructed and installed to comply with the requirements of _____ and the gate openers shall be listed in accordance with _____.
- a. UL 2200, UL 924
 - b. ASTM F 2200, UL 325
 - c. UL 305, NFPA 72
 - d. ISO 8115, UL 2017

Level II

Chapter 31

Answer Key

1. B 3102.1
2. D 3102.8.2
3. D 3104.5
4. A 3105.3
5. D 3107, APPENDIX H, H101.2 #5
6. C 3108.3, EXCEPTION
7. D 3109.4.1
8. C 3107, APPENDIX H, H112.1
9. D 3107, APPENDIX H, H111.2
10. B 3110.3 & 3110.4