

## **NTC Red Book CBT Level 1-4 Answer Key**

### **Level I**

#### **1.1.1 Properly Install Fire Alarm System Components**

- |    |   |   |
|----|---|---|
| 1  | E | NFPA 72-10.5.6.3.1, page 34 , 2007-4.4.1.5.3.1, page 27         |
| 2  | B | NFPA 72-27.6.3.2.2.1, page 149,2007-9.4.3.2.2.1(2e), page 85    |
| 3  | D | NFPA 72-26.3.4, page 130, 2007-8.3.4, page 66                   |
| 4  | D | NFPA 72-3.3.122, page 25 , 2007-3.3.89, page 20                 |
| 5  | B | NFPA72-Table 17.6.3.5.1 page 91, 2007-Table 5.6.5.5.1. page 40, |
| 6  | C | NFPA 72-Table 17.6.2.1, page 90, 2007-Table 5.6.2.1.1, page 39  |
| 7  | A | NFPA 72-17.7.5.6.5.1 page 91, 2007-5.16.6.5.1.3, page 47        |
| 8  | B | NFPA 72-17.7.2.2, page 92, 2007-5.7.2.2, page 41                |
| 9  | D | NFPA 72-17.7.3.6.8 (3), page 94, 2007-5.7.3.3.8(3), page 42     |
| 10 | D | NFPA 72-Table B.3.2.5, page 278, 2007-Table B.3.2.5, page 202   |

#### **1.1.2 Practice Correct Wiring Methods**

- |    |   |  |
|----|---|--|
| 1  | C | NFPA 70 250.52 a (5), page 105/102   |
| 2  | A | NFPA 72-3.3.122.3, page 25, 2007-3.3.89.3, page 21                           |
| 3  | A | NFPA 72-10.16.6.1, page 38, 2007-4.4.6.6.1, page 30                          |
| 4  | C | NTC Brown Book, page 407   |
| 5  | D | NFPA 70-760.154(d), page 631, NTC Brown Book, page 249                       |
| 6  | D | NFPA72-17.6.3.4.2.1,page 91 , 2007-5.6.5.4.1, page 40                        |
| 7  | A | NFPA 72-17.14.6, page 100, 2007-5.13.6, page 46                              |
| 8  | B | NFPA 72-Table 14.4.2.2(14)(j), page 65, 2007-Table 10.4.2.2(14)(j), page 101 |
| 9  | B | Basic Metering   |
| 10 | C | NFPA 70-300.11, page 131, NTC Brown Book, page 252                           |

#### **1.1.3 Practice Worksite Safety**

- |    |   |                       |
|----|---|-----------------------|
| 1  | D | First Aid Textbook    |
| 2  | A | First Aid Textbook    |
| 3  | D | First Aid Textbook    |
| 4  | D | First Aid Textbook    |
| 5  | B | First Aid Textbook    |
| 6  | C | OSHA 29 CFR Part 1910 |
| 7  | C | OSHA 29 CFR Part 1910 |
| 8  | B | OSHA 29 CFR Part 1910 |
| 9  | C | OSHA 29 CFR Part 1910 |
| 10 | D | OSHA 29 CFR Part 1910 |

### **1.2.1 Follow Assigned Maintenance Standards and Procedures**

- |    |   |  |
|----|---|--|
| 1  | D | NFPA 72-17.6.3.1.3, page 91 , 2007-5.6.3.1, page 39    |
| 2  | A | NFPA 72-10.14.1, page 38 , 2007-4.4.4.1(1), page 30    |
| 3  | D | NFPA 72-10.17.1.1, page 38, 2007-4.4.7.1, page 31      |
| 4  | B | NFPA 72-14.4.10, page 76, 2007-10.4.9, page 109        |
| 5  | B | NFPA 72-14.2.1.2, page 54, 2007-10.2.1.2.3, page 92    |
| 6  | B | NTC Brown Book, page 393                               |
| 7  | C | NTC Brown Book, page 14                                |
| 8  | D | Electronics Textbook                                   |
| 9  | A | NFPA 72-29.7.5.2, page 157 , 2007 - 11.7.5.2, page 117 |
| 10 | B | NFPA 72-14.6.1, 2007-10.6.1, page 109                  |

## Level II

### 2.1.1 Apply Project Requirements to Known Occupancy Type

1	C	NFPA 101-1.2
2	D	IBC-903.4.2, page 188
3	D	NFPA 72-Annex H, page 327, 2007-Annex G, page 246
4	C	IBC-Table of Contents
5	A	NFPA 72-17.5.3.3.2, page 90 , 2007- 5.5.2.3.2, page 39
6	D	IBC-903.2.6(2), page 185
7	C	IBC-907.2.3(3), page 185
8	B	IBC-907.2.2.1, page 195
9	D	IBC-907.2.1.1, page 195
10	A	IBC-907.2.7, page 197

### 2.1.2 - Apply Contractual Criteria to Projects

1	D	Blueprint Reading Textbook
2	A	Blueprint Reading Textbook
3	B	NFPA 72-17.7.6.3.2, page 97, 2007-5.7.5.3.2, page 39
4	C	Math Textbook
5	C	Math Textbook
6	C	Math Textbook
7	B	Spelling & Grammar Textbook
8	A	Spelling & Grammar Textbook
9	B	Spelling & Grammar Textbook
10	C	Construction Textbook

### 2.1.3 – Coordinate With Client On-Site

1	C	NTC Brown Book, page 9
2	D	NTC Brown Book, page 10
3	B	Blueprint Reading Textbook
4	C	Spelling & Grammar Textbook
5	C	Spelling & Grammar Textbook
6	D	NFPA 72-18.3.4.2, page 101, 2007-7.3.4.2, page 61
7	D	Math Textbook
8	D	Math Textbook
9	E	NFPA 72-10.5.6.3, page 34, 2007-4.4.1.5.3, page 27
10	D	NFPA 72-A.3.2.2, page 160, 2007-A.3.2.2, page 120

#### **2.1.4 – Verify Site Conditions for Systems Applications**

1	C	Construction Text
2	D	Construction Text
3	D	NTC Brown Book, page 121
4	D	NFPA 72-Chapter 17, 2007-Chapter 5
5	D	NFPA 72-17.4.9, page 89 , 2007-5.16.5.9
6	A	NFPA 72-Table 17.6.3.5.1, page 91, 2007-5.6.5.5.1
7	C	NFPA 72-A.17.7.1.8, page 205, 2007-A.5.7.1.8, page 122
8	D	NTC Brown Book
9	B	NFPA 72-17.6.3.4.1.2, page 91, 2007-5.6.5.4.3, page 40
10	B	NFPA 72-17.4.9, page 89, 2007-5.16.5.9, page 47

#### **2.1.5 – Assist in Creation of Shop Drawings**

1	E	IBC-907.1.2, page 194
2	B	NTC Brown Book, page 381
3	B	NFPA 72-Fig A.17.6.3.1.1(g) page 202, 2007-A.5.6.5.1(g), page 136
4	D	NFPA 72-17.8.3.2.1, page 98, 2007-5.8.3.2.1, page 44
5	C	NTC Brown Book, page 388
6	A	NFPA 72-23.8.5.4.2, page 113, 2007 - 6.8.5.4.2, page 53
7	A	NFPA 72-10.5.6.3 page 34, 2007 - 4.4.1.5.3, page 27
8	A	NFPA 72-18.5.4.4.3, page 105 , 2007-7.5.4.2.2
9	C	NFPA 72-18.4.2.5 page 102, 2007 - 6.8.6.5.3, page 55
10	A	NFPA 72-17.7.3.2.4.1, page 93 , 2007-5.7.3.2.4

#### **2.1.6 – Calculate Power/Battery and Other Requirements as Requested**

1	E	NFPA 70, 700.9(d)(1), page 598
2	B	NFPA 70, 701.11, page 602
3	C	NFPA 72-10.5.10.6. page 36 , 2007-4.4.1.9.6.1, page 28
4	B	NFPA 72-27.5.2.5.1 (2), page 145, 2007-9.5.1.5.1(2), page 87
5	C	NTC Brown Book, page 179-181
6	C	NTC Brown Book, page 407
7	A	NTC Brown Book, page 414
8	B	NFPA 70-760.43,page 626
9	D	NFPA 70-760.121(a), page 628
10	C	NFPA 72-10.5.5.2, page 34, 2007-4.4.1.4.2.3

#### **2.1.7 – Identify Codes and Standards**

1	E	72-3.2.2, page 19, 2007-3.2.2, page 19
2	B	72-3.2.4, page 19, 2007 – 3.2.4, page 15
3	A & B	NTC Brown Book, page 327
4	C	NFPA 72-Figure A.17.7.3.2.2, page 207, 2007-Figure A.5.7.3.2.2, page 139
5	E	NFPA 72-10.3.1, page 32 , 2007-4.3.1, page 26
6	C	NFPA 72-17.14.2, page 99, 2007-5.13.2
7	B	NFPA 72-26.3.5.1, page 130 , 2007-8.3.5.1, page 67
8	C	NFPA 72-17.7.5.6.3, page 95 , 2007-5.16.6.3, page 47
9	A	NFPA 72-26.3.4.2, page 130, 2007-8.3.4.2, page 67
10	D	NFPA 72-18.3.2, page 101, 2007-7.3.2.1, page 61

### **2.2.1 – Read Plans**

1	A	Blueprint Reading Textbook
2	B	NTC Brown Book
3	A	Blueprint Reading Textbook
4	B	$60 \times 120 = 7200$ , $7200/900$ ( $30 \times 30$ ) = 8
5	A	NFPA 72-17.14.8, page 100 , 2007-5.13.8, page 46
6	A	Blueprint Reading Textbook
7	C	NTC Brown Book, page 9
8	D	NTC Brown Book, page 10
9	C	Blueprint Reading Textbook
10	A	Blueprint Reading Textbook

### **2.2.2 – Apply Installation Strategy On-Site**

1	C	NFPA 72-Table 27.6.3.2.2.3, page 149, 2007-Table 9.4.3.2.2.3, page 85
2	D	NFPA 72-26.3.7.2.1(2), page 131, 2007-8.3.7.2.1(2), page 68
3	A	NFPA 72-23.8.1.1. page 110 , 2007-6.8.1.1, page 50
4	D	NFPA 72-26 .3.3, page 130, 2007 - 8.3.3, page 66
5	D	NFPA 72-A.17.12.1 page 215, 2007-A.5.11.1, page 144
6	D	NFPA 72-24.5.1.8, page 126, 2007-6.9.9.7, page 52
7	A	NFPA 72-23.8.1.1, page 110, 2007-6.8.1.1, page 46
8	D	NFPA 72-3.3.240.5, page 29, 2007-6.13
9	C	NFPA 72-23.8.1.3.1.1(3), page 111, 2007-6.8.1.3.1.2, page 46
10	B	NFPA 72-10.11.2, page 37, 2007-4.4.3.2.2, page 26

### **2.2.3 – Accept Materials**

1	D	NTC Brown Book, page 121
2	D	Math Textbook
3	B	NTC Brown Book, page 414
4	A	NFPA 72-17.7.3.2.3.1, page 92, 2007-5.7.3.2.3.1, page 41
5	D	NFPA 70-Figure 760.154(d), page 631
6	D	---
7	A	Dictionary
8	B	---
9	D	NFPA 70-760.179(D), page 632
10	D	NTC Brown Book

### **2.2.4 – Properly Install Fire Alarm System Components**

1	A	NFPA 72-27.7.3.11, page 153, 2007 - 9.7.3.11, page 92
2	B	NFPA 72-27.5.5.1.1.6 page 147 2007 -9.5.3.1.1.6, page 88
3	D	NFPA 72-18.3.2.1, page 101 , 2007-7.3.2.1, page 61
4	C	NFPA 72-18.5.2.4, page 104, 2007-7.5.2.4, page 63
5	D	NFPA 70-760.31, page 578
6	A	NFPA 70-760.55(g), page 581
7	D	NFPA 70-760.55(F), page 581
8	B	NFPA 70-760.53, page 627
9	B	NFPA 70-70-Table 314.16(a), page 169
10	C	NFPA 70-70-Table C.3, page 715

### **2.2.5 – Start Up the System and Perform Acceptance Test**

- 1 A NTC Brown Book, page 403
- 2 A NFPA 70-Table 8, page 681
- 3 B NTC Brown Book, page 416
- 4 A NFPA 72-10.5.6.3.1, page 34, 2007-4.4.1.5.3,page 27
- 5 B NFPA 72-17.12, page 99 , 2007-5.11, page 45
- 6 C NFPA 72-10-16.6.3, page 38 , 2007-4.4.6.6.2, page 31
- 7 C NFPA 72-23-8.1.3.1.1(3), page 111, 2007-6.8.1.3.1.2, page 51
- 8 A NFPA 72-23.8.1.1, page 110, 2007-6.8.1.1, page 50
- 9 D NTC Brown Book, page 199
- 10 A NFPA 72-23.8.1.1, page 110, 2007-6.8.1.1, page 50

### **2.2.6 – Use Computer Applications to Program System**

- 1 C NFPA 72-27.6.3.2.3.1 page 149, 2007-9.4.3.2.3.1, page 85
- 2 A NFPA 72-23-8.5.4.2, page 113, 2007-6.8.5.4.2, page 53
- 3 B NFPA 72-14.4.5.3.3, page 75 , 2007- 10.4.3.2.3, page 88
- 4 C NFPA 72-A.14.6.2.4(9), page 198, 2007-A.10.9.6.2.3(9), page 177
- 5 D NFPA 72-14.4.1.2.1.3, page 55 , 2007-10.4.1.2.1.3, page 95
- 6 C NFPA 72-26.6.3.3.2.1 page 137 2007-8.6.3.5.1, page 79
- 7 C NFPA 72-26.6.3.2.1.4.b.3, page 138, 2007 - 8.6.3.2.1.4.b.3, page 75
- 8 C NFPA 72-10.18.2.3, page 40 , 2007-4.5.2.3, page 32
- 9 C NFPA 72-23.8.1.2 & 23.8.1.3, page 110-111, 2007-6.8.1.2 & 6.8.1.3, page 50
- 10 C NFPA 72-14.4.1.2.1.4(2), page 58 , 2007-10.4.1.2.1.4(2), page 95

### **2.2.7 – Troubleshoot System**

- 1 B NFPA 17.16.2.2 1 (2), page 100, 2007-5.15.2.2, page 46
- 2 B NFPA 72-14.4.7, page 76, 2007-10.4.6, page 100
- 3 D NFPA 72-14.4.2.2, page 66 , 2007-10.4.4.2,page 95
- 4 C NFPA 72-23.16.4, page 115 , 2007-6.14.3, page 53
- 5 B NFPA 72-72-17.16.1.2, page 100, 2007-5.15.1.2, page 46
- 6 A NFPA 72-12.3.4, page 54 , 2007-6.15.2.4, page 54
- 7 D NFPA 72-10.17.1.1, page 38, 2007-4.4.7.1, page 28
- 8 A NFPA 72-10.17.1, page 38, 2007-4.4.7.1, page 28
- 9 C NFPA 72-10.17.1.8, page 39, 2007.4.4.7.1.7, page 29
- 10 D NTC Brown Book, page 416

### **2.2.8 – Identify and Report On-Site Scheduling Conflicts**

- 1 C NFPA 72, Chapter 2
- 2 B NFPA 72-21.2.4, page 106, 2007-6.16.2.2, page 58
- 3 A NFPA 72-21.4.1, page 108, 2007-6.16.4.1, page 59
- 4 B NFPA 72-21.3.2, page 107, 2007-6.16.3.2, page 58
- 5 D NFPA 72-17.7.5, page 94-95, 2007-5.16, page 46-47
- 6 D NFPA 72-21.8.4, page 108, 2007-6.16.6.4, page 59
- 7 A NTC Brown Book, page 14
- 8 B NFPA 72-17.4.5.6.3,page 95 , 2007-5.16.6.2, page 47
- 9 C NFPA 72-17.16.1.3, page 100, 2007-5.15.1.3, page 46
- 10 D NFPA 72-21.4.3, page 108 , 2007-6.16.4.3,page 59

### **2.2.9 – Perform System Commissioning**

1	D	NTC Brown Book, page 14
2	E	NFPA 72 Record of Completion
3	D	NFPA 72-10.18.2.3, page 40, 2007-4.5.2.3, page 32
4	C	NFPA 72-10.18.2.3, page 40, 2007-4.5.2.3, page 32
5	A	NFPA 72-10.18.2.1.2.5,page 40, 2007-4.5.2.1.3, page 32
6	D	NFPA 72-A.14.6.2.4(9), page 198, 2007-A.10.6.2.3(9), page 177
7	D	NFPA 72-26.5.4.4 pg 135 2007 - 8.5.3.4, pg 72
8	C	NFPA 72-Table 27.6.3.2.2.3, page 149, 2007-Table 9.4.3.2.2.3,page 85
9	C	NFPA 72-27.6.2.1.10, page 148, 2007-9.4.2.1.10, page 83
10	B	NPFA 72-10-5.7.2, page 34, 2007-4.4.1.6.2, page 27

### **2.2.10 – Compile Test Completion Data**

1	B	NFPA 72-14.4.3, page 58, 2007-10.4.3, page 95
2	A	NFPA 72-Table 14.3.1, page 56 , 2007-Table 10.3.1, page 93
3	B & C	NFPA 72-14.2.3.1, page 55, 2007-10.2.3.1, page 92
4	A	NFPA 72-14.2.1.2.3, page 54 , 2007-10.2.1.2.3, page 92
5	C	NFPA 72-Table 14.4.2.2, page 59, 2007-10.4.2.2, page 96
6	A	NFPA 72-17.6.3.1.1, page 91, 2007-5.6.5.1, page 40
7	C	NFPA 72-14.4.6,page 76, 2007-10.4.5,page 109
8	A	NFPA 72-14.4.8.1, page 76, 2007-10.4.7, page 109
9	A	NFPA 72-Table 18.5.4.3.1(a), page 104, 2007-7.5.4.3.1(a), page 64
10	C	NFPA 72-14.2.5, page 55, 2007-10.2.5, page 93

### **2.2.11 – Create As-Builts**

1	D	NTC Brown Book, page 382
2	B	NFPA 72-14.6.1.1,page 77, 2007-10.6.1.1, page 100
3	B	NTC Brown Book, page 16
4	D	NTC Brown Book, page 384
5	C	NTC Brown Book, page 16
6	D	NFPA 72-10-18.2.1.1, page 42, 2007-4.5.2.1, page 33
7	A	NTC Brown Book, page 385
8	B	NFPA 72-14.6.1.1,page 77 , 2007-10.6.1.1, page 100
9	A & C	NFPA 72-10.18.2.3, page 40 , 2007-4.5.2.3, page 32
10	D	NFPA 72-3.3.215, page 28 , 2007-3.3.155, page 23

### **2.2.12 – Train Customer/End User**

1	D	---
2	C	---
3	B	---
4	B	NFPA 72-10.16.6.3.1, page 38, 2007-4.4.6.3, page 30
5	D	---
6	A & C	NFPA 72-23.8.1.3.1, page 111, 2007-6.8.1.3.1.2, page 51
7	C	---
8	B	---
9	C	---
10	D	---

### **2.2.13 – Apply Fire Stopping Practice**

- |    |   |   |
|----|---|---|
| 1  | B | International Firestop Council (www.Firestop.org) |
| 2  | A | International Firestop Council (www.Firestop.org) |
| 3  | D | NFPA 72, chapter 10                               |
| 4  | A | International Firestop Council (www.Firestop.org) |
| 5  | B | International Firestop Council (www.Firestop.org) |
| 6  | D | NTC Brown Book, page 391                          |
| 7  | B | International Firestop Council (www.Firestop.org) |
| 8  | C | International Firestop Council (www.Firestop.org) |
| 9  | A | International Building Code (IBC)                 |
| 10 | B | International Firestop Council (www.Firestop.org) |

### **2.2.14 – Ensure Worksite Safety**

- |    |   |                       |
|----|---|-----------------------|
| 1  | C | OSHA 29 CFR Part 1910 |
| 2  | B | OSHA 29 CFR Part 1910 |
| 3  | A | OSHA 29 CFR Part 1910 |
| 4  | C | OSHA 29 CFR Part 1910 |
| 5  | B | OSHA 29 CFR Part 1910 |
| 6  | A | OSHA 29 CFR Part 1910 |
| 7  | B | OSHA 29 CFR Part 1910 |
| 8  | D | OSHA 29 CFR Part 1910 |
| 9  | B | OSHA 29 CFR Part 1910 |
| 10 | D | OSHA 29 CFR Part 1910 |

### **2.3.1 – Follow Applicable Maintenance Standards and Procedures**

- |    |       |  |
|----|-------|--|
| 1  | E     | NFPA 72-A.10.19, page 169, 2007-A.4.6, page 131        |
| 2  | C & D | NFPA 70-Table 770.50, page 585                         |
| 3  | B     | NFPA 70-760.31(f), page 579                            |
| 4  | B     | NFPA 72- 10.19.1, page 53 , 2007-4.6.1, page 38        |
| 5  | D     | NFPA 70-760.56, page 581                               |
| 6  | D     | NFPA 72-14.2.1.2.3, page 54 , 2007-10.2.1.2, page 92   |
| 7  | B     | NFPA 70-760.3, page 575                                |
| 8  | B     | NFPA 70-760.9, page 576                                |
| 9  | C     | NFPA 72-14.2.1.2.3, page 54 , 2007-10.2.1.2.3, page 92 |
| 10 | B     | NFPA 72-10.19.2,page 53 , 2007-4.6.2, page 38          |

### **2.3.2 – Troubleshoot and Repair System Faults**

- |    |       |   |
|----|-------|---|
| 1  | A     | Basic Metering  |
| 2  | D     | ---   |
| 3  | C     | Basic Metering  |
| 4  | B     | Basic Metering  |
| 5  | A     | NFPA 72-18.4.3.1, page 102, 2007-7.4.2.1, page 62         |
| 6  | A & B | Basic Metering  |
| 7  | B     | NFPA 72-10.12.8.1(4), page 37, 2007-4.4.3.5.8(d), page 29 |
| 8  | B     | NFPA 72-10.17.2.1.1, page 39, 2007-4.4.7.2.1, page 31     |
| 9  | A & B | NFPA 72-10.5.5.2, page 34, 2007-4.4.1.4.2, page 26        |
| 10 | C     | NFPA 72-10.11, page 37, 2007-4.4.3.2, page 28             |

### **2.3.3 – Document Procedures**

1	C	Grey Literature International Steering Committee (www.GLISC.info)
2	E	Grey Literature International Steering Committee (www.GLISC.info)
3	B	Grey Literature International Steering Committee (www.GLISC.info)
4	D	NFPA 72, chapter 3
5	A	NFPA 72, chapter 3
6	E	Grey Literature International Steering Committee (www.GLISC.info)
7	A	Grey Literature International Steering Committee (www.GLISC.info)
8	B	Grey Literature International Steering Committee (www.GLISC.info)
9	A & C	Grey Literature International Steering Committee (www.GLISC.info)
10	A	Grey Literature International Steering Committee (www.GLISC.info)

### **2.4.1 – Train and Mentor Level I Co-Workers**

1	A	NTC Brown Book, page 386
2	C	NFPA 72-17-14-7, page 100, 2007-5.13.4, page 45
3	B	NFPA 72-18.4.3.1, page 102, 2007-7.4.2.1, page 62
4	C	NFPA 72-Table 18.5.4.3.1(b), page 104, 2007-7.5.4.3.1(b), page 64
5	D	NFPA 70-760.154, page 630
6	C	NTC Brown Book, page 78
7	C	NFPA 72-3.3.215, 2007-3.3.155
8	D	Construction Textbook
9	A	NTC Brown Book, page 13
10	A & D	NFPA 101 & International Building Code (IBC)

### **2.5.1 – Manage Simultaneous Projects On-Site**

1	C	Project Management Textbook
2	B	Project Management Textbook
3	D	Project Management Textbook
4	B	OSHA 29 CFR Part 1910
5	E	OSHA 29 CFR Part 1910
6	C	OSHA 29 CFR Part 1910
7	A	OSHA 29 CFR Part 1910
8	C	OSHA 29 CFR Part 1910
9	B	NTC Brown Book, page 16
10	A	OSHA 29 CFR Part 1910

### **2.5.2 – Manage On-Site Manpower**

1	B	Project Management Textbook
2	B	Project Management Textbook
3	D	Project Management Textbook
4	A	Project Management Textbook
5	B	NFPA 72-3.2.7, page 19, 2007-3.2.7, page 16
6	A	Project Management Textbook
7	D	Project Management Textbook
8	B	Project Management Textbook
9	C	Project Management Textbook
10	E	Project Management Textbook

### **2.5.3 – Oversee Technical Aspects of Job On-Site**

- |    |       |   |
|----|-------|---|
| 1  | B     | computers   |
| 2  | A & B | computers   |
| 3  | B     | computers   |
| 4  | D     | NFPA 72-14.4.1.2.1.4(1), page 58, 2007-10-4.1.2.1.4(1), page 95 |
| 5  | A     | NFPA 72-14.4.1.2.1.4(2), page 58, 2007-10-4.1.2.1.4(2), page 95 |
| 6  | B     | NFPA 70   |
| 7  | A     | NFPA 72-17.4.9, page 89, 2007-5.16.5.9, page 47                 |
| 8  | B     | NFPA 72-17.7.5.6.3, page 95, 2007-5.16.6.3, page 47             |
| 9  | D     | NFPA 72-21.9.5, page 109, 6.16.7.2, page 59                     |
| 10 | C     | NTC Brown Book, page 414  |

### **2.5.4 – Identify and Report Personnel Issues**

- |    |   |                       |
|----|---|-----------------------|
| 1  | A | OSHA 29 CFR Part 1910 |
| 2  | C | OSHA 29 CFR Part 1910 |
| 3  | D | First Aid Textbook    |
| 4  | B | First Aid Textbook    |
| 5  | C | First Aid Textbook    |
| 6  | D | OSHA 29 CFR Part 1910 |
| 7  | C | OSHA 29 CFR Part 1910 |
| 8  | C | OSHA 29 CFR Part 1910 |
| 9  | C | OSHA 29 CFR Part 1910 |
| 10 | C | OSHA 29 CFR Part 1910 |

### **2.5.5 – Observe Rules Promoting Safe Work Environment**

- |    |   |                       |
|----|---|-----------------------|
| 1  | B | OSHA 29 CFR part 1910 |
| 2  | C | OSHA 29 CFR part 1910 |
| 3  | D | OSHA 29 CFR part 1910 |
| 4  | A | OSHA 29 CFR part 1910 |
| 5  | D | OSHA 29 CFR part 1910 |
| 6  | B | OSHA 29 CFR part 1910 |
| 7  | A | OSHA 29 CFR part 1910 |
| 8  | D | OSHA 29 CFR part 1910 |
| 9  | D | OSHA 29 CFR part 1910 |
| 10 | B | OSHA 29 CFR part 1910 |

## Level III

### **3.1.1 Analyze Project Requirements And Determine If They Meet The Subject**

1	B	NFPA 72-4.4.1.5.3(a), page 27
2	D	NFPA 101-14.3.4.1.2, page 142
3	A	NFPA 101-20.3.4.3, page 190
4	A	NFPA 101-32.3.3.4.7, page 249
5	E	NFPA 72-Table 5.7.1.8, page 138
6	D	IBC-907.2.4, page 183
7	D	NFPA 72 -5.7.1.8, page 41
8	B	NFPA 72-5.7.3.2.3, page 41
9	A	IBC-308-.3, page 33
10	C	IBC-907-2.11.2, page 186

### **3.1.2 Review And Implement Contractual Criteria**

1	C	NFPA 72-Table 5.7.1.8, page 138
2	B	NFPA 101 - 30.3.4.5.2, page 237
3	C	NFPA 72-5.7.3.2.4.2(3), page 41
4	D	NFPA 72-5.7.3.2.4.2(3), page 41
5	A	NFPA 72-A.5.7.3.4, page 140
6	D	NFPA 72-Table 7.4.5.3.1(b), page 64
7	D	NFPA 72-5.7.3.2.3.1, page 41
8	C	Construction Textbook
9	A	NFPA 72-6.16.5.2, page 59
10	B	NFPA 72-Table 7.5.4.3.1(a), page 64

### **3.1.3 Coordinate With Client**

1	E	NFPA 72-B.2.2.2.3, page 189
2	B	NFPA 72-A.5.7.1.10, page 137
3	D	NFPA 72-7.4.1.2, page 61
4	E	NFPA 72-B.2.2.2.1, page 189
5	C	NFPA 72-A7.9, page 163
6	B	NFPA 72-B.2.2.5.2, page 191
7	C	NFPA 72-4.5.1.1, page 32
8	D	NFPA 72-4.5.2.4.1, page 32
9	B	NFPA 72 - 4.5.2.3, page 32
10	C	NFPA 72-A.8.3.4.2(2), page 164

### **3.1.4 Coordinate With Design Professionals**

- |    |   |  |
|----|---|--|
| 1  | A | NTC Brown Book, page 10  |
| 2  | C | NFPA 72-3.3.2, page 15   |
| 3  | C | NFPA 72-3.3.2, page 15   |
| 4  | B | Contractors Guide to Business, Law, and Project Management, page 9-2 |
| 5  | D | Contractors Guide to Business, Law, and Project Management, page 9-2 |
| 6  | B | Construction Textbook  |
| 7  | A | Construction Textbook  |
| 8  | D | Construction Textbook  |
| 9  | A | Construction Textbook  |
| 10 | D | Construction Textbook  |

### **3.1.5 Identify Site Conditions**

- |    |   |  |
|----|---|--|
| 1  | C | NFPA 72-6.8.4.11, page 53              |
| 2  | B | IBC-306.2, page 24                     |
| 3  | E | NFPA 70-Table 760.154(d), page 631     |
| 4  | A | NFPA 101-3.3.239, page 34              |
| 5  | C | NFPA 70-760.179(g), page 633           |
| 6  | C | NFPA 72-10.2.1.2.3, page 92            |
| 7  | C | NFPA 72-Table B.2.3.2.6.2(a), page 196 |
| 8  | B | IBC-303.1-exception, page 23           |
| 9  | B | NFPA 72-Table B.2.3.2.3.6, page 194    |
| 10 | C | NFPA 101-39.3.4, page 284              |

### **3.1.6 Identify AHJ Or Other Authority**

- |    |   |                          |
|----|---|--------------------------|
| 1  | C | NTC Brown Book, page 288 |
| 2  | C | NTC Brown Book, page 284 |
| 3  | B | NTC Brown Book, page 286 |
| 4  | D | NTC Brown Book, page 280 |
| 5  | A | NTC Brown Book, page 284 |
| 6  | A | NTC Brown Book, page 286 |
| 7  | B | NTC Brown Book, page 285 |
| 8  | D | NTC Brown Book, page 283 |
| 9  | C | NTC Brown Book, page 283 |
| 10 | B | NTC Brown Book, page 286 |

### **3.1.7 Create Shop Drawing**

- |    |   |                                     |
|----|---|-------------------------------------|
| 1  | D | NFPA 72-Table 7.5.4.3.1(a), page 64 |
| 2  | B | NTC Brown Book, page 14             |
| 3  | A | NFPA 72-3.3.24, page 5              |
| 4  | D | NFPA 101-9.6.2.7, page 86           |
| 5  | B | NTC Brown Book, page 14             |
| 6  | A | NFPA 72-Table 5.6.5.5.1, page 37    |
| 7  | D | NFPA 72-5.7.1.8, page 41            |
| 8  | B | per diagram                         |
| 9  | B | per diagram                         |
| 10 | B | NFPA 72-6.8.5.1.2, page 49          |

### **3.1.8 Calculate Power/Battery And Other Requirements**

1	A	Electronics Textbook
2	A	Electronics Textbook
3	B	NTC Brown Book, page 178
4	C	NTC Brown Book, page 414
5	B	NTC Brown Book, page 158
6	A	NTC Brown Book, page 411
7	A	NTC Brown Book, page 399
8	D	NTC Brown Book, page 178
9	A	Electronics Textbook
10	B	Electronics Textbook

### **3.1.9 Read Specifications And Drawings**

1	B	per diagram
2	B	per diagram
3	B	per diagram
4	C	per diagram
5	C	per diagram
6	D	NFPA 72-5.16.6.3, page 47
7	A	NFPA 72-11.3.3(2), page 114
8	A	NFPA 72-4.4.5, exception #1, page 30
9	A	IBC-907-2.2, page 182
10	C	NFPA 101-23.3.4.1.2, page 215

### **3.1.10 Research Codes And Standards**

1	B	NTC Brown Book, page 288
2	A	NTC Brown Book, page 293
3	A	NTC Brown Book, page 290
4	D	NTC Brown Book, page 291
5	D	NFPA 72-6.16.3.6, page 58
6	B	NFPA 72-6.16.3.12, page 58
7	A	NTC Brown Book, page 292
8	D	NTC Brown Book, page 293
9	C	NTC Brown Book, page 292
10	C	NTC Brown Book, page 292

### **3.1.11 Draft Written/Technical Reports**

1	D	NTC Brown Book, page 79
2	A	NTC Brown Book, page 80
3	B	Science Textbook
4	A	Science Textbook
5	A	NTC Brown Book, page 305
6	B	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
7	C	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
8	B	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
9	D	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
10	A	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )

### **3.1.12 Contract And Legal Duties**

1	A	Contractors Guide to Business, Law, and Project Management, page 2-4
2	B	Contractors Guide to Business, Law, and Project Management, page 7-2
3	C	Contractors Guide to Business, Law, and Project Management, page 3-5
4	B	Contractors Guide to Business, Law, and Project Management, page 7-5
5	E	Contractors Guide to Business, Law, and Project Management, page 7-3
6	D	Contractors Guide to Business, Law, and Project Management, page 7-5
7	B	Contractors Guide to Business, Law, and Project Management, page 7-5
8	B	Contractors Guide to Business, Law, and Project Management, page 7-3
9	D	Contractors Guide to Business, Law, and Project Management, page 7-5
10	C	Contractors Guide to Business, Law, and Project Management, page 7-5

### **3.1.13 Create Project Schedule**

1	C	Contractors Guide to Business, Law, and Project Management, page 7-8
2	D	Contractors Guide to Business, Law, and Project Management, page 7-8
3	B	Contractors Guide to Business, Law, and Project Management, page 7-11
4	D	Contractors Guide to Business, Law, and Project Management, Chapter 8
5	A	Contractors Guide to Business, Law, and Project Management, page 8-6
6	B	Contractors Guide to Business, Law, and Project Management, page 8-4
7	C	Contractors Guide to Business, Law, and Project Management, page 8-7
8	B	Contractors Guide to Business, Law, and Project Management, page 8-11
9	D	Contractors Guide to Business, Law, and Project Management, page 8-11
10	D	Contractors Guide to Business, Law, and Project Management, Chapter 11

### **3.2.1 Develop Installation Strategy**

1	C	NFPA 72-1.2.3, page 14
2	D	NFPA 72-5.13.6, page 46
3	A	NFPA 72-3.2.3, page 15
4	E	NFPA 72-1.5.1, page 14
5	D	NFPA 72-6.16.4.3, page 59
6	B	NFPA 72-3.2.2, page 15
7	D	NFPA 72-8.5.3.4, page 72
8	B	NFPA 72-3.2.2, page 15
9	D	NTC Brown Book, page 80
10	C	NFPA 72-3.3.113.1.2, page 21

### **3.2.2 Order Materials**

1	C	---
2	B	---
3	A	---
4	D	---
5	C	---
6	A	---
7	C	---
8	B	---
9	D	---
10	C	---

### **3.2.3 Establish Guidelines For Fire Alarm System Components**

1	C	NFPA 72-5.11.3, page 45
2	C	NFPA 70-760.1, page 625
3	A	NFPA 72-7.4.3.1, page 62
4	C	NFPA 70-392.2, page 229
5	C	NFPA 72-7.4.2,page 156
6	A	NFPA 70-760.139(a), page 630
7	D	NFPA 72-3.2.5, page 16
8	D	NFPA 72-Figure A.5.4.7(a), page 132
9	C	NFPA 72-chapter 1, page 14
10	C	NFPA 72-Figure A.5.4.7(a), page 132

### **3.2.4 Select Computer Applications To Program System**

1	A	NTC Brown Book, page 204
2	B	NFPA 72-4.5.2.3(3), page 32
3	C	NFPA 72-4.4.2, page 28
4	D	NFPA 72-10.4.1.2.1.4, page 95
5	C	NFPA 72-4.4.7.2.2, page 31
6	D	NFPA 72-10.4.1.2.1.4, page 95
7	C	NFPA 4.4.2,page 28
8	D	NFPA 72-10.4.1.2.2, page 95
9	A	NTC Brown Book, page 199
10	D	NFPA 72-A.6.2.2.2, page 147

### **3.2.5 Resolve On-Site Scheduling Conflicts**

1	D	Contractors Guide to Business, Law, and Project Management, page 8-6
2	B	Contractors Guide to Business, Law, and Project Management, page 8-5
3	D	Contractors Guide to Business, Law, and Project Management, page 8-7
4	A	Contractors Guide to Business, Law, and Project Management, page 8-6
5	C	---
6	A	---
7	C	Contractors Guide to Business, Law, and Project Management, page 7-8
8	A	Contractors Guide to Business, Law, and Project Management, page 7-8
9	D	Contractors Guide to Business, Law, and Project Management, page 8-6
10	D	Contractors Guide to Business, Law, and Project Management, page 8-6

### **3.2.6 Establish Procedures For System Commissioning**

1	B	NFPA 72-4.5.1.4, page 32
2	A	NFPA 72-Table 10.3.1, page 93
3	B	NFPA 72-4.5.2.1, page 72
4	B	NFPA 72-10.4.2.2(3), page 95
5	D	NFPA 72-4.5.2.1, page 32
6	E	NFPA 72-10.4.2.2(5), page 96
7	A	NFPA 72-10.4.1.2, page 95
8	E	NFPA 72-10.4.2.2(6), page 97
9	C	NFPA 72-Table 10.4.4, page 106
10	B	NFPA 72-Table 4.2.2, page 101

### **3.2.7 Document Test Completion**

- |    |   |                                   |
|----|---|-----------------------------------|
| 1  | C | NFPA 72-4.5.3.1, page 32          |
| 2  | B | NFPA 72-A.4.5.1.1, page 125       |
| 3  | D | NFPA 72 - Figure 4.5.2.1, page 36 |
| 4  | B | NFPA 72-A.4.5.1.1, page 125       |
| 5  | A | NFPA 72-4.5.3.3, page 32          |
| 6  | E | NFPA 72-A.4.5.1.1, page 125       |
| 7  | B | NFPA 72-4.5.1.3, page 32          |
| 8  | A | NFPA 72-A.4.5.1.1, page 125       |
| 9  | C | NFPA 72-10.6.4, page 114          |
| 10 | B | NFPA 72-10.6.2.3, page 109        |

### **3.2.8 Direct Creation Of As-Builts**

- |    |   |  |
|----|---|--|
| 1  | C | NFPA 72-4.5.2.3, page 32   |
| 2  | C | NFPA 72-4.5.2.3, page 32   |
| 3  | D | NFPA 72-3.3.155, page 23   |
| 4  | A | NFPA 72-4.5.2.3, page 32   |
| 5  | A | Contractors Guide to Business, Law, and Project Management, page 7-8 |
| 6  | B | NTC Brown Book, page 16  |
| 7  | D | NTC Brown Book, page 16  |
| 8  | D | NTC Brown Book, page 16  |
| 9  | A | NTC Brown Book, page 16  |
| 10 | B | NTC Brown Book, page 16  |

### **3.2.9 Identify Fire-Stopping Requirements**

- |    |   |   |
|----|---|---|
| 1  | B | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |
| 2  | C | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |
| 3  | A | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |
| 4  | D | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |
| 5  | D | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |
| 6  | A | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |
| 7  | B | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |
| 8  | D | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |
| 9  | C | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |
| 10 | B | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |

### **3.2.10 Supervise Worksite Safety**

- |    |   |  |
|----|---|--|
| 1  | B | Contractors Guide to Business, Law, and Project Management, chapter 11 |
| 2  | D | Contractors Guide to Business, Law, and Project Management, page 11-2  |
| 3  | B | Contractors Guide to Business, Law, and Project Management, page 11-3  |
| 4  | D | Contractors Guide to Business, Law, and Project Management, page 11-3  |
| 5  | D | Contractors Guide to Business, Law, and Project Management, page 11-3  |
| 6  | A | Contractors Guide to Business, Law, and Project Management, page 11-4  |
| 7  | C | Contractors Guide to Business, Law, and Project Management, page 11-4  |
| 8  | A | Contractors Guide to Business, Law, and Project Management, page 11-4  |
| 9  | A | Contractors Guide to Business, Law, and Project Management, page 11-3  |
| 10 | C | Contractors Guide to Business, Law, and Project Management, page 11-4  |

### **3.2.11 Interface With Other Systems And Trades**

1	A	NFPA 72-6.16.2.2, page 58
2	D	NTC Brown Book, page 375
3	B	NTC Brown Book, page 365
4	B	NFPA 72-6.16.3.6, page 58
5	D	NFPA 72-6.8.3.1, page 52
6	D	NTC Brown Book, page 365-366
7	B	NFPA 72-6.16.4.3, page 59
8	B	NFPA 72-6.16.3.12.1(3), page 59
9	B	NFPA 72-6.8.5.8, page 54
10	B	NTC Brown Book, page 362

### **3.3.1 Establish Test Procedures And Standards**

1	A	NFPA 72-10.3.1, page 93
2	C	NFPA 72-4.4.1.8.1, page 27
3	D	NFPA 72-10.4.4, page 106
4	B	NFPA 72-10.4.2.2, page 99
5	A	NFPA 72-10.4.4, page 106
6	C	NFPA 72-10.4.2.2, page 101
7	B	NFPA 72-10.4.4, page 106
8	C	NFPA 72-10.4.2.2, page 104
9	C	NFPA 72-10.3.1, page 94
10	D	NFPA 72-10.4.2.2, page 104

### **3.3.2 Oversee Troubleshooting And Repairing Of System Faults**

1	B	---
2	C	---
3	E	---
4	A	---
5	C	NFPA 72-4.4.7, page 31
6	B	NFPA 72-5.15.1, page 46
7	D	NTC Brown Book, page 368
8	A	NTC Brown Book, page 155
9	D	NTC Brown Book, page 155
10	C	NFPA 72-5.6.4, page 40

### **3.4.1 Train And Mentor Level I And Level II Co-Workers**

1	D	NFPA 72-Table 5.6.5.5.1, page 40
2	B	NFPA 72-5.7.3.2.3.1, page 41
3	C	NFPA 72-4.3.1, page 26
4	D	NFPA 72-Table A.5.7.1.8, page 138
5	A	NFPA 72-9.4.2.3.10.1, page 84
6	C	Blueprint Textbook
7	D	---
8	A	---
9	C	NTC Brown Book, page 1
10	C	NFPA 72-Figure 4.5.2.1(11), page 36

### **3.4.2 Determine Staff Training Needs**

1	C	Electronics Textbook
2	B	NFPA 72-3.3.180,page 24
3	D	Basic Metering
4	B	Basic Metering
5	D	Basic Metering
6	D	Management Textbook
7	D	Management Textbook
8	C	Management Textbook
9	B	Management Textbook
10	C	Management Textbook

### **3.5.1 Manage Simultaneous Projects**

1	C	per diagram
2	B	per diagram
3	D	per diagram
4	D	per diagram
5	A	per diagram
6	D	per diagram
7	C	per diagram
8	D	per diagram
9	B	per diagram
10	C	per diagram

### **3.5.2 Manage Manpower**

1	C	---
2	B	---
3	D	---
4	B	---
5	C	---
6	D	---
7	A	---
8	B	---
9	C	---
10	A	---

### **3.5.3 Oversee Technical Aspects Of Job**

1	A	NFPA 72-4.4.1.5.3, page 27
2	D	NFPA 72-8.6.3.2.2.2, page 75
3	D	NFPA 72-8.3.7.5.1, page 68
4	D	NFPA 72-7.4.2.1, page 62
5	B	NTC Brown Book, page 142
6	B	NFPA 72-4.4.2, page 28
7	A	NFPA 72-Chapter 2
8	B	NFPA 72-8.6.3.2.13(3), page 74
9	A	NFPA 72-6.8.1.1, page 50
10	A	NFPA 72-6.17.2, page 60

### **3.5.4 Resolve Interpersonal Conflict**

1	D	Management Textbook
2	A	Management Textbook
3	B	Management Textbook
4	A	NFPA 72-5.13.6, page 46
5	D	NFPA 72-5.5.2.3, page 39
6	C	Management Textbook
7	A	Management Textbook
8	B	Management Textbook
9	D	Management Textbook
10	A	Management Textbook

### **3.5.5 Resolve Ethics Issues**

1	D	Business Textbook
2	A	Business Textbook
3	B	Business Textbook
4	C	Business Textbook
5	A	Business Textbook
6	B	Business Textbook
7	B	Business Textbook
8	B	Business Textbook
9	D	Business Textbook
10	A	Business Textbook

### **3.5.6 Oversee Adherence To Rules Promoting Safe Work Environment**

1	B	OSHA 29 CFR Part 1910
2	A	OSHA 29 CFR Part 1910
3	D	OSHA 29 CFR Part 1910
4	D	OSHA 29 CFR Part 1910
5	C	OSHA 29 CFR Part 1910
6	C	OSHA 29 CFR Part 1910
7	B	OSHA 29 CFR Part 1910
8	E	OSHA 29 CFR Part 1910
9	B	OSHA 29 CFR Part 1910
10	A	OSHA 29 CFR Part 1910

### **3.5.7 Monitor Adherence To Budgets**

1	B	Business Textbook
2	A	Business Textbook
3	A	Business Textbook
4	C	Desired Margin = Cost / (100% - Desired Margin %), 80,000 / (1.00 - .20), 80,000/(0.80)
5	C	Desired Margin = Cost / (100% - Desired Margin %), 80,000 / (1.00 - .20), 80,000/(0.80)
6	C	Actual Margin = (Sell - Cost) / (Sell), (60,000 - (45,000))/60,000, 15,000 / 60,000
7	B	20,000/80=250 hr, 40 X 250 = 10,000, plus 15,000 sub = 25,000 labor cost
8	D	Contractors Guide to Business, Law, and Project Management, page 7-6
9	A	Contractors Guide to Business, Law, and Project Management, page 7-8
10	A	Contractors Guide to Business, Law, and Project Management, page 7-8

## Level IV

### 4.1.1 Define Occupancy And Project Requirements

1	D	NFPA 72-A.5.7.5.2, page 140
2	C	NFPA 72-Table 9.4.3.2.2.3, page 85
3	D	NFPA 72-6.12.9, page 57
4	D	NFPA 72-6.8.5.5.2 & 5.6.2, page 53-54
5	B	NFPA 72-9.5.3.2, page 28
6	A	NFPA 72-6.12.7, page 57
7	A	NFPA 72-A.6.8.5.6, page 149
8	B	NFPA 72-5.16.6.5.3.1, page 48
9	B	NFPA 72-6.16.6.4, page 59
10	B	NFPA 72-6.16.6.2, page 59

### 4.1.2 Determine Or Approve Contractual Criteria

1	B	NFPA 72-5.7.1.8, page 41
2	B	NFPA 70-300.6(d), page 131
3	C	NFPA 70-300.6(a)(1), page 130
4	D	NFPA 72-5.4.3 & 7.3.4.2, page 38 & 61
5	B	NFPA 72-Table A.5.7.1.8, page 138
6	C	NFPA 70-300.6(a)-exception, page 130
7	A	NFPA 101-22.3.4.4.1, page 203
8	D	NFPA 72-4.3.1, page 26
9	C	NFPA 101-3.4.1.2, page 215
10	D	NFPA 72-4.4.4.1, page 30

### 4.1.3 Coordinate With Client Stakeholders

1	A	NFPA 72-Table B.2.3.2.3.6, page 194
2	A	NTC Brown Book, page 305
3	C	NFPA 72-B.2.3.2.4.2, page 194
4	C	NTC Brown Book, page 305
5	C	NFPA 72-Table B.2.3.2.6.2(a), page 196
6	E	NTC Brown Book, page 355
7	D	NFPA 72-Table B.3.2.5, page 202
8	D	NFPA 72-B.2.2.2, page 189
9	D	NFPA 72-5.7.5.3.3-exception, page 43
10	B	NTC Brown Book, page 307

#### **4.1.4 Coordinate With Design Stakeholders**

1	D	NFPA 72-3.2.5, page 16
2	D	NFPA 72-3.2.2, page 16
3	C	Contractors Guide to Business, Law, and Project Management, page 8-6
4	D	Construction Textbook
5	C	Contractors Guide to Business, Law, and Project Management, page 8-6
6	C	Contractors Guide to Business, Law, and Project Management, page 8-6
7	D	Contractors Guide to Business, Law, and Project Management, page 7-8
8	C	Contractors Guide to Business, Law, and Project Management, page 8-6
9	B	Construction Textbook
10	B	Contractors Guide to Business, Law, and Project Management, page 7-8

#### **4.1.5 Resolve Site Visit Findings**

1	C	NFPA 72-A.4.4.6, page 124
2	D	NFPA 72-5.16.5.9, page 47
3	B	NFPA 72-7.5.2.2, page 63
4	C	NFPA 72-Table A.4.4.3.1, page 123
5	A	NFPA 72-5.7.3.2.4.2(2), page 41
6	B	NFPA 72-7.5.4.5.1, page 65
7	D	NFPA 72-8.5.1.5, page 71
8	C	NFPA 72-4.4.3.7, page 29
9	D	NFPA 72-5.8.3.3.3, page 44
10	B	NFPA 72-A.5.16.4.2.2, page 145

#### **4.1.6 Confirm Identity Of AHJ Or Other Authority**

1	A	NFPA 72-A.3.2.2, page 120
2	C	NFPA 72-A3.2.2, page 120
3	A	NFPA 72-B.2.2.3, page 190
4	C	Contractors Guide to Business, Law, and Project Management, page 7-8
5	C	NFPA 72-Table 7.5.4.3.1(a), page 64
6	A	IBC-907-2.10.2-exception, page 185
7	C	NFPA 72-Figure 4.5.2.1, page 36
8	B	NFPA 72-5.5.2.1.4, page 39
9	D	NFPA 72-6.16.3.7, page 58
10	A	Contractors Guide to Business, Law, and Project Management, page 7-8

#### **4.1.7 Review And Approve Shop Drawing**

1	D	NFPA 72-6.16.5.3, page 59
2	B	NFPA 72-6.16.3.2, page 58
3	C	NFPA 72-7.8.2.2, page 65
4	C	NFPA 72-7.4.3.1, page 62
5	A	NTC Brown Book, page 164
6	C	NFPA 72-5.16.2.1, page 46
7	C	NFPA 72-5.16.6.5.1, page 47
8	D	NFPA 72-A.7.4.2.1, page 155
9	B	NFPA 72-5.8.3.11, page 44
10	D	NFPA 72-5.8.3.2.1, page 44

#### **4.1.8 Use Results Of Power/Battery Calculations And System Requirements**

1	A	NTC Brown Book, page 414
2	A	NFPA 72-4.4.7.1,page 31
3	B	NTC Brown Book, page 414
4	B	NTC Brown Book, page 414
5	A	NTC Brown Book, page 393
6	C	NTC Brown Book, page 404
7	A	NTC Brown Book, page 393
8	A	NTC Brown Book, page 414
9	A	NTC Brown Book, page 414
10	D	Electronics Textbook

#### **4.1.9 Read Specifications And Drawings**

1	B	NFPA 72-A.5.7.4.1,page 140
2	B	NFPA 72-5.7.3.2.4.2(1), page 41
3	C	NFPA 72-5.7.5.1.2, page 43
4	D	NFPA 72-5.15.4, page 46
5	A	NFPA 72-Figure A.5.6.5.1, page 136
6	C	NFPA 72-8.6.2.4.3, page 72
7	B	NFPA 72-7.3.3.2, page 61
8	B	NFPA 70-200.6, page 43
9	C	NFPA 72-5.7.6.3, page 43
10	B	NFPA 72-7.4.6.5, page 63

#### **4.1.10 Interpret Codes And Standards**

1	A	NFPA 72-3.3.89.3, page 21
2	B	NFPA 72-Figure A.5.6.5.1(g), page 136
3	D	NFPA 72-Table B.3.2.5, page 202
4	D	NFPA 72-5.7.3.8, page 43
5	C	NFPA 72-Table 5.6.5.5.1, page 40
6	C	NTC Brown Book, page 89
7	B	NFPA 72-A.5.8.2(2), page 142
8	D	NFPA 72-5.7.3.2.3, page 41
9	C	NFPA 72-4.4.3.5.6, page 29
10	D	NFPA 72-8.6.3.2.1.4(b)(3), page 75

#### **4.1.11 Write/Issue Technical Reports**

1	C	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
2	B	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
3	D	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
4	B	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
5	C	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
6	D	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
7	C	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
8	A	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
9	D	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
10	A	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )

#### **4.1.12 Confirm Legal Authority**

1	A	---
2	C	---
3	B	NFPA 70-701-.11(d), page 603
4	D	NTC Brown Book, page 289
5	A	NTC Brown Book, page 288
6	B	Contractors Guide to Business, Law, and Project Management, page 3-6
7	C	Contractors Guide to Business, Law, and Project Management, page 3-9
8	C	Contractors Guide to Business, Law, and Project Management, page 3-9
9	D	MSDS Sheet
10	C	Contractors Guide to Business, Law, and Project Management, page 11-7

#### **4.1.13 Approve Project Schedule**

1	B	Contractors Guide to Business, Law, and Project Management, page 8-6
2	D	Contractors Guide to Business, Law, and Project Management, page 3-8
3	A	Contractors Guide to Business, Law, and Project Management, page 7-3
4	C	Contractors Guide to Business, Law, and Project Management, page 7-3
5	B	Contractors Guide to Business, Law, and Project Management, page 7-3
6	B	Project Management Textbook
7	C	Project Management Textbook
8	A	Project Management Textbook
9	D	Project Management Textbook
10	A	Project Management Textbook

#### **4.2.1 Approve Installation Strategy**

1	C	NFPA 72-6.8.1.2, page 50
2	D	NFPA 72-6.8.5.4.3, page 53
3	D	NFPA 72-10.4.4, page 95
4	B	NFPA 72-5.7.1.1, page 41
5	C	NFPA 72-6.8.5.4.1(2), page 53
6	D	NFPA 72-Table 10.4.2.2, page 99
7	C	NFPA 72-6.8.1.2, page 50
8	A	NFPA 72-6.16.4.3, page 59
9	D	NFPA 72-10.4.7, page 109
10	C	NFPA 72-Table 10.4.4, page 108

#### **4.2.2 Approve Purchase Order**

1	D	NFPA 72-Table 7.5.4.3.1(b), page 64
2	B	NFPA 72-5.7.3.2.3.1, page 41
3	C	NFPA 72-Table 7.5.4.6.2, page 65
4	A	NFPA 72-5.13, page 45
5	D	NFPA 72-5.16.5.9, page 47
6	D	---
7	B	Contractors Guide to Business, Law, and Project Management, page 8-6
8	C	Contractors Guide to Business, Law, and Project Management, page 7-8
9	D	---
10	A	Construction Textbook

#### **4.2.3 Review Resolution Of On-Site Scheduling Conflicts**

1	D	Contractors Guide to Business, Law, and Project Management, page 3-7
2	A	Contractors Guide to Business, Law, and Project Management, page 3-8
3	B	Contractors Guide to Business, Law, and Project Management, page 3-8
4	C	Contractors Guide to Business, Law, and Project Management, page 3-8
5	C	Contractors Guide to Business, Law, and Project Management, page 3-4
6	A	Contractors Guide to Business, Law, and Project Management, page 3-4
7	D	Contractors Guide to Business, Law, and Project Management, page 7-4
8	C	Construction Textbook
9	A	Contractors Guide to Business, Law, and Project Management, page 7-5
10	C	Contractors Guide to Business, Law, and Project Management, page 7-5

#### **4.2.4 Develop Written Policies & Procedures For Conflicts**

1	A	Management Textbook
2	B	Management Textbook
3	C	Management Textbook
4	B	Management Textbook
5	D	Management Textbook
6	C	Management Textbook
7	A	Management Textbook
8	D	Management Textbook
9	B	Management Textbook
10	A	Management Textbook

#### **4.2.5 Review And Approve As-Builts**

1	B	NTC Brown Book, page 385
2	B	NFPA 72-4.5.2.3, page 32
3	C	NTC Brown Book, page 386
4	B	NFPA 72-10.6.1.3, page 109
5	A	NTC Brown Book, page 386
6	D	NFPA 72-10.6.1.1, page 109
7	C	NFPA 72-3.3.155, page 23
8	A	NFPA 72-3.3.155, page 23
9	A	NFPA 72-3.3.155, page 23
10	D	NFPA 72-3.3.155, page 23

#### **4.2.6 Create Schedule Of Work With Other Systems And Trades**

1	D	---
2	C	---
3	B	---
4	D	---
5	D	NFPA 72-6.16.5.3, page 59
6	A	---
7	E	---
8	C	---
9	C	---
10	A	---

#### **4.3.1 Troubleshoot And Repair Faults**

1	D	NFPA 72-5.7.1.8, page 41
2	A	NFPA 72-6.9.10.3, page 55
3	D	NFPA 72-6.12, page 57
4	D	NFPA 72-6.10.1.6, page 56
5	D	NTC Brown Book
6	B	NFPA 72-6.4.2.1.1,page 49
7	C	NFPA 70-760.138(f), page 630
8	D	NFPA 72-6.8.2.5,page 52
9	A	NFPA 72-6.9.10.4.2(1), page 55
10	C	NFPA 72-6.16.2.4-exception, page 58

#### **4.4.1 Train And Mentor Subordinates**

1	C	Contractors Guide to Business, Law, and Project Management, page 7-8
2	B	OSHA 29 CFR Part 1910
3	D	Contractors Guide to Business, Law, and Project Management, page 7-5
4	A	NFPA 72-3.2.2,page 15
5	D	NFPA 72-4.5.2.3, page 32
6	C	NFPA 72-3.3.180,page 24
7	D	---
8	A	NFPA 72-Table 5.6.5.5.1, page 40
9	B	IBC-303.1, page 23
10	A	NFPA 72-5.5.2.3.1, page 39

#### **4.4.2 Educate Staff**

1	A	Management Textbook
2	D	Management Textbook
3	C	---
4	B	---
5	C	---
6	D	---
7	B	---
8	D	Labor $\$200 \times 25\% = \$50$ , Training Cost $2000 / 50 = 40$ hours
9	B	$\$200 \times 2000 \text{ hrs} = \$400,000$ , $400,000 \times 25\% = \$100,000$
10	C	Management Textbook

#### **4.4.3 Present Information Verbally And In Writing**

1	A	Grammar Textbook
2	D	Grammar Textbook
3	B	Grammar Textbook
4	C	Grammar Textbook
5	A	Grammar Textbook
6	C	---
7	B	---
8	B	---
9	B	---
10	A	---

#### **4.4.4 Educate AHJs/Other Authorities**

1	A	NFPA 70-760.130(a)-exception 3, page 629
2	C	NTC Brown Book, page 65
3	B	NTC Brown Book, page 66
4	C	NFPA 72-3.3.43.12, page 18
5	D	NFPA 72-3.3.155, page 23
6	B	---
7	D	---
8	C	---
9	D	---
10	A	---

#### **4.4.5 Interpret Code Language To Laymen**

1	C	NFPA 72-3.3.53,page 18
2	B	NFPA 72-8.3.3,page 66
3	C	NFPA 72-5.7.3.2.3.1,page 41
4	A	NFPA 72-Table 10.4.2.2,page 99
5	B	---
6	D	---
7	D	NFPA 72-7.4.6.4,page 63
8	A	NFPA 72-7.4.6.5, page 63
9	C	NFPA 72-Figure 4.5.2.1, page 36
10	D	NFPA 72-3.2.2,page 15

#### **4.5.1 Oversee Management Of Simultaneous Projects**

1	B	---
2	D	---
3	B	---
4	D	---
5	C	---
6	A	---
7	D	---
8	B	---
9	A	Contractors Guide to Business, Law, and Project Management, page 7-8
10	C	NFPA 72-4.5.2.3, page 32

#### **4.5.2 Determine Manpower Requirements**

1	A	Project Management Textbook
2	E	Project Management Textbook
3	B	Project Management Textbook
4	C	---
5	D	---
6	C	---
7	B	---
8	C	---
9	D	---
10	A	---

#### **4.5.3 Review And Analyze A Bid Package**

1	B	Construction Textbook
2	A	Construction Textbook
3	C	Profit Margin = Cost / (100% - Desired Margin %), (15,305 + 25,205) / (100 - 20%), 40,510/80%
4	A	60 hr x \$200 = \$12,000, 25,205 - 12,000 = \$13,205
5	B	40 x \$200 (supervisor) + 80 x \$150 (technician) + 40 x \$100 (help) = \$24,000
6	D	Contractors Guide to Business, Law, and Project Management, page 10-3
7	A	Contractors Guide to Business, Law, and Project Management, page 10-2
8	C	Contractors Guide to Business, Law, and Project Management, page 10-6
9	D	Contractors Guide to Business, Law, and Project Management, page 10-7
10	B	Construction Textbook

#### **4.5.4 Oversee Technical Aspects Of Job**

1	D	---
2	B	---
3	D	---
4	C	---
5	B	Project Management Textbook
6	D	Project Management Textbook
7	C	Project Management Textbook
8	C	---
9	C	---
10	A	---

#### **4.5.5 Resolve Interpersonal Conflict**

1	B	Management Textbook
2	C	Management Textbook
3	D	Management Textbook
4	A	Management Textbook
5	D	Management Textbook
6	B	Management Textbook
7	C	Contractors Guide to Business, Law, and Project Management, page 10-9
8	D	Contractors Guide to Business, Law, and Project Management, page 10-11
9	A	Management Textbook
10	D	Contractors Guide to Business, Law, and Project Management, page 10-11

#### **4.5.6 Review And Document Resolution Ethics Issues**

1	E	Contractors Guide to Business, Law, and Project Management, page 10-8
2	A	Contractors Guide to Business, Law, and Project Management, page 10-7
3	C	Contractors Guide to Business, Law, and Project Management, page 10-7
4	B	Contractors Guide to Business, Law, and Project Management, page 10-7
5	D	Contractors Guide to Business, Law, and Project Management, page 10-7
6	E	Contractors Guide to Business, Law, and Project Management, page 10-11
7	B	Contractors Guide to Business, Law, and Project Management, page 10-10
8	C	Contractors Guide to Business, Law, and Project Management, page 10-11
9	D	Contractors Guide to Business, Law, and Project Management, page 10-10
10	B	Contractors Guide to Business, Law, and Project Management, page 10-10

#### **4.5.7 Create Policies To Ensure Safe Work Environment**

- 1 B OSHA 29 CFR Part 1910
- 2 C Contractors Guide to Business, Law, and Project Management, page 11-4
- 3 D Contractors Guide to Business, Law, and Project Management, page 11-7
- 4 A Contractors Guide to Business, Law, and Project Management, page 11-9
- 5 D Contractors Guide to Business, Law, and Project Management, page 11-10
- 6 D Contractors Guide to Business, Law, and Project Management, page 11-10
- 7 A Contractors Guide to Business, Law, and Project Management, page 11-10
- 8 B Contractors Guide to Business, Law, and Project Management, page 11-12
- 9 D Contractors Guide to Business, Law, and Project Management, page 11-14
- 10 E Contractors Guide to Business, Law, and Project Management, page 11-5

#### **4.5.8 Develop And Document Budgets**

- 1 B Construction Textbook
- 2 E Contractors Guide to Business, Law, and Project Management, page 6-4
- 3 B  $\$10,000 \text{ yr} / 100 \text{ hours} = \$100/\text{hr}$ ,  $5 \text{ hrs} \times \$100 = \$500$
- 4 C  $55 \times 10\% = 6$  (rounded),  $26 \times 10\% = 3$  (rounded),  $55 + 6 = 61$  smokes,  $26 + 3 = 29$  heats  
Mark Up = Cost x (100% + Mark Up %),  $(\$55 \text{ (smoke)} + \$25 \text{ (labor)}) \times 90 = 7200$ ,
- 5 B  $7200 \times 120\% = \$8640$
- 6 B Contractors Guide to Business, Law, and Project Management, page 6-6
- 7 C  $\$96,500 \text{ (total)} \times 30\% \text{ (release)} = \$28,950$
- 8 B ---
- 9 A Contractors Guide to Business, Law, and Project Management, page 7-5
- 10 C Contractors Guide to Business, Law, and Project Management, page 7-8