

## **2017 NTC Red Book CBT Level 1-4 Answer Key**

### **Referenced Codes**

<b>NFPA 72</b>	<b>2013</b> - National Fire Alarm & Signaling Code
<b>NFPA 70</b>	<b>2011</b> - National Electrical Code
<b>NFPA 101</b>	<b>2012</b> - Life Safety Code
<b>IBC</b>	<b>2012</b> - international Building Code

### **Level I**

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

1	B	NFPA 72	17.7.3.2.3.1 (1), pg 98
2	D	NFPA 72	17.14.5, pg 105
3	C	NFPA 72	18.4.8.1, pg 109
4	A	NFPA 72	17.6.3.5.2, pg 97
5	B	NFPA 72	A.17.7.4.1, pg 212
6	A	NFPA 72	17.7.5.6.5.1 (d), pg 101
7	D	NFPA 72	17.12.2, pg 105
8	B	NFPA 72	17.16.2.2.2 (b), pg 105
9	C	NFPA 72	17.7.3.6.8 (3), pg 99
10	D	NFPA 72	18.5.5.1, pg 109

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

1	C	NFPA 70	250.52 (a) (5), pg 112
2	A	NFPA 70	760.179 (b), pg 659
3	C	NFPA 70	Chapter 9, Table 8, pg 721
4	C	NFPA 70	Table 314.16 (a), pg 179
5	B	NFPA 70	760.154(d), pg 658
6	C	NFPA 70	760.121 (1), pg 655
7	A	NFPA 72	10.15.5.1, pg 72
8	D	NFPA 72	12.6.1, pg 74
9	B	NFPA 70	Table C.1, pg 745
10	B	NFPA 72	12.3.2., pg 73

#### **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	Table 14.4.3.2(17)(g)(1), pg 86
2	A	NFPA 72	10.3.5(1), pg 65
3	D	NFPA 72	12.6.2, pg 74
4	B	NFPA 72	14.4.8, pg 93
5	B	NFPA 72	14.2.2.3, pg 75
6	B	NTC	NTC Brown Book, pg 447
7	C	NTC	NTC Brown Book, pg 110
8	D	NFPA 72	14.3.6.3, pg 94
9	C	NFPA 72	Table 14.4.3.2(1)(g)(3), pg 86
10	B	NFPA 72	14-6.1.1, pg 93

## **Level II**

### **2.1.1 Apply Project Requirements to Known Occupancy Type**

1	B	IBC	Table 907.5.2.3.3, pg 224
2	B	IBC	907.2.3, ex 3, pg 217
3	C	IBC	907.2.1.1, pg 215
4	A	IBC	907.2.3 (1), pg 217
5	A	IBC	907.2.7, pg 218
6	A	IBC	907.29.1, pg 219
7	A	IBC	907.2.2.1, pg 216
8	C	IBC	907.2.6.2, pg 217
9	B	IBC	907.2.2 (1), pg 216
10	D	IBC	907.2.8.1 - 3, pg 218-219

### **2.1.2 - Apply Contractual Criteria to Projects**

1	D	---	Blueprint Reading Textbook
2	A	---	Blueprint Reading Textbook
3	B	NFPA 72	A.17.7.4.1, pg 212
4	B	NFPA 72	3.3.35, pg 20
5	C	NFPA 72	18.5.5.1, pg 109
6	A	NFPA 72	17.14.8.4, pg 105
7	B	NFPA 72	Table 17.6.3.5.1, pg 97
8	B	NFPA 72	18.4.3.1, pg 107
9	D	NFPA 72	17.7.3.2.1, pg 98
10	C	---	Construction Textbook

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

1	D	NFPA 72	Table 17.6.3.5.1, pg 97
2	B	NFPA 72	A.17.6.3.1.1 (g), pg 207
3	C	NFPA 72	23.8.5.6.2, pg 121
4	D	NFPA 72	17.7.3.2.4.2 (2) (b) (i), pg 98
5	C	NTC	Brown Book, page 258
6	D	NFPA 72	Table 18.5.5.4.1 (a), pg 110
7	B	NFPA 72	21.3.5, pg 114
8	C	NFPA 72	24.3.6.4.1, pg 125
9	C	NFPA 72	18.4.3.1, pg 107
10	A	NFPA 72	17.7.6.3.3.1, pg 102

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

1	E	IBC	907.1.2, pg 216
2	B	NTC	NTC Brown Book, pg 442
3	A	NFPA 72	29.6.4(3)(b), pg 164
4	D	NFPA 72	17.8.3.2.1, pg 103
5	C	NTC	NTC Brown Book, pg 442
6	A	NFPA 72	23.8.5.4.2, pg 120
7	A	NFPA 72	10.6.7.2.1, pg 67
8	A	NFPA 72	18.5.5.5.3, pg 111
9	C	NFPA 72	18.4.2.4, pg 107
10	A	NFPA 72	17.7.3.2.4.2(1), pg 98

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

1	A	NFPA 70	700.10(d)(1), pg 624
2	B	NFPA 70	701.12, pg 628
3	C	NFPA 72	10.6.11.6, pg 139
4	B	NFPA 72	27.5.2.5(), pg 153
5	C	NTC	NTC Brown Book, pg 154
6	C	NTC	NTC Brown Book, pg 461
7	A	NTC	NTC Brown Book, pg 464
8	B	NFPA 70	760.43,pg 653
9	D	NFPA 70	760.121(a)(3), pg 655
10	C	NFPA 72	10.6.5.2.1, pg 66

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

1	D	NFPA 72	3.2.2, pg 19
2	B	NFPA 72	3.2.4, pg 19
3	D	NFPA 72	17.4.9, pg 95
4	C	NFPA 72	Figure A.17.7.3.2.2, pg 211
5	E	NFPA 72	10.3.1, pg 65
6	C	NFPA 72	17.14.2, pg 195
7	B	NFPA 72	26.3.5.1, pg 139
8	C	NFPA 72	17.7.5.6.3, pg 100
9	D	NFPA 72	A.26.3.4.2, pg 251
10	D	NFPA 72	18.3.2, pg 106

### **2.2.1 – Read Plans**

1	A	---	Blueprint Reading Textbook
2	B	NTC	NTC Brown Book, pg 111
3	A	---	Blueprint Reading Textbook
4	B	NFPA 72	17.7.3.2.3.1(1), pg 98
5	A	NFPA 72	17.14.8.5, pg 105
6	A	---	Blueprint Reading Textbook
7	C	NFPA 72	7.2.1, pg 33
8	D	NTC	NTC Brown Book, pg 136
9	C	---	Blueprint Reading Textbook
10	A	---	Blueprint Reading Textbook

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

1	D	NFPA 70	760.179 (d), pg 659
2	C	NFPA 70	Chapter 9, Table 8, pg 721
3	B	NFPA 72	A.17.7.1.8, pg 209
4	B	NFPA 72	21.4.2, pg 115
5	B	NFPA 72	17.14.8.6, pg 108
6	B	NTC	Brown Book, pg 303
7	C	NFPA 72	17.7.3.2.3.1, pg 98
8	A	NFPA 72	23.8.1.3.1.1 (1), pg 118
9	D	NFPA 72	12.3.1, pg 73
10	B	NFPA 72	26.3.8.4 (1), pg 140

### **2.2.3 – Accept Materials**

1	D	NTC	NTC Brown Book, pg 258
2	D	---	---
3	B	NTC	NTC Brown Book, pg 464
4	D	NFPA 72	17.7.3.2.3.1, pg 98
5	D	NFPA 70	Figure 760.154(d), pg 658
6	D	---	---
7	A	---	Dictionary
8	B	---	---
9	D	NFPA 70	760.154(a), pg 657
10	D	NTC	NTC Brown Book

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

1	C	NTC	Brown Book, pg 457
2	D	NFPA 72	26.4.6.6.1, pg 143
3	B	NFPA 72	Table 17.6.2.1, pg 96
4	D	NFPA 70	358.30 (a), pg 219
5	D	NFPA 70	770.110 (a), pg 663
6	B	NFPA 72	26.5.2, pg 143
7	D	NFPA 72	18.5.5.7.3, pg 111
8	B	NFPA 72	10.6.7.2.1 (2), pg 67
9	C	NFPA 72	26.6.3.1.10, pg 145
10	C	NFPA 72	Figure A.17.6.3.1.1 (g), pg 207

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

1	A	NTC	NTC Brown Book, pg 448
2	A	NFPA 70	Ch 9, Table 8, pg 721
3	B	NTC	NTC Brown Book, pg 465
4	A	NFPA 72	10.6.7.2.1, pg 67
5	B	NFPA 72	17.12.1, pg 105
6	C	NFPA 72	10.18.5.3, pg 72
7	C	NFPA 72	23.8.1.3.1.1(3), pg 118
8	A	NFPA 72	23.8.1.1, pg 118
9	D	NFPA 72	3.3.132.1, pg 25
10	A	NFPA 72	23.8.1.1, pg 118

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

1	A	NFPA 72	23.8.5.9.1, pg 121
2	C	NFPA 72	10.13.2, pg 70
3	C	NFPA 72	14.4.2.4(2), pg 80
4	D	NFPA 72	23.8.5.5.2, pg 121
5	D	NFPA 72	17.12.2, pg 105
6	C	NFPA 72	17.16.2, pg 105
7	C	NFPA 72	17.16.1, pg 105
8	A	NFPA 72	21.9.1, pg 116
9	B	NFPA 72	23.8.1.3.1.1, pg 118
10	D	NFPA 72	10.12.6.2, pg 70

### **2.2.7 – Troubleshoot System**

1	A	NFPA 70	Table 8, pg 72
2	B	NFPA 72	14.4.7.1, pg 92
3	D	NFPA 72	14.4.3.2(4)(b), pg 81-82
4	C	NFPA 72	23.14.4, pg 123
5	B	NFPA 72	17.16.1.2, pg 105
6	C	NFPA 72	23.8.5.6.2, pg 121
7	D	NFPA 72	10.17.1, pg 72
8	D	NFPA 72	21.7.4, .1, .2, pg 116
9	C	NFPA 72	12.6.8, pg 75
10	A	NFPA 72	17.6.3.1.3.1, pg 96

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

1	A	NFPA 72	18.5.3.6, pg 109
2	D	NFPA 72	7.2.1, pg 33
3	D	NFPA 72	7.8.2, pg 37
4	D	NFPA 72	7.5.3, pg 35
5	D	NFPA 72	7.5.5, pg 35
6	A	NFPA 72	7.5.5.2, pg 35
7	B	NFPA 72	14.2.3.1, pg 76
8	B	NFPA 72	Fig A.17.6.3.1.1(g), pg 207
9	D	NFPA 72	17.14.8.4, pg 105
10	D	NFPA 72	23.8.3.2, pg 119

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

1	B	NFPA 72	14.4.3.3, pg 92
2	A	NFPA 72	Table 14.3.1(9)(a), pg 77
3	B	NFPA 72	14.2.4.1, pg 76
4	A	NFPA 72	10.21.1, pg 73
5	C	NFPA 72	Table 14.3.1(9), pg 77
6	A	NFPA 72	Figure 17.6.3.1.1(g), pg 207
7	C	NFPA 72	14.4.5, pg 92
8	A	NFPA 72	14.4.7.1, pg 92
9	A	NFPA 72	Table 18.5.5.4.1(a), pg 110
10	C	NFPA 72	14.2.6.5, pg 75

### **2.2.11 – Create As-Builts**

1	C	NTC	NTC Brown Book, pg 442
2	B	NFPA 72	14.6.1.1,pg 93
3	B	NTC	NTC Brown Book, pg 114
4	B	NTC	NTC Brown Book, pg 442
5	C	NTC	NTC Brown Book, pg 140
6	A	NFPA 72	7.8.2(a), pg 37
7	A	NTC	NTC Brown Book, pg 442
8	B	NFPA 72	14.6.1.1,pg 93
9	A & C	NFPA 72	7.5.3, pg 35
10	D	NFPA 72	3.3.232, pg 29

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

1	D	NFPA 72	A.7.5.3, pg 178
2	C	---	---
3	B	---	---
4	B	NFPA 72	10.18.3.1, pg 72
5	D	---	---
6	A & C	NFPA 72	23.8.1.3.1, pg 118
7	C	---	---
8	B	NFPA 72	14.2.3.1, pg 76
9	C	---	---
10	D	---	---

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

1	B	---	International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> )
2	A	---	International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> )
3	D	NFPA 72	7.8.2(a), pg 37
4	A	---	International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> )
5	B	---	International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> )
6	D	NFPA 70	Article 760
7	A	IBC	IBC, page 20
8	C	---	International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> )
9	A	---	International Building Code (2012)
10	B	---	International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> )

### **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.10.21, pg 195
2	C & D	NFPA 70	Table 770.179(a), pg 667
3	B	NFPA 70	760.176(f), pg 658
4	B	NFPA 70	10.21.1, pg 73
5	D	NFPA 70	760.139, pg 656
6	D	NFPA 72	14.2.2.3, pg 75
7	B	NFPA 70	760.25, pg 652
8	B	NFPA 70	250.112(i), pg 121
9	C	NFPA 72	14.2.2.2.3, pg 75
10	B	NFPA 72	10.2.1.2, pg 73

### **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, pg 107
6	A & B	---	Basic Metering
7	B	NFPA 72	10.15.9.2, pg 71
8	B	NFPA 72	10.19.1.3, pg 72
9	A & B	NFPA 72	10.6.5.2.1 & 2, pg 66
10	C	NFPA 72	10.14.3.1 & 2, pg 71

### **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	26.6.3.2.1, pg 146
5	A	NFPA 72	26.6.3.2.1.2, pg 146
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	NTC Brown Book, pg 443
2	C	NFPA 72	17.14.5, pg 105
3	B	NFPA 72	18.4.3.1, pg 107
4	C	NFPA 72	Table 18.5.4.3.1(b), pg 110
5	D	NFPA 70	760.154(a), pg 657
6	C	NFPA 72	3.3.269.2, pg 30
7	C	NFPA 72	3.3.232, pg 27
8	D	---	Construction Textbook
9	A	NTC	NTC Brown Book, pg 137
10	A & D	---	NFPA 101 & 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	NTC Brown Book, pg 140
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, pg 19
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	14.4.2.4(1), pg 80
5	A	NFPA 72	14.4.2.4(2), pg 80
6	B	NFPA 72	300.11, pg 141
7	A	NFPA 72	17.4.9, pg 95
8	B	NFPA 72	17.7.5.6.3, pg 100
9	D	NFPA 72	21.9.5, pg 116
10	C	NTC	NTC Brown Book, pg 314

### **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

**2.5.6 – Identify and Report On-Site Scheduling Conflicts**

1	C	NFPA 72	17.7.5.3.1, pg 100
2	B	NFPA 72	21.2.4, pg 113
3	A	NFPA 72	21.4.1, pg 114
4	B	NFPA 72	21.3.2, pg 114
5	D	NFPA 72	21.7.4 & 21.7.4.1, pg 116
6	D	NFPA 72	21.8.4, pg 116
7	A	NTC	NTC Brown Book, chapter 9
8	B	NFPA 72	17.7.5.6.3, pg 100
9	C	NFPA 72	17.16.1.1, pg 105
10	D	NFPA 72	21.4.3, pg 115

## **Level III**

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

1	B	NFPA 72	10.6.7..1(2 pg 67
2	D	NFPA 101	14.3.4.1.2, pg 161
3	A	NFPA 101	20.3.4.3,pg 220
4	A	NFPA 101	32.3.3.4.7, pg 285
5	E	NFPA 72	Table A.17.7.1.8, pg 209
6	D	IBC	907.2.4 (exception), pg 217
7	D	NFPA 72	2013 -17.7.1.8, pg 97
8	D	NFPA 72	17.7.3.2.3.1(1), pg 98
9	D	IBC	308.4.1, pg 48
10	A	IBC	907.2.12.2, pg 220

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

1	C	NFPA 72	Table A.17.7.1.8, pg 209
2	D	NFPA 101	30.3.4.2.2, pg 271
3	C	NFPA 72	17.7.3.2.4.2(1), pg 98
4	D	NFPA 72	17.7.3.2.4.2()(b)(ii), pg 98
5	A	NFPA 72	A.17.7.3.7, pg 213
6	D	NFPA 72	Table 18.5.5.4.1(b),pg 110
7	D	NFPA 72	Table 17.6.3.5.1, pg 97
8	B	NFPA 72	18.4.7.5, pg 109
9	A	IBC	907-2.13 (exception #1), pg 221
10	B	NFPA 72	Table 18.5.5.4.1(a), pg 110

### **3.1.3 Coordinate With Client**

1	E	NFPA 72	B.2.2.2.3, pg 279
2	B	NFPA 72	A.17.7.1.10, pg 209
3	D	NFPA 72	18.4.1.2, pg 107
4	E	NFPA 72	B.2.2.2.1, pg 272
5	C	NFPA 72	A.18.9, pg 230
6	B	NFPA 72	B.2.2.5.2, pg 274
7	C	NFPA 72	10.20.2, pg 73
8	D	NFPA 72	14.4.1, pg 80
9	B	NFPA 72	7.5.3, pg 35
10	C	NFPA 72	A.26.3.4.2(2), pg 251

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

1	A	NTC	NTC Brown Book, pg 10
2	C	NFPA 72	3.3.2, pg 19
3	C	NFPA 72	3.3.2, pg 19
4	B	---	Contractors Guide to Business, Law, and Project Management, pg 9-2
5	D	---	Contractors Guide to Business, Law, and Project Management, pg 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	23.8.4.9, pg 120
2	C	IBC	306.2, pg 43
3	E	NFPA 70	Table 760.154(d), pg 653
4	A	NFPA 101	3.3.270, pg 35
5	C	NFPA 70	760.179(g), pg 659
6	C	NFPA 72	14.2.2.2.3, pg 75
7	C	NFPA 72	Table B.2.3.2.6.2(a), pg 279
8	B	IBC	303.1-exception, pg 41
9	B	NFPA 72	Table B.2.3.2.3.6, pg 278
10	C	IBC	907.2.13, pg 221

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

1	C	NTC	NTC Brown Book, pg 116
2	C	NTC	NTC Brown Book, pg 139
3	A	NTC	NTC Brown Book, pg 139
4	B	NFPA 72	26.3.4.3, pg 139
5	B	NFPA 72	A.3.2.2, pg 169
6	A	NTC	NTC Brown Book, pg 116
7	A	NFPA 72	7.5.3, pg 35
8	C	NFPA 72	18.5.5.5.5, pg 111
9	E	NTC	NTC Brown Book, pg 140
10	D	NTC	NTC Brown Book, pg 135

### **3.1.7 Create Shop Drawing**

1	B	NFPA 72	Table 18.5.5.4.1(a), pg 110
2	B	NTC	NTC Brown Book, pg 14
3	A	NFPA 72	3.3.37.1, pg 20
4	D	NFPA 101	9.6.2, pg 100
5	B	NTC	NTC Brown Book, pg 14
6	B	NFPA 72	Table 17.6.3.5.1, pg 97
7	D	NFPA 72	17.7.1.8, pg 97
8	B	---	per diagram
9	B	---	per diagram
10	B	NFPA 72	23.8.5.1.2, pg 120

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

1	A	---	Electronics Textbook
2	A	---	Electronics Textbook
3	B	NTC	NTC Brown Book, pg 178
4	C	NTC	NTC Brown Book, pg 414
5	B	NTC	NTC Brown Book, pg 158
6	A	NTC	NTC Brown Book, pg 411
7	A	NTC	NTC Brown Book, pg 399
8	D	NTC	NTC Brown Book, pg 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	17.7.5.3.6, pg 100
7	C	NFPA 72	29.3.3, pg 162
8	A	NFPA 72	10.4.4, pg 65
9	B	IBC	907.2, pg 216
10	D	NFPA 101	22.3.4.3.1(2), pg 234

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

1	C	NFPA 101	Life Safety Code (NFPA 101)
2	A	NFPA 72	2.3.1, pg 18
3	A	NFPA 72	Chapter 2, pg 18
4	A	NFPA 72	Chapter 2, pg 18
5	B	NFPA 72	21.9, pg 116
6	D	IBC	International Building Code (IBC)
7	B	NFPA 72	National Fire Alarm and Signalling Code (NFPA 72)
8	D	NFPA 72	Chapter 2, pg 18
9	D	NFPA 72	Chapter 2, pg 18
10	D	NFPA 72	Chapter 2, pg 18

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

1	D	NTC	NTC Brown Book, pg 110
2	B	NTC	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
3	E	NFPA 72	Annex B
4	B	NFPA 72	National Fire Alarm and Signalling Code (NFPA 72)
5	B	NFPA 72	12.4, pg 74, 24.3.6, pg 125, and IBC 907-.2.13 or NFPA 101-11.8.4.1
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	A	---	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	E	---	Contractors Guide to Business, Law, and Project Management, pg 7-2
2	C	---	Contractors Guide to Business, Law, and Project Management, pg 7-5
3	B	---	Contractors Guide to Business, Law, and Project Management, pg 7-3
4	D	---	Contractors Guide to Business, Law, and Project Management, pg 7-5
5	A	---	---
6	B	NTC	NTC Brown Book, pg 258
7	E	---	---
8	D	NFPA 72	17.7.5.2.2.2 (b), pg 100
9	D	NFPA 70	760.154(d), pg 658
10	D	---	NICET.org

### **3.1.13 Create Project Schedule**

1	C	---	Contractors Guide to Business, Law, and Project Management, pg 7-8
2	D	---	Contractors Guide to Business, Law, and Project Management, pg 7-8
3	B	---	Contractors Guide to Business, Law, and Project Management, pg 7-11
4	D	---	Contractors Guide to Business, Law, and Project Management, Chapter 8
5	A	---	Contractors Guide to Business, Law, and Project Management, pg 8-6
6	B	---	Contractors Guide to Business, Law, and Project Management, pg 8-4
7	C	---	Contractors Guide to Business, Law, and Project Management, pg 8-7
8	B	---	Contractors Guide to Business, Law, and Project Management, pg 8-11
9	D	---	Contractors Guide to Business, Law, and Project Management, pg 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, pg 17
2	D	NFPA 72	17.14.8.4, pg 105
3	B	NFPA 72	21.3.5, pg 114
4	D	NFPA 72	29.7.2, 29.7.6.7, pg 165
5	D	NFPA 72	21.4.3, pg 116
6	B	NFPA 72	3.2.2, pg 19
7	D	NFPA 72	26.5.4.4, pg 144
8	B	NFPA 72	3.2.2, pg 19
9	D	NFPA 72	3.3.66.16, pg 22
10	C	NFPA 72	3.3.173.1.2, pg 27

### **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	17.12.3, pg 105
2	C	NFPA 70	760.1, pg 651
3	D	NFPA 72	18.4.1.2, pg 10
4	B	NFPA 70	300.4( e), pg 137
5	C	NFPA 72	A.18.4.3, pg 221
6	A	NFPA 70	760.139(a), pg 656
7	D	NFPA 72	3.2.5, pg 19
8	D	NFPA 72	Figure A.17.4.6(a), pg 203
9	C	NFPA 72	chapter 1, pg 17
10	C	NFPA 72	Figure A.17.4.6(a), pg 203

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

1	D	-	-
2	A	NFPA 72	26.6.3.2.1.4 (b), pg 146
3	D	NFPA 72	10.12.6.2, pg 70
4	B	NFPA 72	23.8.5.9.2, pg 121
5	A	NFPA 72	23.8.4.9, pg 120
6	C	NFPA 72	23.8.5.2.4 and 23.8.5.4.1, pg 120
7	B	NFPA 72	23.8.3.2, pg 119
8	A	NFPA 72	23.8.1.2.2.(2), pg 118
9	A	NFPA 72	10.7.2, pg 67
10	D	NFPA 72	23.8.5.9.1, pg 121

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

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

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

1	C	NFPA 72	14.4.4.3.3, pg 92
2	A	NFPA 72	A.14.6.1.2, pg 201
3	B	NFPA 72	7.5.6.2, pg 35
4	B	NFPA 72	10.6.7.2.1(2), pg 67
5	D	NFPA 72	7.5.6.3,pg 35
6	E	NFPA 72	Table 14.4.3.2(a), pg 83
7	A	NFPA 72	14.4.2.4, pg 80
8	B	NFPA 72	Table 14.4.3.(9)(a)(2), pg 83
9	C	NFPA 72	Table 14.3.1, pg78
10	B	NFPA 72	Table 14.4.3.2(17)(k), pg 87

### **3.2.7 Document Test Completion**

1	C	NFPA 72	14.6.2.1, pg 94
2	D	NTC	NTC Brown Book, pg 119
3	C	NFPA 72	Table 14.4.3.2, pg 85
4	E	NFPA 72	14.2.4.2, pg 76
5	A	NFPA 72	26.3.9.2, pg 141
6	E	NFPA 72	Table 14.4.3.2, pg 81
7	B	NFPA 72	14.4.4.3.3, pg 92
8	C	NFPA 72	14.4.4.3.2, pg 83
9	D	NFPA 72	14.4.2.4, pg 80
10	B	NFPA 72	14.4.7.1, pg 92

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

1	C	NFPA 72	7.5.3(2), pg 35
2	C	NFPA 72	7.5.3(1), pg35
3	D	NFPA 72	7.5.5.1, pg 35
4	A	NFPA 72	7.5.3, pg 35
5	A	---	Contractors Guide to Business, Law, and Project Management, pg 7-8
6	B	NTC	NTC Brown Book, pg 16
7	D	NTC	NTC Brown Book, pg 16
8	D	NTC	NTC Brown Book, pg 16
9	A	NTC	NTC Brown Book, pg 16
10	B	NTC	NTC Brown Book, pg 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, pg 11-2
3	B	---	Contractors Guide to Business, Law, and Project Management, pg 11-3
4	D	---	Contractors Guide to Business, Law, and Project Management, pg 11-3
5	D	---	Contractors Guide to Business, Law, and Project Management, pg 11-3
6	A	---	Contractors Guide to Business, Law, and Project Management, pg 11-4
7	C	---	Contractors Guide to Business, Law, and Project Management, pg 11-4
8	A	---	Contractors Guide to Business, Law, and Project Management, pg 11-4
9	A	---	Contractors Guide to Business, Law, and Project Management, pg 11-3
10	C	---	Contractors Guide to Business, Law, and Project Management, pg 11-4

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

1	A	NFPA 72	21.2.5, pg 113
2	D	NTC	NTC Brown Book, pg 375
3	B	NTC	NTC Brown Book, pg 365
4	B	NFPA 72	21.3.6, pg 114
5	D	NFPA 72	23.8.3.1, pg 119
6	D	NTC	NTC Brown Book, pg 365-366
7	B	NFPA 72	21.4.3, pg 115
8	B	NFPA 72	21.3.14.1(3), pg 114
9	B	NFPA 72	23.8.5.8.1, pg 121
10	B	NTC	NTC Brown Book, pg 362

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

1	A	NFPA 72	14.3.1(2)(b), pg 77
2	C	NFPA 72	10.6.10.1, pg 68
3	D	NFPA 72	Table 14.3.1(2)(a)(1), pg 77
4	B	NFPA 72	Table 14.4.3.2(17)(d)(3), pg 85
5	B	NFPA 72	Table 14.4.3.2(6), pg 83
6	C	NFPA 72	Table 14.4.3.2(22)(a), pg 88
7	B	NFPA 72	Table 14.4.3.2(9)(3), pg 84
8	A	NFPA 72	Table 14.4.3.2(27)(b), pg 89
9	C	NFPA 72	14.4.3.2(15)(d), pg 85
10	D	NFPA 72	Table 14.4.3.2(4)(d), pg 82

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

1	B	---	---
2	C	---	---
3	E	---	---
4	A	---	---
5	C	NFPA 72	3.3.57.1.4, pg 21
6	B	NFPA 72	17.16.1, pg 105
7	D	NTC	NTC Brown Book, pg 368
8	A	NTC	NTC Brown Book, pg 155
9	D	NTC	NTC Brown Book, pg 155
10	C	NFPA 72	17.6.2.3, pg 96

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

1	A	NFPA 72	Table 17.6.3.5.1, pg 97
2	B	NFPA 72	17.7.3.2.3.1, pg 98
3	A	IBC	907.2.1, pg 216
4	B	NFPA 72	Table A.17.7.1.8, pg 209
5	A	NFPA 70	Chapter 9, Table 8, pg 721
6	D	NFPA 72	Chapter 2, pg 18
7	B	---	---
8	A	NTC	NTC Brown Book, pg 258
9	D	NFPA 101	30.3.4.1, 30.4.5, 30.3.5.1, pg 271-272
10	B	NFPA 72	Figure 7.8.2(f), pg 47

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

1	C	---	Electronics Textbook
2	B	NFPA 72	3.3.268, pg 30
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	B	NFPA 72	24.3.8, pg 125
2	C	NTC, 72	NTC Brown Book, pg 303 and NFPA 72, Table A.18.4.3, pg 221
3	D	NFPA 72	17.7.3.2.4.2, pg 98
4	B	NFPA 72	17.6.3.5.2, pg 97
5	D	NFPA 72	17.6.3.4.2.1, pg 96
6	A	NFPA 72	10.6.7.2.1, pg 67
7	A	NFPA 72	17.7.3.2.1, pg 98
8	B	NFPA 72	18.5.5.6.1, pg 111
9	C	NTC	NTC Brown Book, pg 380 (ANSI A117.1)
10	B	NFPA 72	12.3.4, pg 74

### **3.5.4 Resolve Interpersonal Conflict**

1	D	---	Management Textbook
2	A	---	Management Textbook
3	B	---	Management Textbook
4	A	NFPA 72	17.14.8.4, pg 105
5	D	NFPA 72	17.5.3.3, pg 95
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, pg 7-6
9	A	---	Contractors Guide to Business, Law, and Project Management, pg 7-8
10	A	---	Contractors Guide to Business, Law, and Project Management, pg 7-8

## **Level IV**

### **4.1.1 Define Occupancy And Project Requirements**

1	B	IBC	303.1.1, pg 41
2	A	IBC	907.2.2.1, pg 216
3	B	IBC	308.4, pg 48
4	D	IBC	309.1, pg 49
5	D	IBC	310.4, pg 49
6	B	NFPA 101	16.3.4.5, pg 173
7	B	NFPA 101	3.3.188.7, pg 32
8	C	NFPA 101	6.1.8.1.5, pg 45
9	B	NFPA 101	36.1.2.2, pg 301
10	E	NFPA 101	42.3.4.1.2, pg 329

### **4.1.2 Determine Or Approve Contractual Criteria**

1	B	NFPA 72	17.7.1.8, pg 97
2	D	NFPA 72	10.4.4 (exception), pg 65
3	C	NFPA 72	18.4.7.2, pg 108
4	D	NFPA 72	17.4.2, pg 94 & 18.3.4.2, pg 106
5	B	NFPA 72	A.17.7.1.8, pg 209
6	C	NFPA 72	10.4.4, pg 65
7	A	NFPA 72	22.3.4.4.1, pg 234
8	D	NFPA 72	10.3.1, pg 65
9	C	IBC	907.4.2.5, pg 223
10	D	NFPA 72	10.3.5, pg 65

### **4.1.3 Coordinate With Client Stakeholders**

1	C	NFPA 72	17.7.3.2.4.2, pg 98
2	A	NFPA 72	Fig 7.8.2(a)(2), pg 37
3	B	NFPA 72	17.4.9, pg 95
4	C	NFPA 72	17.5.1, pg 95
5	B	NFPA 70	Article 760, pg pg 761
6	A	IBC	907.4.2.3, pg 223
7	A	NFPA 72	17.7.3.2.3.1(1), pg 98
8	B	NFPA 72	18.41.8.1, pg 109
9	D	---	---
10	D	IBC & 101	IBC-907.2.23, pg 217 and NFPA 101-16.3.4, pg 172

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

1	D	NFPA 72	Table 18.5.5.4.1(a), pg 110
2	A	NFPA 72	A.17.7.6.1.1 (g), pg 207
3	A	NFPA 72	10.6.7.2.1, pg 67
4	D	IBC	907.5.2.3.4, pg 224
5	B	NTC	NTC Brown Book, pg 303
6	B	NTC	NTC Brown Book, pg 321
7	A	NTC	NTC Brown Book, pg 258
8	B	NFPA 72	B.2.3.2.2.2, pg 276
9	B	NFPA 72	10.6.7.2.1(1), pg 67
10	C	IBC	907.5, pg 223

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

1	C	NFPA 72	A.10.18.5, pg 195
2	D	NFPA 72	17.4.9, pg 95
3	B	NFPA 72	18.5.3.2, pg 109
4	C	NFPA 72	Table A.10.12.2, pg 194
5	A	NFPA 72	3.3.37.3, pg 20
6	B	NFPA 72	18.5.5.6.1, pg 111
7	B	NFPA 72	17.14.5, pg 105
8	C	NFPA 72	10.13.2, pg 70
9	B	NFPA 72	A.17.7.5.4.2.2, pg 213
10	A	NFPA 72	18.5.5.5.5.5, pg 111

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

1	A	NFPA 72	A.3.2.2, pg 169
2	C	NFPA 72	A3.2.2, pg 169
3	A	NFPA 72	B.2.2.3, pg 273
4	C	---	Contractors Guide to Business, Law, and Project Management, pg 7-8
5	D	NFPA 72	Table 18.5.5.4.1(a), pg 110
6	A	IBC	907-2.11.4, pg 220
7	C	NFPA 72	Figure 7.8.2(f), pg 47
8	B	NFPA 72	17.5.3.1.4, pg 95
9	D	NFPA 72	21.3.6, pg 114
10	A	---	Contractors Guide to Business, Law, and Project Management, pg 7-8

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

1	D	NFPA 72	21.7.4 & 21.7.4.2, pg 116
2	D	NFPA 72	21.3.5, pg 114
3	A	NFPA 72	24.5.1.17, pg 134
4	A	NFPA 72	18.5.5.4.4, pg 111
5	B	NFPA 72	A.12.3.4, pg 74
6	B	NFPA 72	Table A.18.4.3, pg 221
7	D	NFPA 72	A.18.4.3.1, pg 222
8	B	NFPA 72	17.8.3.1.1, pg 103
9	D	NFPA 72	17.8.3.2.1, pg 103
10	C	NTC	NTC Brown Book, pg 116

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

1	A	NTC	NTC Brown Book, pg 414
2	A	NFPA 72	12.6.1, pg 74
3	B	NTC	NTC Brown Book, pg 414
4	B	NTC	NTC Brown Book, pg 414
5	A	NTC	NTC Brown Book, pg 393
6	C	NTC	NTC Brown Book, pg 404
7	A	NTC	NTC Brown Book, pg 393
8	A	NTC	NTC Brown Book, pg 414
9	A	NTC	NTC Brown Book, pg 414
10	D	---	Electronics Textbook

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

1	B	NFPA 72	A.17.7.4.1, pg 212
2	B	NFPA 72	17.7.3.2.4.2(1), pg 98
3	C	NFPA 72	17.7.6.1.2, pg 102
4	D	NFPA 72	17.16.4.1, pg 111
5	A	NFPA 72	Figure A 17.6.3.1.1(g), pg 207
6	C	NFPA 72	26.6.2.3.3, pg 145
7	B	NFPA 72	18.3.3.2, pg 106
8	B	NFPA 72	3.3.66.12, pg 22
9	C	NFPA 72	17.7.7.3, pg 103
10	B	NFPA 72	18.4.7.5, pg 109

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

1	A	NFPA 101	9.7.2.1, pg 105
2	D	NFPA 101	8.6.6, pg 95
3	B	NFPA 101	9.6.4, pg 102
4	A	IBC	907.4.2, pg 223
5	C	IBC	305.2, pg 42
6	A	IBC	304.1, pg 42
7	C	NFPA 72	A.26.2.1, pg 251
8	C	NFPA 72	7.5.5, pg 35
9	D	NFPA 72	A.3.3.91, pg 173
10	D	NFPA 72	3.3.102.2.1, pg 24 and 23.3.3.2, pg 117

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

1	B	---	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
2	B	---	---
3	B	---	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
4	D	NFPA 72	Chapter 3, Definitions
5	A	NFPA 72	Chapter 18, Notification Appliances
6	D	---	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
7	B	NFPA 72	Annex B, Engineering Guide for Automatic Fire Detector Spacing
8	D	---	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
9	A	---	Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> )
10	B	NFPA 72	7.2.1(1) ,pg 33

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

1	A	---	---
2	C	---	---
3	B	NFPA 70	701.12(d), pg 629
4	D	NTC	NTC Brown Book, pg 289
5	A	NTC	NTC Brown Book, pg 288
6	B	---	Contractors Guide to Business, Law, and Project Management, pg 3-6
7	C	---	Contractors Guide to Business, Law, and Project Management, pg 3-9
8	C	---	Contractors Guide to Business, Law, and Project Management, pg 3-9
9	D	---	MSDS Sheet
10	C	---	Contractors Guide to Business, Law, and Project Management, pg 11-7

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

1	B	---	Contractors Guide to Business, Law, and Project Management, pg 8-6
2	D	---	Contractors Guide to Business, Law, and Project Management, pg 3-8
3	A	---	Contractors Guide to Business, Law, and Project Management, pg 7-3
4	C	---	Contractors Guide to Business, Law, and Project Management, pg 7-3
5	B	---	Contractors Guide to Business, Law, and Project Management, pg 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	A	NFPA 72	23.8.2.5, PG 118
2	A	NFPA 72	23.8.1.3, PG 118
3	A	NFPA 70	Chapter 9, Table 8, pg 721
4	B	NTC	NTC Brown Book, page 154
5	A	NFPA 101	16.3.4.3.3, pg 173
6	A	NFPA 70	760.154(d), pg 658
7	A	NFPA 72	23.8.5.9.1. pg 121
8	B	NFPA 70	248.12, pg 205
9	A	---	---
10	A	---	---

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

1	D	NFPA 72	Table 18.5.5.4.1(b), pg 110
2	B	NFPA 72	17.7.3.2.3.1(1), pg 98
3	C	NFPA 72	Table 18.5.5.7.2, pg 111
4	A	IBC	907.2.3 (exception #3), pg 217
5	D	NFPA 72	17.4.9, pg 95
6	D	---	---
7	B	---	Contractors Guide to Business, Law, and Project Management, pg 8-6
8	C	---	Contractors Guide to Business, Law, and Project Management, pg 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, pg 3-7
2	A	---	Contractors Guide to Business, Law, and Project Management, pg 3-8
3	B	---	Contractors Guide to Business, Law, and Project Management, pg 3-8
4	C	---	Contractors Guide to Business, Law, and Project Management, pg 3-8
5	C	---	Contractors Guide to Business, Law, and Project Management, pg 3-4
6	A	---	Contractors Guide to Business, Law, and Project Management, pg 3-4
7	D	---	Contractors Guide to Business, Law, and Project Management, pg 7-4
8	C	---	Construction Textbook
9	A	---	Contractors Guide to Business, Law, and Project Management, pg 7-5
10	C	---	Contractors Guide to Business, Law, and Project Management, pg 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	NTC Brown Book, pg 442
2	B	NFPA 72	7.5.5.4, pg 35
3	C	NTC	NTC Brown Book, pg 442
4	B	NFPA 72	14.6.1.3, pg 94
5	A	NTC	NTC Brown Book, pg 443
6	D	NFPA 72	14.6.1.1, pg 93
7	C	NFPA 72	3.3.232, pg 29
8	A	NFPA 72	3.3.232, pg 29
9	A	NFPA 72	3.3.232, pg 29
10	D	NFPA 72	3.3.232, pg 29

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

1	D	---	---
2	C	---	---
3	B	---	---
4	D	---	---
5	D	NFPA 72	17.7.4.4, pg 100
6	A	---	---
7	E	---	---
8	C	---	---
9	C	---	---
10	A	---	---

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

1	B	NFPA 70	Chapter 9, Table 8, pg 721
2	A	---	---
3	E	NFPA 72	A.10.21.5, pg 195
4	B	NFPA 72	12.3.2, pg 72
5	E	NFPA 72	14.4.2.4, pg 76
6	E	NFPA 72	10.15.1, pg 71
7	A	---	---
8	B	NFPA 72	17.16.2.2.1, pg 105
9	B	NFPA 72	26.6.3.2.1.3(a), pg 146
10	A	---	---

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

1	D	NTC	NTC Brown Book, pg 14
2	B	NFPA 72	Table 17.6.3.5.1, pg 97
3	C	NFPA 72	18.5.5.1, pg 109
4	A	NFPA 72	17.5.3.3.2, pg 95
5	B	NFPA 72	12.3.1, pg 73
6	D	NFPA 72	17.7.3.2.3.1 (2), pg 98
7	C	NFPA 72	24.3.8, pg 125
8	D	NFPA 72	17.12.2, pg 105
9	A	NFPA 72	21.9.5, pg 116
10	A	NFPA 72	Table A.18.4.3, pg 221

#### **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 x 25% = \$50, Training Cost 2000 / 50 = 40 hours
9	B	---	\$200 x 2000 hrs = \$400,000, 400,000 x 25% = \$100,000
10	C	---	Management Textbook

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

1	D	NFPA 72	A.17.6.3.1.1, pg 204
2	D	NFPA 72	Annex B
3	D	NFPA 72	10.6.7.2, pg 67
4	A	IBC	International Building Code (IBC)
5	A	NTC	NTC Brown Book, pg 303
6	B	NFPA 72	17.7.5.6.5.1 (a), pg 101
7	D	NTC	NTC Brown Book, pg 327
8	C	NFPA 72	A.14.6.2.4, pg 201
9	D	NFPA 72	Annex B
10	B	NFPA 72	10.13.2, pg 70

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

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

**4.4.5 Interpret Code Language To Laymen**

1	C	NFPA 72	3.3.80, pg 23
2	B	NFPA 72	26.3.3(2), pg 139
3	C	NFPA 72	17.7.3.2.3.1, pg 98
4	A	NFPA 72	Table 14.4.3.2(1(4), pg 85
5	B	---	---
6	D	---	---
7	D	NFPA 72	18.4.7.4, pg 109
8	A	NFPA 72	18.4.7.4, pg 109
9	C	NFPA 72	Figure 7.8.2(f), pg 47
10	D	NFPA 72	3.2.2,pg 19

**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, pg 7-8
10	C	NFPA 72	7.5.3, pg 35

**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, pg 10-3
7	A	---	Contractors Guide to Business, Law, and Project Management, pg 10-2
8	C	---	Contractors Guide to Business, Law, and Project Management, pg 10-6
9	D	---	Contractors Guide to Business, Law, and Project Management, pg 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, pg 10-9
8	D	---	Contractors Guide to Business, Law, and Project Management, pg 10-11
9	A	---	Management Textbook
10	D	---	Contractors Guide to Business, Law, and Project Management, pg 10-11

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

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

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

1	B	---	Construction Textbook
2	E	---	Contractors Guide to Business, Law, and Project Management, pg 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
5	B	---	Mark Up = Cost x (100% + Mark Up %), $(\$55 \text{ (smoke)} + \$25 \text{ (labor)}) \times 90 = 7200$ , $7200 \times 120\% = \$8640$
6	B	---	Contractors Guide to Business, Law, and Project Management, pg 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, pg 7-5
10	C	---	Contractors Guide to Business, Law, and Project Management, pg 7-8

## Inspection and Testing of Fire Alarm Systems (ITF)

### Practical Exercise #1

1	C	NFPA 72	14.2.2.2.3, pg 75
2	A	NFPA 72	3.3.63, pg 21
3	D	NFPA 72	14.2.3, pg 76
4	C	NFPA 72	Table 14.3.1(9), pg 77
5	A	NFPA 72	Table 14.3.1(2), pg 77
6	C	NFPA 72	14.3.3, pg 80
7	D	NFPA 72	Table 14.4.3.1, pg 78
8	C	NFPA 72	Table 14.3.1(13), pg 78
9	C	NFPA 72	Table 14.3.1(30), pg 80
10	B	NFPA 72	Table 14.3.1(27) pg 79

### Practical Exercise #2

1	D	NFPA 72	Table 14.4.3.2(2), pg 81
2	C	NFPA 72	14.2.8.2, pg 76
3	D	NFPA 72	Table 14.4.3.2(15)(d), pg 85
4	C	NFPA 72	Table 14.4.3.2(9)(4), pg 84
5	B	NFPA 72	Table 14.4.3.2(17)(2), pg 85
6	D	NFPA 72	Table 14.4.3.2(23), pg 88
7	A	NFPA 72	Table 14.4.3.2(g)(1), pg 86
8	A	NFPA 72	14.4.2.4(2), pg 80
9	C	NFPA 72	14.4.4.3.3, pg 92
10	C	NFPA 72	14.6.2.2, pg 94

### Practical Exercise #3

1	C	NFPA 72	7.2.3, pg 33
2	A	NFPA 72	Figure 7.8.2(f), pg 47
3	D	NFPA 72	7.5.5.1, pg 35
4	B	NFPA 72	7.5.6.6.3, pg 35
5	D	NFPA 72	Figure 7.8.2(a), pg 37-38
6	C	NFPA 72	Figure 7.8.2(g), pg 51
7	A	NFPA 72	7.5.6.7.2, pg 36
8	B	NFPA 72	7.7.1.3, pg 36
9	C	NFPA 72	7.7..2.2, pg 36
10	C	NFPA 72	7.7.2.3, pg 36

### Practical Exercise #4

1	A	NFPA 72	10.3.1, pg 65
2	C	NFPA 72	14.5.4, pg 93
3	C	NFPA 72	A.17.14.7, pg 219
4	D	NFPA 72	10.6.5.2.1, pg 66; ROC-pg 38, ITM-pg 48
5	D	NFPA 72	18.4.8.1, pg 109
6	A	NFPA 72	18.5.5.1, pg 109
7	C	NFPA 72	10.6.7.2.1, pg 67
8	C	NFPA 72	10.6.7.2.1, pg 67
9	A	NFPA 72	3.3.269.3, pg 30
10	A	NFPA 72	17.6.3.1.3.1, pg 96

**Practical Exercise #5**

1	B	NFPA 72	29.3.3, pg 138
2	A	NFPA 72	3.3.12.3, pg 19
3	C	NFPA 72	17.16.1, pg 105
4	B	NFPA 72	3.3.57.1.4, pg 21
5	D	NFPA 72	10.18.5.2, pg 72
6	B	NFPA 72	23.8.5.5.2, pg 121
7	B	NFPA 72	10.3.3, pg 65
8	D	NFPA 72	7.5.3, pg 35
9	C	NFPA 72	3.3.66.19, pg 22
10	C	NFPA 72	18.5.5.4.6, pg 111

**Practical Exercise #6**

1	D	NFPA 72	17.7.3.2.3.1, pg 98
2	A	NFPA 72	17.5.2, pg 95
3	D	NFPA 72	17.7.3.2.4.(.), pg 98
4	B	NFPA 72	21.7.4, pg 116
5	D	NFPA 72	Table 17.7.6.3.3.2, pg 102
6	D	NFPA 72	17.12.2, pg 105
7	A	NFPA 72	17.14.8.3, pg 105
8	A	NFPA 72	17.16.1.2, pg 105
9	B	NFPA 72	10.21.4, pg 73
10	C	NFPA 72	17.7.5.6.3, pg 100

**Practical Exercise #7**

1	C	NFPA 72	17.7.3.2.4.2(2)(a), pg 98
2	A	NFPA 72	17.7.4.3, pg 100
3	A	NFPA 72	17.7.5.6.6.1, pg 102
4	C	NFPA 72	17.7.5.6.5.3(a), pg 101
5	D	NFPA 72	17.7.6.3.4, pg 103
6	D	NFPA 72	17.14.8.5, pg 105
7	D	NFPA 72	23.8.5.6.2, pg 121
8	B	NFPA 72	A.17.12.1, pg 219
9	D	NFPA 72	17.14.8.6, pg 108
10	C	NFPA 72	17.7.3.3, pg 99

**Practical Exercise #8**

1	B	NFPA 72	7.5.6.2, pg 35
2	B	NFPA 72	14.4.7.1, pg 92
3	D	NFPA 72	26.5.1., pg 143
4	B	NFPA 72	A.17.7.5.4.2.2, pg 213
5	A	NFPA 72	A.14.6.1.2, pg 201
6	B	NFPA 72	21.3.5, pg 114
7	D	NFPA 72	29.7.2 & 29.7.6.7, pg 165
8	D	NFPA 72	21.4.3, pg 116
9	D	NFPA 72	Table 18.5.5.4.1(b), pg 110
10	D	NFPA 72	Table 17.6.3.5.1, pg 97

**Practical Exercise #9**

1	B	NFPA 72	18.4.7.5, pg 109
2	D	NFPA 72	17.7.1.8, pg 97
3	D	NFPA 72	17.7.3.2.3.1(1), pg 97
4	C	NFPA 72	17.7.3.2.3.1(1), pg 97
5	C	NFPA 72	3.3.80, pg 23
6	B	NFPA 72	12.3.6, pg 74
7	D	NFPA 72	23.8.2.7, pg 119
8	A	NFPA 72	24.4.2.85.3, pg 127
9	C	NFPA 72	21.2.4, pg 1163
10	D	NFPA 72	24.5.1.6, pg 133

**Practical Exercise #10**

1	A	NFPA 72	17.14.5, pg 105
2	B	NFPA 72	18.4.8.1, pg 109
3	A	NFPA 72	10.6.7.2.1, pg 67
4	C	NFPA 72	3.3.269.2, pg 30
5	B	NFPA 72	A.3.3.66.18 pg 172
6	D	NFPA 72	3.3.283.2, pg 31
7	D	NFPA 72	A.17.7.1.8, pg 209
8	B	NFPA 72	3.3.57.1.4, pg 21
9	C	NFPA 72	17.7.3.2.4.(2)(b), pg 98
10	C	NFPA 72	17.7.5.6.5.1(A), pg 101

**Practical Exercise #11**

1	C	NFPA 72	17.7.5.6.5.3(a), pg 101
2	D	NFPA 72	Table 17.7.6.3.3.2, pg 102
3	A	NFPA 72	17.14.8.4, pg 105
4	B	NFPA 72	26.6.3.2.1.3, pg 46
5	B	NFPA 72	17.7.3.2.4.2(4), pg 98
6	D	NFPA 72	23.8.5.5.2, pg 121
7	A	NFPA 72	29.8.5.6.2, pg 121
8	D	NFPA 72	17.12.2, pg and 26.6.3.1.10, pg 145
9	B	NFPA 72	17.16.1.2, pg 105
10	C	NFPA 72	7.5.3(2), pg 35

**Practical Exercise #12**

1	D	NFPA 72	17.4.2, pg 94 & 18.3.4.2, pg 106
2	C	NFPA 72	10.6.10.1, pg 68
3	C	NFPA 72	18.4.4.1, pg 108
4	D	NFPA 72	Table 14.4.3.2(17)(d)(3), pg 85
5	D	NFPA 72	17.16.4.1, pg 111
6	B	NFPA 72	Table 14.4.3.2(6), pg 83
7	C	NFPA 72	17.7.4.3, pg 100
8	A	NFPA 72	Table 14.4.3.2()(b), pg 89
9	D	NFPA 72	A.18.4.3.1, pg 222
10	C	NFPA 72	Table 14.4.3.2(22)(a), pg 88