

## **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 393          |
| 7  | C | NTC     | NTC Brown Book, pg 14           |
| 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 | 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 121            |
| 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 381 |
| 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 384 |
| 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 179-181 |
| 6  | C | NTC     | NTC Brown Book, pg 407     |
| 7  | A | NTC     | NTC Brown Book, pg 414     |
| 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 | 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             |
| 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 | NTC     | NTC Brown Book, pg 9       |
| 8  | D | NTC     | NTC Brown Book, pg 10      |
| 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 143         |
| 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 121    |
| 2  | D | ---     | Math Textbook             |
| 3  | B | NTC     | NTC Brown Book, pg 414    |
| 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 178              |
| 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 403  |
| 2  | A | NFPA 70 | Ch 9, Table 8, pg 721   |
| 3  | B | NTC     | NTC Brown Book, pg 416  |
| 4  | A | NFPA 72 | 10.6.7.2.1, pg 67       |
| 5  | B | NFPA 72 | NPFA 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  | C | NFPA 72 | 27.6.3.2.3.1 pg 158      |
| 2  | A | NFPA 72 | 23-8.5.4.2, pg 120       |
| 3  | B | NFPA 72 | 14.4.4.3.3, pg 92        |
| 4  | C | NFPA 72 | A.14.6.2.4, pg 201       |
| 5  | D | NFPA 72 | 14.4.2.3, pg 80          |
| 6  | C | NFPA 72 | 26.6.3.3.2.1 pg 149      |
| 7  | C | NFPA 72 | 26.6.3.2.1.4.b.3, pg 147 |
| 8  | C | NFPA 72 | 7-5.3, pg 35             |
| 9  | B | NFPA 72 | 23.8.1.2.2(2), pg 118    |
| 10 | C | NFPA 72 | 14.4.2.4(2), pg 80       |

### **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 | 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  | D | NFPA 72 | 7.2, pg 33                     |
| 2  | E | NFPA 72 | NPPA 72-Figure 7.8.2(a), pg 39 |
| 3  | D | NFPA 72 | 7.5.3, pg 35                   |
| 4  | C | NFPA 72 | 7.5.3, pg 35                   |
| 5  | A | NFPA 72 | 7.5.5.4, pg 35                 |
| 6  | D | NFPA 72 | 7.2.1, pg 33                   |
| 7  | D | NFPA 72 | 26.5.4.4, pg 44                |
| 8  | C | NFPA 72 | Table 27.6.3.2.2.3, pg 158     |
| 9  | C | NFPA 72 | 27.6.2.1.10, pg 157            |
| 10 | B | NFPA 72 | NPPA 72-10.6.9.3, pg 68        |

### **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  | D     | NTC     | NTC Brown Book, pg 382 |
| 2  | B     | NFPA 72 | 14.6.1.1, pg 93        |
| 3  | B     | NTC     | NTC Brown Book, pg 16  |
| 4  | D     | NTC     | NTC Brown Book, pg 384 |
| 5  | C     | NTC     | NTC Brown Book, pg 16  |
| 6  | A     | NFPA 72 | 7.8.2(a), pg 37        |
| 7  | A     | NTC     | NTC Brown Book, pg 385 |
| 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 | NTC     | NTC Brown Book, pg 391  |
| 7  | B | ---     | International Firestop Council ( <a href="http://www.Firestop.org">www.Firestop.org</a> ) |
| 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 ( <a href="http://www.GLISC.info">www.GLISC.info</a> ) |
| 2  | E     | ---     | Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> ) |
| 3  | B     | ---     | Grey Literature International Steering Committee ( <a href="http://www.GLISC.info">www.GLISC.info</a> ) |
| 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 ( <a href="http://www.GLISC.info">www.GLISC.info</a> ) |
| 7  | A     | ---     | 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 & C | ---     | 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> ) |

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

|    |       |         |                             |
|----|-------|---------|-----------------------------|
| 1  | A     | NTC     | NTC Brown Book, pg 386      |
| 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 13       |
| 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 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, 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 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 |



**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 | 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 | 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 2          |
| 8  | B | NFPA 72 | 17.7.5.6.3, pg 100                 |
| 9  | C | NFPA 72 | NPFA 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 | C | IBC      | 907-2.11.2(4), pg 221       |

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

|    |   |          |                                 |
|----|---|----------|---------------------------------|
| 1  | C | NFPA 72  | Table A.17.7.1.8, pg 209        |
| 2  | B | NFPA 101 | 2012 - 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 212              |
| 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 288 |
| 2  | C | NTC | NTC Brown Book, pg 284 |
| 3  | B | NTC | NTC Brown Book, pg 286 |
| 4  | D | NTC | NTC Brown Book, pg 280 |
| 5  | A | NTC | NTC Brown Book, pg 284 |
| 6  | A | NTC | NTC Brown Book, pg 286 |
| 7  | B | NTC | NTC Brown Book, pg 285 |
| 8  | D | NTC | NTC Brown Book, pg 283 |
| 9  | C | NTC | NTC Brown Book, pg 283 |
| 10 | B | NTC | NTC Brown Book, pg 286 |

### **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  | B | NTC     | NTC Brown Book, pg 288 |
| 2  | A | NTC     | NTC Brown Book, pg 293 |
| 3  | A | NTC     | NTC Brown Book, pg 290 |
| 4  | D | NTC     | NTC Brown Book, pg 291 |
| 5  | D | NFPA 72 | 21.3.6, pg 114         |
| 6  | A | NFPA 72 | 21.3.14, pg 114        |
| 7  | A | NTC     | NTC Brown Book, pg 292 |
| 8  | D | NTC     | NTC Brown Book, pg 293 |
| 9  | C | NTC     | NTC Brown Book, pg 292 |
| 10 | C | NTC     | NTC Brown Book, pg 292 |

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

|    |   |     |   |
|----|---|-----|---|
| 1  | D | NTC | NTC Brown Book, pg 79   |
| 2  | A | NTC | NTC Brown Book, pg 80   |
| 3  | B | --- | Science Textbook  |
| 4  | A | --- | Science Textbook  |
| 5  | A | NTC | NTC Brown Book, pg 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, pg 2-4 |
| 2  | B | --- | Contractors Guide to Business, Law, and Project Management, pg 7-2 |
| 3  | C | --- | Contractors Guide to Business, Law, and Project Management, pg 3-5 |
| 4  | B | --- | Contractors Guide to Business, Law, and Project Management, pg 7-5 |
| 5  | E | --- | Contractors Guide to Business, Law, and Project Management, pg 7-3 |
| 6  | D | --- | Contractors Guide to Business, Law, and Project Management, pg 7-5 |
| 7  | B | --- | Contractors Guide to Business, Law, and Project Management, pg7-5  |
| 8  | B | --- | Contractors Guide to Business, Law, and Project Management, pg 7-3 |
| 9  | D | --- | Contractors Guide to Business, Law, and Project Management, pg 7-5 |
| 10 | C | --- | Contractors Guide to Business, Law, and Project Management, pg 7-5 |

### **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  | A | NTC     | NTC Brown Book, pg 204 |
| 2  | B | NFPA 72 | 7.5.3, pg 35           |
| 3  | C | NFPA 72 | 10.3.3, pg 65          |
| 4  | D | NFPA 72 | 14.4.2.4(1), pg 80     |
| 5  | C | NFPA 72 | 10.19.2.3, pg 72       |
| 6  | D | NFPA 72 | 14.4.2.4(2), pg 80     |
| 7  | C | NFPA 72 | 10.3.3, pg 65          |
| 8  | D | NFPA 72 | 14.4.2.5, pg 80        |
| 9  | A | NFPA 72 | 3.3.132.1, pg 25       |
| 10 | D | NFPA 72 | A.23.2.2.2, pg 234     |

### **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, pg 78           |
| 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 | NFPA 72 | 7.4.5, .6, & .7, pg 34-35     |
| 3  | D | NFPA 72 | 2013 - Figure 7.8.2(f), pg 47 |
| 4  | B | NFPA 72 | 7.4.5(5), pg 34               |
| 5  | A | NFPA 72 | 14.6.3, pg 94                 |
| 6  | E | NFPA 72 | 7.4.8, pg 35                  |
| 7  | B | NFPA 72 | 7.5.6.2, pg 35                |
| 8  | A | NFPA 72 | 3.3.255, pg 30                |
| 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  | D | NFPA 72 | 17.6.3.5.1, pg 96             |
| 2  | B | NFPA 72 | NFPA 72-17.7.3.2.3.(1), pg 98 |
| 3  | C | NFPA 72 | 10.3.2, pg 65                 |
| 4  | D | NFPA 72 | Table A.17.7.1.8, pg 209      |
| 5  | A | NFPA 72 | 27.6.6.11.1, pg 159           |
| 6  | C | ---     | Blueprint Textbook            |
| 7  | D | ---     | ---                           |
| 8  | A | ---     | ---                           |
| 9  | C | NTC     | NTC Brown Book, pg 1          |
| 10 | C | 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  | A | NFPA 72 | 10.6.7.2.1, pg 67         |
| 2  | D | NFPA 72 | 26.6.3.2.2.1( c), pg 147  |
| 3  | D | NFPA 72 | 26.3.8.5.1, pg 140        |
| 4  | D | NFPA 72 | 18.4.3.1, pg 107          |
| 5  | B | NFPA 72 | NTC Brown Book, pg 142    |
| 6  | B | NFPA 72 | 10.3.3, pg 65             |
| 7  | A | NFPA 72 | Chapter 2, pg 18          |
| 8  | B | NFPA 72 | 26.6.3.2.1.3 ( c), pg 146 |
| 9  | A | NFPA 72 | 10.12.1, pg 70            |
| 10 | A | NFPA 72 | 23.16.2, pg 123           |

### **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  | D | NFPA 72 | A.17.7.6.2, pg 215              |
| 2  | A | IBC     | 307.3, pg 45                    |
| 3  | D | NFPA 72 | 23.11.11, pg 122                |
| 4  | D | NFPA 72 | 23.8.5.5.2 & 23.8.5.6.2, pg 121 |
| 5  | B | NFPA 72 | 27.4.3.5(1), pg 152             |
| 6  | A | IBC     | 907.2.9.3, pg 219               |
| 7  | A | NFPA 72 | A.23.8.5.6, pg 236              |
| 8  | B | NFPA 72 | 17.7.5.6.5.1(a), pg 101         |
| 9  | B | NFPA 72 | 21.8.4, pg 116                  |
| 10 | B | NFPA 72 | 21.8.2 (exception), pg 116      |

### **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  | A | NFPA 72 | Table B.2.3.2.3.6, pg 278    |
| 2  | A | NTC     | NTC Brown Book, pg 305       |
| 3  | C | NFPA 72 | B.2.3.2.4.2, pg 277          |
| 4  | C | NTC     | NTC Brown Book, pg 305       |
| 5  | C | NFPA 72 | Table B.2.3.2.6.2(a), pg 279 |
| 6  | E | NTC     | NTC Brown Book, pg 355       |
| 7  | D | NFPA 72 | Table B.3.2.5, pg 286        |
| 8  | D | NFPA 72 | B.2.2.2, pg 272              |
| 9  | D | NFPA 72 | 17.7.6.3.3.3, pg 103         |
| 10 | B | NTC     | NTC Brown Book, pg 307       |

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

|    |   |         |  |
|----|---|---------|--|
| 1  | D | NFPA 72 | 3.2.5, pg 19   |
| 2  | D | NFPA 72 | 3.2.2, pg 19   |
| 3  | C | ---     | Contractors Guide to Business, Law, and Project Management, pg 8-6 |
| 4  | D | ---     | Construction Textbook  |
| 5  | C | ---     | Contractors Guide to Business, Law, and Project Management, pg 8-6 |
| 6  | C | ---     | Contractors Guide to Business, Law, and Project Management, pg 8-6 |
| 7  | D | ---     | Contractors Guide to Business, Law, and Project Management, pg 7-8 |
| 8  | C | ---     | Contractors Guide to Business, Law, and Project Management, pg 8-6 |
| 9  | B | ---     | Construction Textbook  |
| 10 | B | ---     | Contractors Guide to Business, Law, and Project Management, pg 7-8 |

#### **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 | 17.7.3.2.4.2(2)(b)(ii), pg 91        |
| 6  | B | NFPA 72 | 18.5.5.6.1, pg 111                   |
| 7  | D | NFPA 72 | 26.5.1.5, pg 143                     |
| 8  | D | NFPA 72 | 10.13.3 & 10.13.5 & 10.12.6.1, pg 70 |
| 9  | D | NFPA 72 | 17.8.3.3.3, pg 103                   |
| 10 | B | NFPA 72 | A.17.7.5.4.2.2, pg 213               |

#### **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, pg 116     |
| 2  | B | NFPA 72 | 21.3.2, pg 114     |
| 3  | C | NFPA 72 | 24.5.17, pg 134    |
| 4  | C | NFPA 72 | 18.4.4.1. pg 108   |
| 5  | A | NFPA 72 | 12.3.4, pg 78      |
| 6  | C | NFPA 72 | 17.7.4.3, pg 100   |
| 7  | C | NFPA 72 | 17.7.5.6.1, pg 100 |
| 8  | D | NFPA 72 | A.18.4.3.1, pg 222 |
| 9  | B | NFPA 72 | 17.8.3.1.1, pg 103 |
| 10 | D | NFPA 72 | 17.8.3.2.1, pg 103 |

#### **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 | 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 72 | 3.3.132.3, pg 25               |
| 2  | B | NFPA 72 | Figure A.17.6.3.1.1(g), pg 207 |
| 3  | D | NFPA 72 | Table B.3.2.5, pg 286          |
| 4  | D | NFPA 72 | 17.7.3.2.3.1(a), pg 98         |
| 5  | C | NFPA 72 | Table 17.6.3.5.1, pg 97        |
| 6  | C | NTC     | NTC Brown Book, pg 89          |
| 7  | B | NFPA 72 | A.17.8.2.1(2), pg 216          |
| 8  | D | NFPA 72 | 3.3.37.1, pg 20                |
| 9  | C | NFPA 72 | 10.15.1, pg 71                 |
| 10 | D | NFPA 72 | 26.6.3.2.1.4(b)(3), pg 147     |

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

|    |   |     |   |
|----|---|-----|---|
| 1  | C | --- | Grey Literature International Steering Committee (www.GLISC.info) |
| 2  | B | --- | Grey Literature International Steering Committee (www.GLISC.info) |
| 3  | D | --- | Grey Literature International Steering Committee (www.GLISC.info) |
| 4  | B | --- | Grey Literature International Steering Committee (www.GLISC.info) |
| 5  | C | --- | Grey Literature International Steering Committee (www.GLISC.info) |
| 6  | D | --- | Grey Literature International Steering Committee (www.GLISC.info) |
| 7  | C | --- | Grey Literature International Steering Committee (www.GLISC.info) |
| 8  | A | --- | Grey Literature International Steering Committee (www.GLISC.info) |
| 9  | D | --- | Grey Literature International Steering Committee (www.GLISC.info) |
| 10 | A | --- | Grey Literature International Steering Committee (www.GLISC.info) |

#### **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  | C | NFPA 72 | 23.8.1.2.2(2), pg 118            |
| 2  | D | NFPA 72 | 23.8.5.4.3, pg 120               |
| 3  | D | NFPA 72 | 14.4.4.3, pg 92                  |
| 4  | D | NFPA 72 | 17.7.1.11, pg 97                 |
| 5  | C | NFPA 72 | 23.8.5.4.1(2), pg 120            |
| 6  | D | NFPA 72 | Table 14.4.3.2.(17)(d)(2), pg 85 |
| 7  | C | NFPA 72 | 23.8.1.2(3)(a), pg 118           |
| 8  | A | NFPA 72 | 21.4.3, pg 115                   |
| 9  | D | NFPA 72 | 10.4.7, pg 92                    |
| 10 | C | NFPA 72 | Table 14.4.3.2(23), pg 88        |

#### **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 385 |
| 2  | B | NFPA 72 | 7.5.5.4, pg 35         |
| 3  | C | NTC     | NTC Brown Book, pg 386 |
| 4  | B | NFPA 72 | 14.6.1.3, pg 94        |
| 5  | A | NTC     | NTC Brown Book, pg 386 |
| 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  | C | NFPA 72 | 10.3.5(3), pg 65    |
| 2  | A | NFPA 72 | 24.4.2.8.4, pg 127  |
| 3  | D | NFPA 72 | 23.8.4.3, pg 120    |
| 4  | D | NFPA 72 | 24.5.1.6, pg 133    |
| 5  | D | NTC     | NTC Brown Book      |
| 6  | B | NFPA 72 | 12.3.1(2), pg 73    |
| 7  | C | NFPA 70 | 760.138(f), pg 656  |
| 8  | D | NFPA 72 | 23.8.2.7, pg 119    |
| 9  | A | NFPA 72 | 24.4..8.5.3, pg 127 |
| 10 | C | NFPA 72 | 21.2.4, pg 113      |

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

|    |   |         |  |
|----|---|---------|--|
| 1  | C | ---     | Contractors Guide to Business, Law, and Project Management, pg 7-8 |
| 2  | B | ---     | OSHA 29 CFR Part 1910  |
| 3  | D | ---     | Contractors Guide to Business, Law, and Project Management, pg 7-5 |
| 4  | A | NFPA 72 | 3.2.2, pg 19   |
| 5  | D | NFPA 72 | 7.5.3, pg 35   |
| 6  | C | NFPA 72 | 3.3.268, pg 30   |
| 7  | D | ---     | ---  |
| 8  | A | NFPA 72 | Table 17.6.3.5.1, pg 97  |
| 9  | B | IBC     | 303.3, pg 41   |
| 10 | A | NFPA 72 | 17.5.3.3.1, pg 95  |

#### **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 | --- | $\$200 \times 2000$ 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, 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 | NPFA 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     |