1. What is the purpose of a Burner Management System (BMS)?
   a. Prevent Boiler Explosions
   b. Prevent Boiler Implosions
   c. Prevent damage to equipment and injury
   d. All of the above

2. What is the standard(s) for the design of a boiler BMS?
   a. NFPA Series 8500
   b. NFPA 85
   c. NFPA 86 Series
   d. Pressure vessel codes

3. The BMS is the final control system to prevent an incident.
   a. True
   b. False

4. What is the most common cause of boiler explosions?
   a. Fuel rich condition in a boiler system
   b. Equipment failure
   c. Human error

5. What is the standard for ovens, furnaces?
   a. NFPA 85
   b. NFPA 86
   c. NFPA 87

6. The purge of a multiple burner boiler is complete after:
   a. 4 minutes
   b. 5 air changes
   c. 5 air changes for at least 5 minutes
   d. When the operator is ready to admit fuel

7. Re-purge of a multiple burner boiler is required after a:
   a. Loss of all flame
   b. Failure of the first igniter to ignite
   c. If an igniter is not ignited 10 seconds after purge is complete.
   d. All of the above
8. What is considered to be failsafe?
   a. Energize to trip
   b. De-energize to trip

9. The time to prove flame for heavy oil is less than the time to prove flame for light oil.
   a. True
   b. False

10. The ISA 61511 standard requires a PLC to be “safety certified” for BMS.
   a. True
   b. False
ES16 – Pre-Instructional Survey Answers

1. d
2. b
3. a. True
4. c
5. b
6. c
7. a
8. b
9. b. False, light oil requires a 10 sec proof time, heavy oil requires 15 sec.
10. False, ISA standards do not require the PLC to be certified, however it makes system verification a lot easier if it is.