

ES10 - Pre-Instructional Survey

Name: _____ Date: _____

1. A Class I hazardous area involves:
 - a. dusts
 - b. gases
 - c. fibers

2. A Class II hazardous area involves:
 - a. dusts
 - b. gases
 - c. fibers

3. The minimum concentration of a vapor in air that will burn is defined as:
 - a. autoignition limit
 - b. lower flammable limit
 - c. upper flammable limit

4. Flammable limits are effected by the pressure and temperature of the environment:
 - a. true
 - b. false

5. The following conditions are necessary for an explosion/fire to occur:
 - a. flammable gas/vapor present
 - b. proper proportion of oxidizer present
 - c. sufficient energy released
 - d. all of the above

6. Which Article of NFPA 70 (National Electrical Code) pertains to hazardous environments?
 - a. 256
 - b. 496
 - c. 500

7. Class II is divided into groups based on:
 - a. density
 - b. resistivity
 - c. dust type

8. An area is considered Division 1 if:
 - a. the material is explosive
 - b. ignitable concentrations exist frequently under normal conditions
 - c. motors are operated at elevated temperatures

9. When determining the classification of an area, the entire area contained within a building must be considered Division 1 if any portion of the area contains ignitable concentrations existing frequently under normal conditions.
 - a. true
 - b. false

10. In Class II Division 2 environment:
 - a. dust not normally present in sufficient quantities for ignition
 - b. accumulations not sufficient to interfere with heat dissipation
 - c. resistivity greater than 10,000 ohms
 - d. both a & c
 - e. both a & b

11. Intrinsically Safe equipment may only be used in:
 - a. Class I environment
 - b. Class II environment
 - c. "safe" environment
 - d. all of the above

12. Flameproof housings:
 - a. prevent flammable gases/dusts from entering
 - b. contain an explosion
 - c. prevent flame propagation and cool the gases as they escape
 - d. both a & b
 - e. both b & c

13. Seals should be used:
 - a. within 24" of the case
 - b. within 18" of the case
 - c. only on high power conduit
14. For the initial purge of a case:
 - a. a minimum of 4 case volume changes must pass through the case
 - b. a pressure of 0.1" water must be maintained within the case
 - c. the devices inside the case must be rated for the external environment's classification
15. Thermocouples are an example of:
 - a. an explosion proof device
 - b. an intrinsically safe device
 - c. a voltage source requiring a barrier
16. When evaluating an intrinsically safe system, you must consider:
 - a. the device characteristics
 - b. the barrier rating
 - c. cable characteristics
 - d. a & b
 - e. a & b & c
17. Non-incendive designed systems can be used in place of intrinsically safe systems.
 - a. true
 - b. false
18. Intrinsically safe system's wiring must be installed in conduit.
 - a. true
 - b. false
19. Type X Purging/Pressurization converts a Zone 1 to a Zone 2 area within the enclosure.
 - a. true
 - b. false
20. Static electricity does not carry sufficient current to cause a fire/explosion.
 - a. true
 - b. false

ES10 - Pre-Instructional Survey Answer Sheet

1. b. gases
2. a. dusts
3. b. lower flammable limit
4. a. true
5. d. all of the above
6. c. 500
7. c. dust type
8. b. ignitable concentrations exist frequently under normal conditions
9. b. false
10. e. both a & b
11. d. all of the above
12. e. both b & c
13. b. within 18" of the case
14. a. a minimum flow of 4 case volume changes must pass through the case
15. b. an intrinsically safe device
16. e. a & b & c (barrier device not necessarily present)
17. b. false
18. b. false
19. b. false
20. b. false