North Central Mine Rescue Contest: Wilmington, IL

April 3, 2013

Team Trainer Written Test

Team Trainer Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Team Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which section of the Federal Mine Safety and Health Act of 1977 implements provisions regarding: Every operator of an underground mine shall assure the availability of mine rescue capability for purposes of emergency rescue and recovery.
2. Section 110 (c)
3. Section 115 (e)
4. Section 104 (a)
5. Section 107 (a)
6. A person trained in the use and care of breathing apparatus shall inspect and test the apparatus at intervals not exceeding \_\_\_\_\_\_\_ days and shall certify by signature and date that the inspections and tests were done.
7. 20
8. 60
9. 90
10. 30
11. The wearing and use of the breathing apparatus by team members for a period of at least \_\_\_\_ hours while under oxygen every \_\_\_\_\_\_ months is required under Part 49.
12. 1 / 3
13. 2 / 4
14. 2 / 2
15. 3 / 2
16. A permanent bulkhead is usually built of canvas brattice cloth, plastic and sometimes wood.
17. True
18. False
19. The smoke tube is used to show the direction and velocity of air moving above 120 feet per minute.
20. True
21. False
22. Hydrogen is produced by the incomplete combustion of carbon materials.
23. True
24. False
25. Sulfur dioxide and hydrogen sulfide are water-soluble gases.
26. True
27. False
28. The rate of diffusion is how slowly the gas will mix or blend with one or more other gases and how slowly it can be dispersed.
29. True
30. False
31. Rock-Strata gases commonly called “rock gas” are assumed to contain what two types of gases?
32. Hydrogen and Carbon Monoxide
33. Nitrogen and Sulfur Dioxide
34. Nitrogen and Carbon Dioxide
35. Hydrogen Sulfide and Hydrogen
36. When a barometer raises indicating increased pressure, gas responds by contracting.
37. True
38. False
39. What type of ventilation involves the re-ventilation of a sealed area in successive blocks by means of air locks?
40. Direct Ventilation
41. Re-direct Ventilation
42. Progressive Ventilation
43. Combination Ventilation
44. The only purpose for mine ventilation is to provide adequate oxygen throughout the mine.
45. True
46. False
47. Ventilation controls affect the amount of air that travels and the direction of the flow.
48. True
49. False
50. Mine rescue teams may register up to \_\_\_\_\_\_\_ team members and one trainer.
51. 7
52. 8
53. 9
54. 10
55. The co-captain may take no more than \_\_\_\_\_\_\_\_ steps forward after the signal before stopping.
56. 3
57. 4
58. 5
59. 2
60. A survivor must be secured to the stretcher by only three bandages or straps placed at: one around trunk of body, one around legs, and one around ankles, covered with a blanket, and placed so as not to crimp air hoses.
61. True
62. False
63. Ventilation changes are considered regulating airflow to control a fire, starting and stopping or re-directing the air current.
64. True
65. False
66. Existing check curtains can be used to direct ventilation without modifications.
67. True
68. False
69. What is the acceptable distance for recording objects found in the mine on the mine map?
70. 3 feet
71. 6 feet
72. 9 feet
73. 4 feet
74. A column of wood or steel for support of underground openings is defined as:
75. Stopper
76. Stull
77. Footwall
78. Pillar
79. Gas detectors must measure concentrations of methane from 0.0 to 50 percent of volume, oxygen from 0.0 percent to at least 22 percent of volume, and carbon monoxide from 0.0 parts per million to at least 9,999 parts per million.
80. True
81. False
82. Direct firefighting involves fighting the fire from a distance by sealing the fire or by filling the area with foam, sand fill, or water.
83. True
84. False
85. Methane, Hydrogen, Nitrogen, and Carbon Monoxide are all flammable gases.
86. True
87. False
88. Hydrogen Sulfide has these two characteristics:

A. Has a Specific Gravity of 0.9301 and is flammable

B. Has a Specific Gravity of 1.1906 and is flammable

C. Has a Specific Gravity of 0.5223 and is non-flammable flammable

D. Has a Specific Gravity of 2.795 and is explosive in 1% normal air

1. What is the explosive range for Carbon Monoxide in normal air?

 A. 10.5 -15 percent

B. 5.5 – 15.2 percent

C. 20 - 40.8 percent

D. 12.5 – 74.2 percent

1. Which condition is triaged as a priority upon finding a survivor?

A. Multiple lacerations

B. Back injuries

C. Airway or breathing problems

D. Multiple fractures

1. The Command Center for rescue and recovery operations is generally only consisting of federal and state officials.

A. True

B. False

1. MSHA requires mine rescue stations serving underground M/NM mines to have two gas detectors appropriate for each gas which may be encountered at the mines served.

A. True

B. False

1. When installing a temporary bulkhead in a passageway, particularly in a crosscut of a room-and – pillar, single level mine, the bulkhead should be erected how far into the passageway to permit enough room for a permanent bulkhead to be built later?

A. At least 1 - 2 feet

B. At least 2 - feet

C. At least 3 feet

D. At least 4 - 6 feet

1. The term used to describe the process of assessing conditions UG and locating miners during a rescue or recovery operation is called:

A. Searching

B. Exploration

C. Discovery

D. Maneuvering