**2015 Kentucky Mining Institute Mine Rescue Contest**

**Written Field Exams – Day 1 and Day 2**

**DAY 1**

1. Gas layering is like smoke rollback with Methane and Hydrogen the likely gases to \_\_\_\_\_\_\_\_\_ layers during a fire. (Donald W. Mitchell Mine Fires, p. 23)
2. \_\_\_ Create
3. \_\_\_ Form\*
4. \_\_\_ Build
5. Temporary seals should include \_\_\_\_\_\_\_\_\_ for collecting air samples from within the sealed area. (MSHA 3028, pp. 5-24)
6. \_\_\_ Provisions\*
7. \_\_\_ Tubes
8. \_\_\_ Pipes
9. Nitrogen dioxide has a reddish-brown color in high \_\_\_\_\_\_\_\_\_\_\_\_. (MSHA 3028, pp. 2-18)
10. \_\_\_ Concentrations\*
11. \_\_\_ Amounts
12. \_\_\_ Liberations

4. Hydrogen sulfide is flammable and explosive in \_\_\_\_\_\_\_\_\_\_\_\_ from 4.3 to 45.5 percent in normal air. (MSHA 3028, pp. 2-20)

1. \_\_\_ Concentrations\*
2. \_\_\_ Amounts
3. \_\_\_ Liberations
4. \_\_\_\_\_\_\_\_ 21 percent of normal air is oxygen. (MSHA 3028, pp. 2-11)
5. \_\_\_ About\*
6. \_\_\_ Around
7. \_\_\_ Approximately
8. A mixture of coal dust in air reduces the explosive \_\_\_\_\_\_\_ of methane. (MSHA 2102, p. 32)
9. \_\_\_ Limit\*
10. \_\_\_ Range
11. \_\_\_ Amount
12. One \_\_\_\_\_\_\_\_\_\_ of heat during a fire is that it tends to weaken the roof, especially where head coal is left. (MSHA 2105, p. 32)
13. \_\_\_ Effect
14. \_\_\_ Problem
15. \_\_\_ Hazard\*
16. It is the responsibility of rescue team members to have all the \_\_\_\_\_\_\_\_\_\_\_ needed to do the work. (MSHA 2104, p. 23)
17. \_\_\_ Material
18. \_\_\_ Information\*
19. \_\_\_ Supplies
20. For teams using a compressed oxygen breathing apparatus, the captain usually notes each team member’s gauge reading at each \_\_\_\_\_\_\_ stop and reports the lowest reading to the fresh-air base. (MSHA 2104, p. 32)
21. \_\_\_ Required
22. \_\_\_ Rest\*
23. \_\_\_ Team
24. Before using a hand \_\_\_\_\_\_\_\_\_ extinguisher it must be checked for the type of fire you are fighting. (MSHA 2105, p. 10)
25. \_\_\_ Fire
26. \_\_\_ Held\*
27. \_\_\_ Chemical

**DAY 2**

1. Monitoring pressures and gases helps determine what is the danger of explosion, how soon \_\_\_\_\_\_\_\_\_\_ have to move to safety, how effective are the techniques being used and is the fire under control. (Donald W. Mitchell Mine Fires, p. 45)
2. \_\_\_ Teams
3. \_\_\_ Rescuers
4. \_\_\_ Firefighters\*
5. \_\_\_\_\_\_\_\_\_ the carotid pulse for 5 to 10 seconds. (Brady First Responder, p. 174)
6. \_\_\_ Check
7. \_\_\_ Monitor
8. \_\_\_ Take\*
9. As the team advances, the map man records what the team encounters by \_\_\_\_\_\_\_\_\_\_ the information on a mine map. (MSHA 2104, p. 48)
10. \_\_\_ Recording
11. \_\_\_ Marking\*
12. \_\_\_ Mapping
13. It is recommended that the \_\_\_\_\_\_\_\_ stop for a team check be just inby the fresh-air base. (MSHA 2104, p. 32)
14. \_\_\_ Required
15. \_\_\_ Team
16. \_\_\_ First\*
17. When a \_\_\_\_\_\_\_\_ is first located, every effort should be made not to disturb any possible evidence in the area. (MSHA 2106, p. 13)
18. \_\_\_ Patient
19. \_\_\_ Person
20. \_\_\_ Body\*
21. Rescue teams are responsible for \_\_\_\_\_\_\_\_\_\_ damage to the ventilation system. (MSHA 2107, p. 4)
22. \_\_\_ Assessing\*
23. \_\_\_ Correcting
24. \_\_\_ Preventing
25. It is generally recommended that \_\_\_\_\_\_\_\_\_\_ not travel through foam filled areas. (MSHA 2105, p. 17)
26. \_\_\_ Teams\*
27. \_\_\_ Rescuers
28. \_\_\_ Firefighters
29. Indirect firefighting methods allow \_\_\_\_\_\_\_\_\_\_\_\_ to remain a safe distance from the fire. (MSHA 2105m p. 35)
30. \_\_\_ Teams
31. \_\_\_ Rescuers
32. \_\_\_ Firefighters\*
33. If the mine has had an explosion, the team may encounter a great deal of debris, damage to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and hazardous roof and rib conditions. (MSHA 3028, pp. 3-22)
34. \_\_\_ Ventilation
35. \_\_\_ Stoppings\*
36. \_\_\_ Communications
37. To detect oxygen deficient atmospheres teams will use a (an) \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_. (MSHA 3028 pp. 2-14)
38. \_\_\_ Multi-gas detector
39. \_\_\_ Oxygen detector
40. \_\_\_ Oxygen indicator\*