2013 Nevada Mine Rescue Contest

Winnemucca, Nevada

March 12, 2013

General Written Test

Chose the correct answer by circling the letter next to it using a pencil. If you make a mistake, please erase your marks completely.

1. The Fresh Air Base and Team Captain make the decision to advance fresh air or build an airlock
   1. True
   2. False (false, the command center does this, page 6-4, MSHA 3027, last full paragraph)
2. A person trained in the use and care of self-contained breathing apparatus shall inspect and test the apparatus at intervals not exceeding 90 days and shall certify by signature and date that the inspections and tests were done.
   1. True
   2. False (false, 30 days page 4-14, MSHA 3027 & 49.6(b)(1))
3. The formula used to find the quantity of air moving through a drift is:
   1. Quantity (ft3) = Area (ft2) x Velocity (ft/min.) (#5, page 3-19, MSHA 3027)
   2. Quantity (ft3) = Area (ft2) x Velocity (ft/sec.2)
   3. Quantity (ft2) = Area (ft2) x Velocity (ft/min.)
4. It’s okay to alter ventilation without command center approval if:
   1. All team members agree it needs to be done.
   2. All fires have been extinguished.
   3. Gas readings at your present location are normal.
   4. None of the above (Page 3-3, MSHA 3027)
5. High levels (1000 ppm) of sulfur dioxide (SO2) will explode violently when combined with 21% oxygen.
   1. True
   2. False (Page 2-63, MSHA 3027)
6. Hydrogen sulfide (H2S) is only considered a toxic gas.
   1. True
   2. False (Page 2-61, MSHA 3027)
7. After Damp is:
   1. Toxic and explosive
   2. A mixture of four mine gasses
   3. Is always present after a mine fire or explosion
   4. A and C (Pages 2-27 & 2-28, MSHA 3027)
   5. None of the above
8. Gas diffuses slowly in higher temperatures.
   1. True
   2. False (Page 2-39, MSHA 3027)
9. A “line brattice” is used to
   1. Connect two points on a mine map.
   2. Direct air to flush out noxious or explosive gasses. (Page 3-24, MSHA 3027)
   3. Divert water.
10. Overcasts are normally used to
    1. Allow two air currents to cross at intersections without mixing. (Page 3-11, MSHA 3027)
    2. Allow drainage
    3. Neither of the above
11. Bulkhead and stopping mean the same thing when it comes to ventilation.
    1. True (Page 3-8, MSHA 3027)
    2. False
12. Hydrogen Sulfide has an explosive range of \_\_\_\_\_\_ in normal air
    1. 3.4 to 54.5%
    2. 4.3 to 45.5 ppm
    3. 5 to 15%
    4. 4.3 to 45.5% (Page 2-61, MSHA 3027)
13. Radon has an explosive range of
    1. 7.526%
    2. 7.526 ppm
    3. None of the above
    4. Radon is non-explosive (Page 2-25, MSHA 3027)
14. At times it may be necessary to restrain a person suffering from hysteria while exiting the mine.
    1. True (page 6-7, MSHA 3027)
    2. False
15. 3rd degree burns covering 3% of a person’s body are considered a low or third priority condition.
    1. True
    2. False (Page 6-6, MSHA 3027)
16. When opening a sealed fire area, you should
    1. Monitor gas concentrations.
    2. Cut off electrical power in the sealed area.
    3. Allow television reporters to be in the mine to video tape the event.
    4. Check the exhaust airway for potential ignition sources.
    5. A, B and D (Page 7-6, MSHA 3027)
17. Gas detector requirements are spelled out in the 30 CFR under which section?
    1. 49.2 (d)
    2. 49.6(a)(6) (page 2-3, MSHA 3027)
    3. 49.3 (a)(1)
    4. None of the above
18. Light gasses tend to disperse and diffuse slower than heavier gasses.
    1. True
    2. False (Page 2-7, MSHA 3027)
19. Which of the following are true when pumping water?
    1. Pay special attention to ground conditions.
    2. Water soluble gasses can be released.
    3. None of the above.
    4. Both of the above. (Page 7-2 & 13, MSHA 3027)
20. You can always depend on your senses to identify a gas.
    1. True
    2. False (Page 2-8, MSHA 3027)
21. During exploration, a team’s first priority is:
    1. Getting to survivors as quickly as possible.
    2. Ventilation
    3. Serious head injuries
    4. None of the above (Page 4-12, MSHA 3027)
22. 30 CFR requires certain team equipment, which section is it?
    1. 49.2 (d)
    2. 49.6 (a) (page 4-13, MSHA 3027)
    3. 49.3 (a)
23. The location of dinner buckets should be marked on the mine map.
    1. True (page 4-30, MSHA 3027)
    2. False
24. The fresh air base coordinator is responsible for:
    1. Maintaining communication between the team and command center.
    2. Following the team’s progress and making sure findings are marked on the map.
    3. Coordinating the activities at the command center.
    4. All of the above
    5. A & C (Page 4-8, MSHA 3027)
25. The team briefing is normally conducted:
    1. At the fresh air base
    2. Command center (page 4-15, MSHA 3027)
    3. Neither of the above
26. The team captain should check each team member’s physical condition before traveling to the fresh air base and before exploration begins.
    1. True (Page 4-19, MSHA 3027)
    2. False
27. If the captain comes across a closed door during exploration, it is okay to enter without air locking if:
    1. He knocks first
    2. The air is good everywhere else
    3. He knows what the conditions are behind it (Page 4-26, MSHA 3027)
28. The amount of time a team spends underground depends upon:
    1. The conditions underground
    2. The type of apparatus being used
    3. Whether or not you have found the fire.
    4. A & B (Page 4-31, MSHA 3027)
29. The purpose of the debriefing is to:
    1. Provide information to the command center (page 4-32, MSHA 3027)
    2. Meet with the families of missing miners
    3. Discuss your findings with the press
30. Normally gasses do not stratify when the ventilation system in a mine is working properly.
    1. True (page 2-7, MSHA 3027)
    2. False