Carlsbad New Mexico
Written Field Test
2010

1. Under normal conditions the only two gases that will be found at an underground mine is Oxygen and nitrogen.

   A. true
   B. false

2. The explosive range for Carbon Monoxide in normal air is
   a. 5.5 to 10.5%
   b. 12.5 to 50%
   c. 12.5 to 74.5%
   d. 15.5 to 75%

3. Sulfur Dioxide gas concentrations as low as _____ is dangerous to life
   a. .02 to .07%
   b. .01 t0 .05%
   c. .04 to .05%
   d. .4 to .5%
   e. .004 to .005%

4. The chemical symbol for acetylene is
   a. C2H4
   b. C3H6
   c. C2H2
   d. C4H4
   e. A2C4

5 When a team goes into a mine to explore or fight a fire, it should be concerned with two main things.
   a. Is there a back up team and are they trained
   b. Spreading of the fire and is there a second way out
   c. Spreading of the fire and the possibility of an explosion
   d. Possibility of an explosion and poor ventilation
   e. Is the team properly trained for this mission and do they have all of the equipment they will need.

6. Before going underground, the team should make sure that the main fan is running, that a guard is monitoring the operation of the fan and
   a. The command center knows where you are going
   b. A back up team is able and ready to enter the mine
   c. Test are being made at the main exhausts for any gases that may be present
   d. The command center will not let anyone else in the mine until your team says it's OK.
   e. A gas is a substance with no definite shape but does have a definite volume.

7. A gas is a substance with no definite shape but does have a definite volume.
   a. true
   b. false

8. Hydrogen sulfide is most explosive at 14.2%.
   a. true
   b. false

9. Which one of the following gases has an explosive range of 4.5 to 45.3%?
   a. hydrogen sulfide
   b. butane
   c. acetylene
   d. none of the above

10. Methane has an explosive range of about 5 to 15%. For methane to burn or explode there must be at least ____ % oxygen present.
   a. 12.1
   b. 15.2
   c. 17.2
   d. 9.2

11. The explosive range of ethane is _____in normal air.
   a. 3 to 9.35%
   b. 2.12 to 12.5%
   c. 1.86 to 8.41%
   d. None of the above

12. White-damp is a mixture of carbon dioxide and air which results from a mine fire.
    a. true
    b. false

13. To obtain the flow of air through a mine there must be a difference in air velocity between the intakes and exhaust airways.
    a. true
    b. false

14. In order to get air to flow from the intake to the exhaust, the exhaust air must be ____ pressure than the intake.
    a. constant
    b. equal
    c. higher
    d. lower

15. Map legends and symbols are not uniform throughout the mining industry.
    a. true
    b. false

16. Velocity is the rate of airflow in square feet per minute.
    a. true
    b. false

17. A temporary bulkhead should be erected at least ___ to ___ feet into a passage way to allow a permanent bulkhead to be constructed at a later date.
    a. 8 to 10
    b. 10 to 12
    c. 6 to 8
    d. 4 to 6

18. Team checks should be conducted to _____.
    a. make sure each team member is fit and ready to continue
    b. make sure each team member's apparatus is functioning properly
    c. to give the team a chance to rest
    d. all of the above

19. Monitoring the mine atmosphere for the presence of oxygen, explosive gasses, and carbon monoxide is another important element in team ____.
    a. communication
    b. exploration
    c. development
    d. progression

20. When a team goes into a mine to explore for a fire or to fight a fire, it should be concerned with ____ main thing(s).
    a. one
    b. two
    c. three
    d. four

21. Re-ventilation after an explosion in a single-level, room and pillar mine is usually accomplished by progressive ventilation.
    a. true
    b. false

22. The main objectives of exploration work during a mine fire are;
    a. extinguishing the fire and assessing conditions
    b. checking for gases and extinguishing the fire
    c. assessing conditions and locating the fire
    d. none of the above

23. The best way of relieving psychological stress in survivors is to trey to _____ them as soon as possible.
    a. rescue
    b. advance fresh air to
    c. communicate with
    d. sit with

24. The human body will decay very rapidly at temperatures above ____ degrees.
    a. 60
    b. 65
    c. 70
    d. 50

25. When approaching a fire you should stay low to avoid any roll back of flames and try to get within 6 to 8 feet of the fire before turning on the fire extinguisher.
    a. true
    b. false

26. If the team finds more then one survivor in a refuge chamber the team should:
    a. Do a triage and decide who should leave first, provide breathing protection and send the person to fresh air via shortest route.
    b. Do a triage and decide who should go first, leave a team member with the remaining person to keep him/her calm and ensure them the team will be returning.
    c. Do a triage and load the first selected person onto a stretcher, provide breathing protection and transport to the nearest fresh air base, repeat the process until all survivors are rescued.
    d. Provide a w-65 self rescuer to all of the survivors and get them to fresh air as soon and as quick as you can.

27. If a body is found the first thing a team member should do is check all of his/her pockets and look for something that will identify the miner.
    a. true
    b. false

28. When measuring ventilation with a smoke tube one must convert FPS to FMP. Therefore if the smoke travels 23 feet in 60 seconds it would convert to:
    a. 28 fpm
    b. 38 fpm
    c. 48 fpm
    d. None of the above

29. The best way to prevent hydrogen pops during a fire fighting event is to:
    a. build a fire regulator
    b. decrease air flow
    c. provide adequate air flow over the fire
    d. None of the above

30. If you suspect rubber, neoprene and PVC is burning in a mine one gas that may be present is arsine and its maximum allowable part per million would be
    a. 0.5
    b. 0.05
    c. 0.005
    d. 5.0