



2011 Central Mine Rescue Contest

May 18-20, 2010

Juneau, Alaska

Written Exam for the Mine Rescue Field Event

All tests must be completed within a total of 60 minutes

Name _____ Company _____

Team Name _____ Contest Position No. _____

Team Member No. _____

1. The specific gravity of normal air is:

- A. 0.01
- B. 1.1
- C. 0.001
- D. 1.0
- E. None of the above.

2. A fresh air base is usually established at the point where conditions no longer permit barefaced exploration.

- A. True
- B. False

3. If the mine has a manager as well as a superintendent, the superintendent usually carries full responsibility for the rescue and recovery operation.

- A. True
- B. False

4. _____ fires involve combustible metals such as magnesium, titanium, zirconium, sodium, and potassium.
- A. Class A
 - B. Class B
 - C. Class C
 - D. Class D
 - E. None of the above
5. _____ is a mixture of carbon monoxide and air which results from a mine fire.
- A. Afterdamp
 - B. Firedamp
 - C. Whitedamp
 - D. Blackdamp
6. The captain of the mine rescue team determines whether or not to alter ventilation.
- A. True
 - B. False
7. Factors that influence body deterioration are:
- A. Air temperature
 - B. Body Size
 - C. Body Fluid
 - D. All of the above
8. A _____ is a large hinged door used to close off a mine passage.
- A. Man door
 - B. Mine door
 - C. Regulator
 - D. None of the above
9. The explosive range of butane is:
- A. 4.0 to 74.2%
 - B. 2.12 to 9.35%
 - C. 1.86 to 8.41%
 - D. 5 to 15%
 - E. None of the above

10. To operate a wheeled extinguisher, you must first open the valve on the nitrogen cylinder.

- A. True
- B. False

11. One of the main factors governing the time for unsealing a fire area is the effect of barometric pressure on the enclosed area.

- A. True
- B. False

12. _____ is a mixture of carbon dioxide, nitrogen, and air.

- A. Stinkdamp
- B. Firedamp
- C. Afterdamp
- D. Blackdamp

13. As the team advances through the mine during exploration, the command center only needs to be told the type of damage found.

- A. True
- B. False

14. _____ is a second priority condition.

- A. Multiple fractures
- B. Abrasions
- C. Moderate shock
- D. Chest injuries
- E. A and C

15. Team members should not drink alcoholic beverages for at least _____ hours before getting under oxygen.

- A. 8 to 10
- B. 24
- C. 12 to 18
- D. 6
- E. None of the above

16. A main cause of oxygen deficiency in a mine is:

- A. Insufficient ventilation
- B. Displacement by other gases
- C. A fire or explosion
- D. Consumption by workers
- E. All of the above

17. It is the duty of the mine supervisor to alert adjoining mines if they are connected underground with the affected mine.

- A. True
- B. False

18. The team captain must make sure that each team member's apparatus has been properly repaired and tested after arriving at the fresh air base.

- A. True
- B. False

19. _____ ventilation is the most common method of recovery in multi-level mines.

- A. Direct
- B. Progressive
- C. Indirect
- D. Automatic
- E. None of the above

20. Ethane, propane, and butane gases collect in low areas of a mine.

- A. True
- B. False

21. The location of personal items, such as a lunch bucket, only needs to be marked on the side of the mine near where they are found.

- A. True
- B. False

22. _____ has the odor and taste of blasting powder fumes.
- A. Carbon dioxide
 - B. Nitrogen Dioxide
 - C. Sulfur Dioxide
 - D. Radon
 - E. None of the above
23. The difference in pressure within and without a sealed area usually described as “breathing in” means:
- A. Positive pressure in sealed area
 - B. Negative pressure in sealed area
 - C. Positive pressure outside sealed area
 - D. Negative pressure outside sealed area
 - E. None of the above
24. _____ is highly soluble in water.
- A. Oxygen
 - B. Nitrogen
 - C. Carbon Monoxide
 - D. Radon
 - E. None of the above
25. Only Federal officials can establish a command center and oversee all aspects of a rescue and recovery operation.
- A. True
 - B. False
26. The most accurate method of determining air velocity with smoke tubes is to take readings at quarter points within the airway.
- A. True
 - B. False

27. _____ determines how quickly a gas will diffuse or disperse.

- A. Specific gravity
- B. Temperature
- C. Atmospheric pressure
- D. A and C
- E. All of the above

28. _____ is the process by which a team systematically explores all crosscuts and adjacent entries as they advance so they are never forward of an unexplored area.

- A. Cross checking
- B. Tying in
- C. Traveling
- D. Pacing
- E. None of the above

29. Oxygen deficiency causes tightness in forehead, headaches, and dizziness at _____.

- A. 14%
- B. 13%
- C. 15%
- D. 9%

30. The more obese an individual is; the quicker rigor mortis will develop.

- A. True
- B. False