

**2014 TN Mine Rescue Contest
Dalton, GA
Mine Rescue Field Competition**

Name _____
Company _____
Team Name _____
Contest Position No. _____
Team Member No. _____

Directions: Circle the letter preceding the correct answer to each of the following questions. Circle only one answer per question.

1. Knowing what gases are present and in what concentrations provides you with important clues as to what has happened in the mine. For your own safety, you'll want to know which of the following:
 - A. what harmful gases are present,
 - B. how much oxygen is in the atmosphere,
 - C. whether or not gas levels are within the explosive range.
 - D. All of the above

2. 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

3. Gas detectors must measure concentrations of carbon monoxide from 0.0 parts per million to at least 999 parts per million.
 - A. True
 - B. False

4. Knowing the effects of air current, temperature, and pressure on a gas will help you determine its
 - A. identity
 - B. flammability.
 - C. rate of diffusion.
 - D. none of the above

5. Carbon Dioxide is a heavier gas and will diffuse rapidly.
 - A. True
 - B. False

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18. Please choose the class for an electrical fire from the choices below:
- A. "A"
 - B. "B"
 - C. "C"
 - D. "D"
19. Methane is not an explosive gas, but it does support combustion.
- A. True
 - B. False
20. Carbon monoxide gas will not explode.
- A. True
 - B. False
21. For Carbon Dioxide testing in an underground mine, should you hold your portable detector high, or low?
- A. Low
 - B. High
22. The first symptom of carbon monoxide poisoning is:
- A. Nausea
 - B. Slight tightening across the forehead with a possible headache.
 - C. Dizziness
 - D. Blurred vision
23. One cause of carbon monoxide is
- A. Bottled breathing air
 - B. Oxygen
 - C. Fire
 - D. SCBA
23. Air locks are not required prior to opening a refuge chamber, barricade, or door in irrespirable atmospheres behind which survivors may be located.
- A. True
 - B. False

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24. 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. that any indication of fire has been determined.
 - B. The Team Captain has tested all respiratory devices.
 - C. Families of the miners involved are being counseled.
 - D. tests are being made at the main exhausts for any gases that may be present in the mine.
25. Elevated readings of _____ could indicate that there is inadequate ventilation around battery charging stations.
- A. Carbon Monoxide
 - B. Hydrogen
 - C. Nitrogen Dioxide
 - D. Carbon Dioxide
26. You may recognize _____ by its distinctive “rotten egg” odor.
- A. Hydrogen
 - B. Carbon Dioxide
 - C. Carbon Monoxide
 - D. Hydrogen Sulfide
- ~~27. In direct firefighting, the brattice should cover about one half to two thirds of the area from the floor to the back. (REMOVED)~~
- ~~A. True B. False~~
28. The extremely toxic gas, Nitrogen Dioxide, is produced by all fires because of the incomplete combustion of carbon materials during the burning process.
- A. True
 - B. False

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29. _____ is a toxic gas and exposure to .01 to .015 percent (100 to 150 ppm) can be dangerous for even short exposures.
- A. Hydrogen
 - B. Carbon Dioxide
 - C. Methane
 - D. Nitrogen Dioxide
30. The explosive range for _____ is 4.0 to 74.2 percent when there is at least 5 percent oxygen present.
- A. Hydrogen Sulfide
 - B. Carbon Dioxide
 - C. Carbon Monoxide
 - D. Hydrogen