

2016 Annual Southeast Region Mine Rescue Competition

Maysville, KY

Written Test – 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. Which of these gases is the hardest to disperse by ventilation?

A. Sulfur Dioxide (p. 2-21)
B. Methane
C. Carbon Monoxide
D. Nitrogen

2. Hydrogen gas can be liberated when water or steam comes into contact with hot carbon materials during firefighting.

A. True (p 2-19) B. False

3. Gas detectors must measure concentrations of methane from 0.0 percent to 100 percent of volume, and carbon dioxide from 0.0 parts per million to at least 9,999 parts per million.

A. True B. False (p 2-3)

4. Which gas has a bitter, acid taste, and a strong sulfurous odor?

A. Methane
B. Nitrogen Dioxide
C. Carbon Dioxide
D. Sulfur Dioxide (p. 2-21)

5. Which of the following gases is considered both nonexplosive and nontoxic?

A. Carbon monoxide
B. Carbon dioxide
C. Nitrogen (p.2-14)
D. Hydrogen

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6. Which of the following gases will neither burn nor explode?
- A. Carbon monoxide
 - B. Carbon dioxide (p.2-15)
 - C. Methane
 - D. Propane
7. Normal air contains about 0.30 percent carbon dioxide.
- A. True
 - B. False (p 2-15)
8. Why does carbon monoxide interfere with your blood's oxygen carrying capacity?
- A. Because the cells normally carry carbon dioxide to your body's tissues
 - B. Because carbon monoxide has the capacity to burn
 - C. Because it causes violent panting and can lead to death
 - D. Because the gas combines with hemoglobin 200-300 times more readily than oxygen (p. 2-16)
9. Which of the following is not a likely source of carbon monoxide production:
- A. Mine fire
 - B. Gas Explosion
 - C. Flood (p 2-16)
 - D. Internal Combustion Engines
10. The specific gravity of nitrogen dioxide is 0.9672
- A. True
 - B. False (p 2-17)
11. When the exposure has been severe, the victim may die, literally drowned by water that has entered the lungs from the body in an attempt to counteract corrosive effect of the acids formed by _____.
- A. Oxides of Carbon Monoxide
 - B. Oxides of Nitrogen Dioxide (p. 2-18)
 - C. Oxides of Carbon Dioxide
 - D. Methane

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12. Hydrogen is a highly _____ gas.
- A. Non-volatile
 - B. Toxic
 - C. Reactive
 - D. **Explosive (p.2-18)**
13. Hydrogen sulfide is _____ in water.
- A. **Soluble (p. 2-20)**
 - B. Insoluble
14. Which gas can cause severe lung damage, and may cause respiratory paralysis and the complete inability to breathe?
- A. Carbon monoxide
 - B. Carbon dioxide
 - C. **Sulfur Dioxide (p 2-21)**
 - D. Nitrogen
15. Which of the following gases has a slight garlic odor?
- A. Nitrogen Dioxide
 - B. Sulfur Dioxide
 - C. Helium
 - D. **Acetylene (p.2-24)**
16. Mines are required to keep exposure to radiation below 4WLM per year. What does WLM stand for?
- A. Working Life Measurement
 - B. Working Life Minutes
 - C. Working Level Measurement
 - D. **Working Level Months (p. 2-25)**
17. _____ is a mixture of carbon monoxide, carbon dioxide, methane, oxygen, nitrogen, and hydrogen.
- A. Stinkdamp
 - B. Blackdamp
 - C. **Afterdamp (p. 2-27)**
 - D. Firedamp

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30. In mine rescue, when should barefaced exploration stop?
- A. at any point where disruptions in ventilation are found
 - B. when gas tests indicate the presence of any carbon monoxide
 - C. other noxious gases, elevated readings of explosive gases, or an oxygen deficiency.
 - D. **All of the above (p. 4-6)**