



2011 Nevada Mine Rescue Contest
Field Competition ~ Written Test
Winnemucca, Nevada
March 15th-17th

Name: _____ Company: _____

Team Name: _____ Team Position Number: _____

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

1. Sulfur Dioxide is;
 - a. Highly toxic, corrosive effect on lungs, may be asphyxiating, and originates from blasting and or powder fumes.
 - b. Asphyxiate, depletes oxygen.
 - c. Highly toxic, can be asphyxiate, and taste sweetish
 - d. Highly toxic, can be asphyxiate, a taste bitter (acid)
 - e. None of the above

2. Carbon Monoxide is;
 - a. A gas found in all mining operations
 - b. A normal constituent of air
 - c. Detected during a mine fire or explosion
 - d. A product of the breathing process

3. Oxides of nitrogen can occur in a mine atmosphere;
 - a. When certain explosives are used
 - b. When diesel powered equipment is being used
 - c. When electric equipment produces arcs or sparks
 - d. All of the above

4. An anemometer is used for measuring high air velocity between 2,000 and 10,000 feet per minute.
 - a. True
 - b. False

5. An anemometer is used for measuring medium air velocity between 120 and 2,000 feet per minute.
 - a. True
 - b. False

6. Methane is not considered to be a gas that is soluble in water.
 - a. True
 - b. False

7. An elevated concentration of nitrogen in mine air can be harmful because;
 - a. It can lower the O₂ content of the air
 - b. It is highly explosive
 - c. It is highly toxic
 - d. All of the above

8. When using a hand held fire extinguisher standing 10 to 15 feet away from the fire is close enough to effectively knock the flames down.
 - a. True
 - b. False

9. Characteristics of hydrogen sulfide include
 - a. Explosive
 - b. Highly toxic
 - c. Can be liberated from pools of stagnant water
 - d. All of the above

10. Two gases that are highly soluble in water are;
 - a. Methane and acetylene
 - b. Hydrogen sulfide and hydrogen
 - c. Nitrogen and sulfur dioxide
 - d. Hydrogen sulfide and sulfur dioxide

11. Specific gravity is the weight of a gas compared to an equal volume of normal air under the same temperature and pressure. Therefore the weight of air acts as the reference point from which we measure the relative weight or specific gravity of other gases.
 - a. True
 - b. False

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The equipment the team uses for exploration work falls

- a. Into two categories, the equipment each team member has, and the equipment required by law.
- b. Into three categories, the individual equipment, team equipment required by law, and all other equipment.
- c. Into two categories, the equipment each team member has, and the equipment the team uses.
- d. Into two categories, the equipment required by law, and all other equipment.
- e. Into two categories, surface and underground.

13 Sulfur dioxide gas concentrations as low as ____ is dangerous to life.

- a. .02 / .07 %
- b. .01 / .05 %
- c. .04 / .05 %
- d. .4 / .5 %
- e. .004 / .005 %

14. To obtain the quantity of air current in cubic feet per minute

- a. The linear feet of air travel per minute is multiplied by the computed area of the airway in square feet.
- b. The air velocity in feet per minute is multiplied by the length times the height of the airway
- c. The air velocity in square feet is multiplied by the area of the airway
- d. None of the above

15. Basically there are _____ way(s) to erect temporary brattice seals

- a. One
- b. Two
- c. Three
- d. Four
- e. Ten

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Re-ventilation after an explosion in a single level, room-and-pillar mine is usually accomplished by direct ventilation.

- a. True
- b. False

17. A regulator can be made by knocking blocks out of a permanent bulkhead
- True
 - False
18. Information the team relays to the fresh air base as it proceeds is known as the "progress report".
- True
 - False
19. Fires that involve flammable or combustible liquids are:
- Class A
 - Class B
 - Class C
 - Class D
 - None of the above
20. _____ is found in high concentrations in black powder smoke.
- Whitedamp
 - Afterdamp
 - Blackdamp
 - Firedamp
 - None of the above
21. _____ has a slight garlic odor.
- Butane
 - Ethane
 - Methane
 - Acetylene
 - None of the above.
22. The duties of the Fresh Air Base Coordinator typically include
- Checking names or numbers of the team going into the affected area.
 - Checking condition of backup team.
 - Checking and logging equipment and materials.
 - All of the above
 - None of the above

23. _____ is a mixture of carbon monoxide, carbon dioxide, methane, oxygen, nitrogen, and hydrogen.
- Whitedamp
 - Stinkdamp
 - Afterdamp
 - Blackdamp
 - Firedamp
24. It is up to the team captain to decide whether or not to alter the ventilation during exploration of the mine.
- True
 - False
25. If the team is stopped at one location for an extended period, it's common practice for the fresh air base to signal two short pulls on the communication line about every 5 minutes to check on the team's condition.
- True
 - False
26. If a body is in cold water, it will remain in almost perfect condition for:
- 4 - 5 days
 - 7 - 8 days
 - 2 - 3 days
 - A week
 - None of the above
27. Usually, after temporary seals are erected, a waiting period of about 48 hours is recommended before beginning construction on permanent seals.
- True
 - False
28. _____ ventilation is the re-ventilation of a sealed area in successive blocks by means of air locks.
- Block
 - Direct
 - In-Direct
 - Progressive
 - None of the above

29. _____ is a hazard of direct firefighting.

- a. Electrocution
- b. Oxygen deficiency
- c. Steam
- d. All of the above
- e. None of the above

30. The most accurate method of determining air velocity with a smoke tube is to take readings:

- a. In the center of the airway
- b. At half points within the airway
- c. Along the side of the airway
- d. At quarter points within the airway
- e. None of the above