

FIELD COMPETITION

1	A	16	B
2	B	17	A
3	B	18	B
4	B	19	A
5	A	20	B
6	C	21	C
7	B	22	C
8	B	23	A
9	C	24	C
10	B	25	D E
11	A	26	A - NO CORRECT ANSWER (LITTLE OR NO) C O
12	B	27	B
13	C	28	A
14	D	29	A
15	B	30	B

RECEIVED CREDIT ON PROTEST OF
NO ANSWER TO #26

**2014 Southwestern Regional Mine Rescue Contest
Carlsbad, NM
Written Test – Field Competition**

Name _____ Company _____

Team Name _____ Contest Position No. _____

Team Member No. _____

Directions: Use answer sheet & fill in completely.

1. During a rescue and recovery operation, one of the duties of the outside Supervisor is to:
 - a. Arrange for guards and state and/or local police.
 - b. Notify all persons on the notification plan of the emergency.
 - c. Obtain gas samples from the main exhaust.
 - d. None of the above

2. The explosive range of Ethane in normal air is?
 - a. 2.12 – 9.35%
 - b. 3.0 – 12.5%
 - c. 2.5 – 9.35%
 - d. None of the above

3. Reestablishing ventilation and bringing fresh air to an area damaged by fire or explosion is the main task of mine rescue teams in a rescue operation.
 - a. True
 - b. False

4. The law requires that gas detectors be able to measure concentrations of methane from 0.0 to 90% of volume, oxygen from 0.0 to 20% of volume, and carbon monoxide from 0.0 to 9,999 ppm.
 - a. True
 - b. False

5. Air locking operations should never be undertaken until the oxygen content of the air behind the seals has been reduced to at least _____%.
 - a. 2.0%
 - b. .05%
 - c. 1%
 - d. 5.0%

6. Urethane foam should never be applied greater than _____ inch thick because of spontaneous combustion.
 - a. ½ inch
 - b. 2 inch
 - c. 1 inch
 - d. 1 ½ inch

7. You can allow a rescued miner to walk out of the mine alone if the miner appears to be in good shape?
 - a. True
 - b. False

8. Usually, after temporary seals are erected, a waiting period of about 48 hours is recommended before beginning construction on permanent seals?
 - a. True
 - b. False

9. When constructing a temporary bulkhead from a crosscut, the bulkhead should be ____ feet into the passageway?
 - a. 10 to 12
 - b. 1 to 2
 - c. 4 to 6
 - d. None of the above.

10. The smoke tube is used to determine the direction and velocity of air moving above 120 feet per minute.
 - a. True
 - b. False

11. If you are exposed to high concentrations of CO, you may experience very few symptoms before losing consciousness.
 - a. True
 - b. False

12. Breathing air containing 5% Carbon Dioxide can increase respiration ____%.
 - a. 500
 - b. 300
 - c. 150
 - d. None of the above.

13. _____ is found after methane explosions in air having low oxygen content?
 - a. Butane
 - b. Ethane
 - c. Acetylene
 - d. Argon

14. During the debriefing session the _____ will provide the information found during exploration?
 - a. Team Captain
 - b. Co-Captain
 - c. Fresh Air Base
 - d. Team

15. Heavier gases such as carbon dioxide and sulfur dioxide do not diffuse rapidly, so they're easier to disperse?
- True
 - False
16. The degree to which a toxic gas will affect you depends on three factors: 1) how concentrated the gas is 2) how explosive the gas is and 3) how long you're exposed to the gas?
- True
 - False
17. The formula used to find the quantity of air moving through a drift is:
- $\text{Quantity (ft}^3\text{)} = \text{Area (ft}^2\text{)} \times \text{Velocity (ft/min.)}$
 - $\text{Quantity (ft}^3\text{)} = \text{Area (ft}^2\text{)} \times \text{Velocity (ft/sec.)}$
 - $\text{Quantity (ft}^2\text{)} = \text{Area (ft}^2\text{)} \times \text{Velocity (ft/min.)}$
18. Oxides of nitrogen are highly toxic. Breathing even small amounts will cause irritable bowel syndrome.
- True
 - False
19. A line brattice is brattice cloth or plastic that is hung to channel intake air into a working area that otherwise would not have adequate ventilation.
- True
 - False
20. 3rd degree burns covering less than 10% of the body (not including hands, feet, or face) is considered low or third priority.
- True
 - False
21. The team briefing is normally conducted:
- Only at a mine rescue contest
 - At the fresh air base
 - Command Center
 - None of the above
22. Rock --Strata gases commonly called "rock gas" is assumed to contain what two types of gasses?
- Hydrogen and Carbon Monoxide
 - Nitrogen and Sulfur Dioxide
 - Nitrogen and Carbon Dioxide
 - Hydrogen Sulfide and Hydrogen
23. Normally gasses do not stratify when the ventilation system in a mine is working properly.
- True
 - False

24. In a multi-level mine, a tunnel driven perpendicular to the main vein system of the mine is considered a?
- Drift
 - Stope
 - Crosscut
 - None of the above
25. A main cause of oxygen deficiency in a mine is:
- Insufficient ventilation
 - Displacement by other gases
 - A fire or explosion
 - Consumption by workers
 - All of the above.
26. The three preconditions for opening a sealed fire area are: 1) O₂ content is low enough to prevent an explosion 2) there is no CO and 3) the sealed area has cooled so the fire will not rekindle when re-ventilated?
- True
 - False
27. The advantage of progressive ventilation is it is a fast process.
- True
 - False
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28. Ventilation controls affect the amount of air that travel and the direction of flow.
- True
 - False
29. A fresh air base is usually established at a point where conditions no longer permit barefaced exploration.
- True
 - False
30. The command center for rescue and recovery operations is generally only consisting of federal and state officials?
- True
 - False