

Trainer Test Answers
2016 Annual Southeast Region Mine Rescue Competition
Maysville, KY

Directions: Mark the correct answer to each of the following questions on the provided answer sheet. Mark only one answer per question.

1. 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 (MSHA 3027, 2-57)**

2. The duties of an outside supervisor may include arranging for guards and state and/or local police to rope off and guard all mine openings and guard all roads and paths leading to the mine.
 - a. True (MSHA 3027, 1-8)**
 - b. False

3. Temporary bulkheads built in a passageway should be placed at least 4 to 6 feet into the passageway in order that:
 - a. Sufficient space is available to construct a permanent bulkhead. (MSHA 3027, 3-50)**
 - b. It will be protected from further explosions.
 - c. It will not be affected by fire if a fire should spread to that passageway.
 - d. All of the above

4. Debriefings are held to:
 - a. Inform news reporters of developments.
 - b. Inform family members of developments.
 - c. Review the rescue team's findings after they have returned from underground. (MSHA 3027, 4-51)**
 - d. All of the above.

5. Acetylene would normally be found in a mine atmosphere where:
 - a. diesel equipment is used
 - b. methane has burned or exploded in air with a lowered oxygen content (MSHA 3027, 2-70)**
 - c. leakage has occurred from adjacent oil or gas wells
 - d. battery charging stations are located

6. Mine rescue teams erecting temporary bulkheads in atmosphere with elevated hydrogen or methane readings should:
 - a. Use only inflatable seals.
 - b. Leave a corner of the bulkhead open for the hydrogen or methane to exit.
 - c. Use non-sparking tools and nails. (MSHA 3027, 3-49)**
 - d. Never enter such atmosphere.

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7. In advancing a fresh air base, after you put up the new air lock, the team should:
- Come out of the mine.
 - Perform gas tests in all dead ends and high places between the old and new fresh air base to ensure that all gases have been flushed from the area. (MSHA 3027, 4-49)**
 - Proceed beyond the new fresh air base to explore and let other workers check for any gases in the area between the old and new fresh air bases.
 - Shut off and remove your apparatus since you are in fresh air and will no longer need it.
8. The disadvantage of progressive ventilation is that gas conditions cannot be carefully controlled.
- True
 - False (MSHA 3027, 7-11)**
9. The preferred type of extinguisher for teams is a dry chemical type that contains:
- Sodium bicarbonate
 - Potassium chloride
 - Carbon tetrachloride
 - Monoammonium phosphate (MSHA 3027, 5-47)**
10. If a team member experiences problems with his or her apparatus beyond the fresh air base, the team member should:
- Be immediately sent back to the fresh air base.
 - Be sent back to the fresh air base with another team member.
 - Switch to the apparatus that was carried on the stokes basket or stretcher.
 - With the entire team, return immediately to the fresh air base. (MSHA 3027, 4-50)**
11. The thumb is considered _____ to the palm.
- distal
 - proximal
 - lateral (Ninth Ed. Brady. pg 89)**
 - medial
12. An Emergency Medical Responder should immediately move a patient EXCEPT when the patient:
- has a blocked airway.
 - is bleeding severely.
 - has mild shortness of breath. (Ninth Ed. Brady. pg 112)**
 - is in cardiac arrest.

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13. The recommended method for opening the airway of a patient with a possible neck or spine injury is the _____ maneuver.
- a. **jaw-thrust (Ninth Ed. Brady. pg 166)**
 - b. mouth-to-nose
 - c. abdominal thrust
 - d. head-tilt/chin-lift
14. The appropriate rate of compressions during CPR is _____ per minute.
- a. 80 to 100
 - b. no faster than 80
 - c. **at least 100 (Ninth Ed. Brady. pg 212)**
 - d. no faster than 120
15. When assessing a patient's respirations, you must determine rate, depth, and:
- a. regularity.
 - b. count of expirations.
 - c. **ease. (Ninth Ed. Brady. pg 237)**
 - d. count of inspirations.
16. After arriving on scene, but before making patient contact, you should:
- a. perform a primary assessment.
 - b. contact medical direction.
 - c. perform secondary assessment.
 - d. **take BSI precautions. (Ninth Ed. Brady. pg 273)**
17. In the event of any accident occurring in a coal or other mine, where rescue and recovery work is necessary, the Secretary or an authorized representative of the Secretary shall take whatever action he deems appropriate to protect the life of any person, and he may, if he deems it appropriate, supervise and direct the rescue and recovery activities in such mine.
- a. **True [Federal Mine Safety and Health Act of 1977, Section 103(j)]**
 - b. False
18. Congress declares that-- the first priority and concern of all in the coal or other mining industry must be the health and safety of its most precious resource--the miner;
- a. **True [Federal Mine Safety and Health Act of 1977, Section 2(a)]**
 - b. False
19. A person trained in the use and care of breathing apparatus shall inspect and test the apparatus at intervals not exceeding:
- a. 10 days
 - b. 15 days
 - c. **30 days [30 CFR 49.6(b)(1)]**
 - d. 6 months

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20. A mine rescue team member will be ineligible to serve on a team if more than 8 hours of training is missed during 24 months, unless additional training is received to make up for the time missed.
- a. True
 - b. False [30 CFR 49.18(c)]**
21. The first of the annual physical examinations for mine rescue team members shall be completed within 90 days.
- a. True
 - b. False – 30 CFR 49.17(a)**
22. In order for the fresh airbase attendant to maintain voice communications with the team a wireless communication system may be used.
- a. True (2016 Metal and Nonmetal Mine Rescue Contest Rules, pg 11)**
 - b. False
23. During the Gas Field Testing event you reported a concentration of 95 ppm Carbon Monoxide (CO) when tested against a known CO concentration of 100 ppm. This will result in the deduction of 15 discount points.
- a. True
 - b. False (2016 Metal and Nonmetal Mine Rescue Contest Rules, pg 39)**
24. What is the PL Code at which all frequencies used for radios will be set to transmit and receive?
- a. 88.5 Hz
 - b. 94.8 Hz (2016 Metal and Nonmetal Mine Rescue Contest Rules, pg 14)**
 - c. 97.4 Hz
 - d. 192.8 Hz
25. The oxygen used for breathing apparatus must meet U.S.P. specifications.
- a. True (Drager & Biomarine Service Manuals)**
 - b. False
26. Approval Authority for compressed air cylinders used in the breathing apparatus:
- a. NIOSH
 - b. MSHA
 - c. U.S.P
 - d. DOT (Drager & Biomarine Service Manuals)**
27. Any rapid up-scale reading followed by a declining or erratic reading may indicate a gas concentration beyond the upper scale limit which may be hazardous.
- a. True (MX6 iBrid Multigas Monitor Operation Guide – Rev 9, April 24, 2014, pg 4)**
 - b. False

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28. Oxygen deficient atmospheres may cause combustible gas readings to be higher than actual concentrations.
- a. True
 - b. **False (MX6 iBrid Multigas Monitor Operation Guide – Rev 9, April 24, 2014, pg 4)**
29. You are in a mine where a recent explosion has occurred. The mine is classified as a nongassy mine. However, a pipeline from an active gas well, and adjacent to the mine, appears to have ruptured and the gas has migrated through fissures in the earth into the mine atmosphere. You have been told that the gas carried in the pipeline is primarily butane. Your gas detector is in alarm and displays 19.3% O₂, 0.0 ppm NO₂, 1500 ppm CO, and 4.00% CH₄. The combustible catalytic sensor is calibrated to methane. Your team is in smoke. You should:
- a. continue exploring since you are under supplied air
 - b. retreat from the area immediately because the air has dangerous levels of CO
 - c. retreat only when the CH₄ sensor display exceeds 5.00%
 - d. **exit the mine immediately, you and your team are in an explosive atmosphere (MX6 iBrid Multigas Monitor Operation Guide – Rev 9, April 24, 2014, pg 40&41)**
30. You should verify the calibration of the combustible gas sensor after any incident where the combustible gas content has caused the instrument to display an over-range condition.
- a. **True (MX6 iBrid Multigas Monitor Operation Guide – Rev 9, April 24, 2014, pg 4)**
 - b. False