

2019

NEVADA REGIONAL MINE RESCUE CONTEST

Use the answer sheet to mark your answers. This document will NOT be scored.



TECHNICIAN TEAM **DRAGER** TEST

KEEP THIS DOCUMENT FACE DOWN UNTIL THE CLOCK STARTS
YOU WILL HAVE 60 MINUTES TO COMPLETE ALL TESTING

MSHA 3027 Questions

1. Which has the highest specific gravity?
 - a. CO₂
 - b. SO₂
 - c. NO₂
 - d. CO
 - e. H₂S
2. Which gas has a “color” in high concentrations?
 - a. CO₂
 - b. SO₂
 - c. NO₂
 - d. CO
 - e. H₂S
3. Which gas has a “corrosive effect” on the lungs?
 - a. CO₂
 - b. SO₂
 - c. NO₂
 - d. CO
 - e. H₂S
4. Which gas is described to have a “sweetish” taste?
 - a. CO₂
 - b. SO₂
 - c. NO₂
 - d. CO
 - e. H₂S
5. Which gas at a concentration of 6% (or less) can cause death?
 - a. NO₂
 - b. CO₂
 - c. CH₄
 - d. O₂
 - e. CO
6. Which gas has a specific explosive range between 1.86 and 8.41%?
 - a. H₂S
 - b. CH₄
 - c. Propane
 - d. Butane
 - e. Acetylene
7. Carbon Monoxide is:
 - a. A gas found in all mining operations
 - b. Detected during a mine fire or explosion
 - c. A normal constituent of air
 - d. A product of the breathing process

8. Which is a false statement?
- In ventilation, air always moves from high pressure regions to low pressure regions
 - You should always review the ventilation map before the team begins exploring the mine.
 - If your team comes across a damaged ventilation control (such as a bulkhead) you don't need to gain permission from the command center to fix it.
 - In naturally ventilated mines, differences between outside and inside temperatures cause the air to flow.
9. Which is false about permanent bulkheads?
- They need to be sealed tightly against the back, floor & ribs
 - Dry timber should be used in constructing the bulkhead
 - Porous stoppings are usually plastered on the high-pressure side.
 - All of the above
 - None of the above
10. Which is true about temporary bulkheads?
- Are used to temporarily advance and direct airflow
 - A "parachute stopping" is one example of a temporary bulkhead
 - They can be made of wood, plastic, brattice cloth & other materials
 - All of the above
 - None of the above.

MX6 Questions

11. Silicone compound vapors may affect _____.
- Oxygen sensors
 - Nitrogen Dioxide sensors
 - Combustible gas sensors
 - Sulfur Dioxide sensors
 - None of the above
12. Which item below is not part of the "MSHA Conditions of Use"?
- Lithium ion cells are user-replaceable
 - The part number for the alkaline battery pack is 1713-1046-6
 - Do not mix batteries from different manufacturers
 - None of the above
13. The IR (infrared) methane sensor is not to be used for methane concentrations below _____ in air.
- 20%
 - 15%
 - 10%
 - 25%
 - None of the above
14. What is the name (acronym) of the queue where alarm and error events are recorded?
- BIBO
 - FIDO
 - LIDO
 - FIFO
 - None of the above

15. What information does the data log feature not save?
- Date
 - Time
 - Barometric pressure
 - Gas Reading
 - Site ID
16. When sampling for Cl₂, ClO₂, HCl and VOCs you should use _____ tubing
- Urethane
 - Neoprene
 - Rubber
 - Teflon-lined
 - None of the above
17. Passwords can consist of ___ characters.
- 5
 - 10
 - 3
 - 8
 - All of the above
18. Depending on the installed LCD, one of two different icons may appear for each charge level. The possible icon color combination(s) for >50% are:
- Blue or Blue and Red
 - Blue or Blue and Gray
 - Yellow or Red and Gray
 - None of the above
19. If more than one sensor fails the bump test, they are calibrated in order (_____) on the gas monitoring display screen?
- Left column top to bottom, Right column bottom to top
 - Top row left to right, bottom row right to left
 - Top row left to right, bottom row left to right
 - None of the above
20. In the sensor specifications table, the appropriate calibration gas and concentration for the Combustible LEL (infrared) sensor is:
- 30% LEL Butane
 - 25% LEL Pentane
 - 25% LEL Propane
 - None of the above

DRAEGER BG4 Questions

21. What is the MSHA approval number for the Sentinel?
- (Appr. No. R1-3985-1)
 - (Appr. No. 2G-9431-0)
 - (Appr. No. 1A-9431-2)
 - (Appr. No. 2G-3985-0)
 - None of the above

22. While performing the steps “Disconnect yellow medium-pressure hose from pressure reducer” and “Remove minimum valve”, what must you do with the circlip?
- Remove it carefully with a pair of needle nose pliers
 - Discard it, it's useless after one use
 - Press it in
 - Pull gently
 - None of the above
23. What do you need to do to the breathing bag each time when removing the Air Cooler, Drain Valve and Minimum Valve?
- Pull the bag from the cooler and valves
 - Toss them into the garbage, they are a one-use item.
 - Mark the date and time it was removed on the bag using a permanent marker
 - Use the handle tabs to enlarge the sleeve
 - All of the above
24. When dismantling the Waist Belt you need to lift up the _____ locking clips.
- Two
 - Six
 - Eight
 - None of the above
25. The wrench used for Dosage Orifice Service is a _____ wrench.
- 6mm
 - 7mm
 - ½ inch
 - None of the above
26. What color is the dosage line?
- Clear
 - Blue
 - Yellow
 - Green
27. What's the name of the chemical used when disinfecting your BG4?
- Soap
 - Airdry 33
 - Chemdry 33
 - Airkem 33
28. How long does the Sentinel show the battery status once you release the buttons when shutting it down?
- 5 seconds
 - Immediately
 - 3 seconds
 - None of the above

29. During component checks test plug _____ is used when checking the inhalation end of a hose.
- a. R33786
 - b. R50028
 - c. R22086
 - d. None of the above
30. During component checks, to check the air cooler for leaks, the maximum allowed pressure loss is _____.
- a. 1bar/min.
 - b. 3mbar/min.
 - c. 2bar/min.
 - d. None of the above