

**Southwest Wyoming Mutual Aid Mine Rescue Contest
Rock Springs WY
June 7-9, 2016**

Team Technicians – BG4 - Test

Company Name _____

Team Name _____

Name _____

1. The use of ice in the cooling system is only required at ambient temperatures above _____ degrees F.

- a) 30
- b) 0
- c) 45
- d) 32

2. The steps to check the inhalation valve are: Set “set positive pressure pumping”, tightly pinch the inhalation hose with your hand, start pumping slowly until, 10 mbar is indicated on the pressure gauge.

- a) True
- b) False

3. To remedy an apparatus that the drainage valve will not open, opens too early or to late you should remove test plug R22086 and mount hose connector for relief valve. Check moveable pin hole or borehole. Replace spring.

- a) True
- b) False

4. The temperature for drying an apparatus must not exceed _____ degrees C.

- a) 100
- b) 60
- c) 30
- d) 40

5. The high pressure O2 Cylinders contain _____ liters of 99% O2.
- a) 425
 - b) 500
 - c) 400
 - d) 450
6. The over pressure valve opens between 2-5 mbar on the relief valves.
- a) True
 - b) False
7. If the cylinder pressure is lower than 2600 psi/180 bar you should _____.
- a) Use until 2000 psi
 - b) Not worry about it until it is completely empty
 - c) Charge the oxygen cylinder.
 - d) None of the above
8. To fit the waist belt you should press down on the fixing point of the waist belt and turn it through 90 degrees at the same time.
- a) True
 - b) False
9. The accuracy of the Sentinel is \pm _____ % of the final value.
- a) 4
 - b) 2
 - c) 3
 - d) 5
10. Whenever the apparatus has been serviced, it must be _____ per published guidelines.
- a) stored
 - b) used
 - c) tested
 - d) cleaned

11. During calibration, the user has ___ minutes to apply gas before the calibration times out.

- a) 2
- b) 4
- c) 5
- d) 10

12. The use of leather cases can produce inaccurate readings with diffusion (non-aspirated) gas detection instruments for specific monitoring applications.

- a) True
- b) False

13. Access to the Configuration Menu can be protected with a password. If the user doesn't remember the password, entering "412" as the password and pressing the left and right arrow keys simultaneously resets the password to nothing.

- a) True
- b) False

14. Oxygen deficient atmospheres may cause combustible gas readings to be higher than actual concentration.

- a) True
- b) False

15. The operation-mode root menu is the entry point to any feature. It is activated from the gas-monitoring display screen and has three menu tabs.

- a) True
- b) False

16. Oxygen enriched atmospheres may cause the combustible gas readings to be lower than actual concentrations.

- a) True
- b) False

17. Industrial Scientific recommends the "_____ Sampling Rule" when sampling with a motorized pump and tubing.

- a) 2&1
- b) 1&1
- c) 2&2
- d) 1&2

18. When calibrated using methane concentrations less than 5% of volume, reading accuracy of the infrared methane sensor may not be guaranteed to be better than _____?

- a) +/- 15%
- b) +/- 20%
- c) +/- 25%
- d) None of the above

19. The MX6 multigas monitor (instrument) is powered by an alkaline or rechargeable Lithium-ion battery. Industrial Scientific recommends that the monitor is fully charged. This may require up to ___ hours.

- a) 4
- b) 8
- c) 12
- d) 24

20. For compliance determinations required by 30 CFR 57, Subpart T, the monitor must display “___” and “___” during the monitor’s start-up sequence.

- a) O₂ and PPM
- b) CH₄ and %VOL
- c) CH₄ and %LEL
- d) O₂ and %VOL

21. An increase in pressure causes a gas to _____.

- a) expand
- b) combust
- c) change properties
- d) contract

22. High temperatures cause gases to diffuse more quickly.

- a) True
- b) False

23. What is the explosive range for hydrogen in the presence of normal air?

- a) 5.0-15.0%
- b) 4.3-45.5%
- c) 4.0-74.2%
- d) Not explosive

24. An SCBA will protect you from all toxic gases.

- a) True
- b) False

25. What is the explosive range for carbon dioxide in the presence of normal air?
- a) 5.0-15.0%
 - b) 12.5-74.2%
 - c) 4.0-74.2%
 - d) Not explosive
26. The presence of acetylene could indicate that an explosion has taken place in an area with low oxygen content.
- a) True
 - b) False
27. A smoke tube is used to show direction and velocity of slow-moving air (below 120 feet per minute.)
- a) True
 - b) False
28. Temporary bulkheads should be erected a sufficient distance into the passageway (at least 4 to 6 feet) to _____.
- a) Permit enough room for a permanent bulkhead to be built later.
 - b) Prevent air current from knocking it down.
 - c) Permit enough room for installation of an airlock.
 - d) Prevent recirculation.
29. The smoke tube and anemometer are used to measure airflow.
- a) True
 - b) False
30. _____ is an exhaust ventilation shaft.
- a) Downcast
 - b) Undercast
 - c) Overcast
 - d) Upcast