

2015 Southwestern Regional Mine Rescue Contest
Ruidoso, NM
Team Tech W/BG4 Written Test

1. The user has _____ to apply gas before calibration times out.
 - a. 10 minutes
 - b. 5 minutes (Page 35)
 - c. 3 minutes
 - d. 2 minutes
 - e. 1 minute

2. Oxygen enriched atmospheres may cause combustible gas readings to be lower than actual concentrations.
 - a. True
 - b. False (Page 4)

3. Silicone compound vapors or other known contaminants may affect the combustible gas sensor and cause readings of combustible gas to be greater than actual gas concentrations.
 - a. True
 - b. False (Page 4)

4. Sudden changes in atmospheric pressure may cause temporary fluctuations in the oxygen reading.
 - a. True (Page 4)
 - b. False

5. High off-scale readings may indicate explosive concentration carbon monoxide.
 - a. True
 - b. False (Page 4)

6. Industrial Scientific recommends the _____ when sampling with a motorized pump and tubing, allow for _____ per foot of tubing used, prior to noting the monitor readings.
 - a. 1 & 3 Sampling Rule, 1 minutes plus 3 seconds
 - b. 2 & 3 Sampling Rule, 2 minute plus 3 second
 - c. 3 & 3 Sampling Rule, 3 minutes plus 3 seconds
 - d. None of the above (Page 5)

7. The individual alkaline batteries cannot be replaced in a _____ area.
 - a. Smoky
 - b. Wet
 - c. Gassy
 - d. None of the above (Page 5)

8. 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 +/-20%.
 - a. True (Page 5)
 - b. False

9. The visual alarm is also used as the confidence indicator which, when enabled, blinks the LEDs once every ____ seconds.
 - a. 25
 - b. 20
 - c. 35
 - d. 30 (Page 7)

10. ata logging is a feature that allows a variety of system parameters to be recorded at regular intervals (and saved internally) for retrieval (and viewing) at a later date. The data log feature saves the following information EXCEPT:
 - a. Gas Type
 - b. STEL
 - c. TWA
 - d. TLV (Page 8)
 - e. All of the above

11. The apparatus must be inspected and serviced regularly by certified service personnel.
 - a. True
 - b. False (PSS BG Service Manual page 2)

12. When changing the mask lense, remove lens screws by turning them clockwise with a screwdriver, while at the same time holding hexagon nuts.
 - a. True
 - b. False (PSS BG Service Manual page 9)

13. The speech diaphragm is a very thick foil, which could easily contribute to considerable leakage if it is damaged.
 - a. True
 - b. False (PSS BG Service Manual page 10)

14. Ultrasonic cleaning is the only acceptable method of orifice service.
 - a. True (PSS BG Service Manual page 13)
 - b. False

15. When cleaning, all parts must be cleaned in lukewarm water with a mild detergent.
 - a. True (PSS BG Service Manual page 16)
 - b. False

16. When drying, the minimum temperature is 60 °C (140 °F).
- True
 - False (PSS BG Service Manual page 16)
17. The oxygen must have a purity >99.5% and must be both tasteless and odorless.
- >98.5%
 - >95.5%
 - >99.4%
 - None of the above (PSS BG Service Manual page 17)
18. The oxygen cylinder must be charged and handled in accordance with O2 handling publications.
- True (PSS BG Service Manual page 17)
 - False
19. The cylinder must be full for operational usage, 3000 PSI (206 BAR) is required.
- True (PSS BG Service Manual page 20)
 - False
20. The mould parting seams of the breathing hose and on the connectors from the oxygen cooler and CO2 absorber must line up.
- True
 - False (PSS BG Service Manual page 20)
21. High temperatures or heat cause gases to expand so they diffuse more slowly.
- True
 - False (Modules Page 2-5)
22. SO2 is not a soluble gas, but H2S may be released from water.
- True
 - False (Modules Page 2-7)
23. The specific gravity of CO2 is _____.
- 1.5129
 - 1.5192
 - 1.5219
 - 1.5291 (Modules Page 2-7)
 - None of the above
24. H2S is flammable and explosive in concentrations from 4.3 to 45.5 in normal air.
- True (Modules Page 2-19)
 - False

25. The following are five of the major damp types except:
- Smokedamp (Modules Page 2-29)
 - Stinkdamp
 - Afterdamp
 - Blackdamp
 - Firedamp
26. Blower fans are used mostly in mines having little overburden.
- True (Modules Page 3-4)
 - False
27. The only natural energy source that can create and sustain is _____ energy due to temperature differences.
- Nuclear
 - Mechanical
 - Electrical
 - Thermal (Modules Page 3-5)
28. Sometimes permanent bulkheads have a man door or drop door to allow an increase in ventilation to pass through.
- True
 - False (Modules Page 3-9)
29. Air doors are usually built at shaft stations and other strategic locations, so that if there is a fire they can be closed to serve as a barrier to the fire and contaminated air.
- True
 - False (Modules Page 3-12)
30. Line brattice is especially useful for rescue teams when they need to flush out or ventilate a large area of the mine.
- True
 - False (Modules Page 3-10)