**2015 Southern Regional Mine Rescue Contest**

**New Iberia, LA**

**Team Tech W/BG4 Written Test**

1. The measurement resolution for a Methane sensor with 0% to 5% volume is \_\_\_\_% volume.
   1. 1.0
   2. .01
   3. 0.01(Page 38)
   4. 0.001
2. The Normal Operations Menu has a \_\_\_\_\_ background and the Configuration Menu has a \_\_\_\_ Background on LCD.
   1. White, Blue
   2. White, Red
   3. White, Yellow (Page 7)
   4. White, Black
3. 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 \_\_\_\_?
   1. +/-15%
   2. +/-20% (Page 6)
   3. +/-25%
   4. None of the Above
4. Alkaline battery packs are only approved for use with \_\_\_\_\_ or \_\_\_\_\_ batteries in the instrument.
   1. Duracell MN 1500, Rayovac LR6 (Page 3)
   2. Duracell MN 2000, Rayovac LR8
   3. Duracell MN 2500, Rayovac LR10
   4. None of the Above
5. Up to \_\_\_\_\_ sensors may be displayed on the instrument screen.
   1. Three
   2. Four
   3. Five
   4. None of the Above (Page 16)
6. The recommended calibration gas for infrared methane sensor calibration is 100% volume methane.
   1. True
   2. False (Page 6)
7. Sudden changes in atmospheric pressure may cause temporary fluctuations in the oxygen reading.
   1. True (Page 4)
   2. False
8. The infrared methane sensor is not to be used for methane concentrations below 5% in air.
   1. True (Page 6)
   2. False
9. To power up the MX6 instrument, locate, press and hold the center [ENTER] navigation button for at least 5 seconds.
   1. True
   2. False (Page 15)
10. The battery icon at >5% charge remaining is the color blue.
    1. True
    2. False (Page 33)
11. Repair and general overhaul of the BG4 apparatus may only be carried out by certified personnel.
    1. True
    2. False (PSS BG Service Manual page 2)
12. The use of anti-fog solution R52560 or R52550 is required to be applied before use.
    1. True (PSS BG Service Manual page 3)
    2. False
13. After each use of this apparatus a fully charged cylinder and a recharged CO, absorber shall be installed.
    1. True
    2. False (PSS BG Service Manual page 3)
14. Removing the waist belt and harness is only required if very dirty, contaminated, or needs to be replaced.
    1. True (PSS BG Service Manual page 8)
    2. False
15. When inserting the speech diaphragm, remove V-ring and inspect for good condition.
    1. True
    2. False (PSS BG Service Manual page 10)
16. During the Reducer installation, ensure bypass plunger is lubricated with CO2 safe grease.
    1. True
    2. False (PSS BG Service Manual page 15)
17. The mould parting seams of the breathing hose and plug-in coupling are offset at \_\_\_\_\_\_ degrees to each other.
    1. 45 degrees
    2. 70 degrees
    3. 90 degrees (PSS BG Service Manual page 21)
    4. 180 degrees
18. When Checking the Response threshold of the Low Pressure Warning, the low-pressure warning should be activated when the pressure is lower than \_\_\_\_\_ mbar.
    1. 1.2 mbar
    2. 1.5 mbar
    3. 1.4 mbar (PSS BG Service Manual page 24)
    4. 1.3 mbar
19. When Checking the Inhalation Valve, if the system does not reach 10 mbar, replace the inhalation valve or valve disc.
    1. True (PSS BG Service Manual page 25)
    2. False
20. When Checking the Residual Pressure Warning, close the cylinder valve, watch the sentinel, and a warning should be generated at approximately 700 psi/48 bar.
    1. True (PSS BG Service Manual page 31)
    2. False
21. Oxygen is not soluble in water.
    1. True
    2. False (Modules 2-14)
22. Asphyxiating gases cause suffocation by displacing oxygen in the air, thus producing an oxygen-deficient atmosphere.
    1. True (Modules 2-10)
    2. False
23. The mines ventilation system is designed to bring in fresh oxygen to disperse and remove harmful gases and to supply air.
    1. True
    2. False (Modules 2-3)
24. The only way to analyze air samples is to send them to a laboratory for chemical analysis.
    1. True
    2. False (Modules 2-4)
25. If the weight of a gas you’re testing for is lighter than normal air, you’ll know to test for it near the \_\_\_\_\_ of the mine.
    1. Floor
    2. In Water
    3. Back (Modules 2-6)
    4. Lower Rib area
26. Overcasts are like tunnels built below the normal floor of the mine.
    1. True
    2. False (Modules 3-11)
27. If your team finds a fallen check curtain while exploring a mine, you should install a new curtain in its place to restore the ventilation controls.
    1. True
    2. False (Modules 3-10)
28. Porous stoppings such as concrete blocks stoppings are usually plastered on the low-pressure side to reduce air leakage.
    1. True
    2. false (Modules 3-8)
29. When it comes to fixing the ventilation, the \_\_\_\_\_\_\_ will be counting on you to build controls where and how you are instructed.
    1. Fresh Air Base
    2. Team Captain
    3. Mine Manager
    4. MSHA
    5. None of the Above (Modules 3-3)
30. Under no circumstances do you ever alter ventilation without orders to do so from the fresh air base.
    1. True
    2. False (Modules 3-3)