**2013 Central Mine Rescue Contest**

**Kellogg, Idaho**

**Written Test-Team Technician**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Company\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Team Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Contest Position\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Team Member No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: Circle the letter preceding the correct answer to each of the following questions. Circle only **one** answer per question.

1. **Silicone vapors will \_\_\_\_\_\_\_\_\_\_ the combustible sensor.**
2. Have no effect on.
3. Have an inhibiting effect on.
4. Over range.
5. Poison.
6. **According to Industrial Scientific calibration policy, how often should you calibrate your instruments?**
7. Once a year
8. Once every 6 months
9. Once a month
10. Quarterly
11. **What does the Peak Readings display on all Industrial Scientific instruments indicate?**
12. Highest readings of the toxic gases, O2 and LEL.
13. Lowest readings of the toxic gases and LEL and the highest reading of the O2.
14. Highest reading of the toxic gases and LEL and the lowest reading of the O2.
15. Alarm set points.
16. **When a sensor encounters a gas concentration higher than the measuring range of the sensor, what is displayed on the instrument?**
17. OR
18. OVER RANGE
19. 999+
20. The sensor identifier will disappear from the display
21. **The Gortex membrane should be replaced?**
22. Before each calibration.
23. When new sensors are installed.
24. Cannot be replaced in the field.
25. When dirty or Gortex damage is present.
26. **How many sensors can be installed in the MX6/iTX?**
27. 4 sensors.
28. 5 sensors.
29. 6 sensors.
30. 7 sensors.
31. **What are the two types of battery packs available for the MX6/iTX?**
32. NiCad and Lithium Ion
33. Alkaline and NiCad
34. Alkaline and Lithium Ion
35. NiMh and Alkaline
36. **What are the alarm set points for methane on the MX6/iTX?**
37. 1.5 – 2.5%
38. 1.0 – 2.0%
39. 1.0 – 1.5%
40. 3.0 – 5.0%

**9. The calibration gas values are factory set and cannot be changed?**

a. True

b. False

**10. What appears on the display of the MX6/iTX when the combustible sensor**

**is exposed to more than 5% by volume CH4?**

a. 5.0% +

b. ERR

c. OR

d. The actual concentration of CH4

**11. The explosive range of Ethane in normal air is?**

a. 2.12-9.35%

b. 3.0-12.5%

c. 2.5-9.35%

d. 1.86-8.41%

**12.** **The degree to which a toxic gas will affect you depends on three factors:**

**1) how concentrated the gas is, 2) how explosive the gas is, and 3) how long you’re exposed to the gas?**

a. True

b. False

**13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_is formed when methane is burned or heated in air having low oxygen content?**

a. Butane

b. Argon

c. Ethane

d. Acetylene

**14. When smoke gets dense it can disorient reference points causing you to fall down, this is called\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?**

1. Spatial distortion
2. Spatial distention
3. Spatial disorientation
4. Spatial difficulty

**15. Drowning from water in the lungs can occur by the body trying to counteract corrosive effects from severe exposure of acids formed by\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?**

a. Hydrogen Sulfide

b. Oxides of Nitrogen

c. Carbon Monoxide

d. Sulfur Dioxide

**16. The discharge of an extinguisher various between?**

a. 8-20 seconds

b. 5-60 seconds

c. 18-25 seconds

d. 8-60 seconds

**17. Which of these conditions is not a first priority during triage?**

a. Deep shock

b. Second degree burns covering 10% of the body

c. Severe bleeding

d. Inhalation of poisonous gases

**18. The ideal time to take an air sample is when the sealed area is under positive pressure?**

a. True

b. False

**19. Color, ordor, and taste are sensory properties that can help you identify a gas?**

a. True

b. False

**20. One of the most poisonousness gasses is Hydrogen Sulfide; concentrations of \_\_\_\_\_ to \_\_\_\_\_\_\_\_ percent can cause rapid unconsciousness, cessation of respiration, and death.**

a. .07 to.10%

 b. .02 to .07%

c. .10 to .20%

d. 0.04 to 0.05%

**21. The Bg4 is approved for use at temperatures above 23 degrees Fahrenheit?**

a. True

b. False

**22. The use of ice in the cooling system is only required at ambient temperature above 32 degrees C?**

a. True

b. False

**23. The sentinel meets the explosion – proofing standard to EEx in 11C T4**

 **and EEx; A1 and approved for use in gaseous mines by MSHA?**

**(approx. No 2G-3980–0)**

a. True

b. False

**24. Dirty orifice can cause high dosage?**

a. True

b. False

**25. Damaged orifice can cause high dosage?**

 a. True

b. False

**26. Checking the inhalation valve while testing set the tester to negative**

 **pressure?**

 a. True

b. False

**27. Checking the relief valve, opening pressure gauge: it should be between**

 **2 and 5 Lpm?**

 a. True

b. False

**28. The high pressure leak test will fail if dosage is out of range?**

 a. True

b. False

**29. The constant dosage metering quantity should lie between 1.5 and 1.9 Lpm2?**

 a. True

b. False

**30. Drainage valve opens too early or too late, can be caused by spring pressure incorrect?**

 a. True

b. False