Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Company\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Team Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Contest Position Number\_\_\_\_\_\_\_\_\_

Team Member Number\_\_\_\_\_\_\_\_\_

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

1. When the barometer falls, this means:
2. Gases will diffuse more quickly
3. The atmospheric pressure is rising
4. It is much easier for explosive gases to build up
5. Gases are squeezed into a smaller area
6. Methane is most explosive at what range
7. 5% to 15% with at least 12.1% oxygen
8. 9.5% to 12.5% with at least 12.1% oxygen
9. 5% to 10%
10. 9.5% to 10%
11. Electrical malfunctions will not produce oxides of nitrogen
12. True
13. False
14. Usually, the measured distance using a smoke tube is \_\_\_\_\_\_\_\_\_feet.
15. 100
16. 50
17. 75
18. 25
19. Asphyxiating gases:
20. Can, in all cases, be tasted, smelled, or seen
21. Cause suffocation
22. Cause the metal parts of an apparatus to corrode
23. Do not produce an oxygen deficient atmosphere
24. The explosive range of hydrogen is \_\_\_\_\_\_\_\_\_\_\_to 74.2%.
25. 7%
26. 5%
27. 4%
28. 3%
29. An anemometer is a small windmill device with a mechanical counter that measures air velocities of over \_\_\_\_\_\_\_\_\_\_\_\_feet per minute.
30. 100
31. 110
32. 120
33. None of the above
34. Mine ventilation air always moves from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
35. Neutral pressure regions to atmospheric pressure regions.
36. Low pressure regions to high pressure regions.
37. High pressure regions to low pressure regions
38. Balanced pressure regions to unbalanced pressure regions.
39. A partially opened mine door cannot be used as a regulator.
40. True
41. False
42. The most accurate measurement of air velocity using a smoke tube is obtained by take readings at quarter

points within the airway.

1. True
2. False
3. Oxygen deficient atmospheres may cause combustible gas readings to be higher than actual concentrations.
	1. True
	2. False
4. Oxygen enriched atmospheres may cause combustible gas readings to be lower than actual concentrations.
5. True
6. False
7. The battery icon at >50% is what color?
8. Blue
9. Yellow
10. Red
11. 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 \_\_\_\_\_\_\_\_?
12. +/- 15%
13. +/- 20%
14. +/- 25%
15. To power up the MX6 instrument, locate, press and hold the center [ENTER] navigation button for at least 2 seconds.
16. True
17. False
18. The Normal Operations Menu has a \_\_\_\_\_\_\_\_\_ background and the Configuration Menu has a \_\_\_\_\_\_\_\_\_\_ background.
19. white, blue
20. white, red
21. white, yellow
22. If all three alarms are disabled, “ALARMS OFF!” is displayed at the bottom of the normal readings screen in black.
23. True
24. False
25. The user has \_\_\_\_\_\_\_ minutes to apply gas before the calibration times out.
26. two
27. three
28. five
29. A high-level alarm has an audio indicator that beeps with a high frequency and visual alarm LEDs that are pulsed with short delay.
30. True
31. False
32. \_\_\_\_\_\_\_\_\_\_ error events for the instrument are recorded into a FIFO queue in non-volatile memory and are time stamped.
33. Fifteen
34. Twenty
35. Twenty-five
36. The infrared methane sensor is not to be used for methane concentrations below 5% in air.
37. True
38. False
39. Verify the calibration of the combustible gas sensor after any incident where the combustible gas content has caused the instrument to display an over-range condition.
	1. True
	2. False
40. The recommended calibration gas for infrared methane sensor calibration is 99% volume methane.
41. True
42. False
43. A bump test is intended to be a measure of the instruments accuracy.
44. True
45. False
46. Sudden changes in atmospheric pressure may cause temporary fluctuations in the oxygen reading.
47. True
48. False
49. The sensor readings are displayed as solid \_\_\_\_\_\_\_\_ numerals during normal operation, and solid \_\_\_\_\_\_\_\_\_ numerals during alarm conditions.
50. black, black
51. black, red
52. red, red
53. Access to the Configuration Menu cannot be protected using a security password.
54. True
55. False
56. Silicone compound vapors or other known contaminants may affect the combustible gas sensor and cause readings of combustible gas to be lower than actual gas concentrations.
57. True
58. False
59. For calibration, gas should be applied at a flow rate of \_\_\_\_\_\_\_.
60. 0.5 lpm
61. 1.0 lpm
62. 1.5 lpm
63. There are only two different cradles are available for use with the MX6 multi-gas monitor.
64. True
65. False