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 can 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 can be used as a regulator
40. True
41. False
42. The most accurate measurement of air velocity using a smoke tube is obtained by releasing smoke in the center of the airway
43. True
44. False

11. The mission must always be ended when the low-pressure warning output is at approximately 135 psi

* 1. True

1. False

12. The carbon cylinder has a life span of \_\_\_\_\_years

* 1. 5

1. 10
2. 15
3. 20

13. On the relief valve, the over pressure valve opens between

2-5 mbar

1. True
2. False

14. A leak in the dosage line can cause low dosage

1. True
2. False

15. Carbon monoxide contained in the exhaled air is absorbed in the regeneration cartridge

* 1. True
  2. False

16. When installing a relief valve, turn relief valve 45 degrees to the left

* 1. True
  2. False

17. High pressure O2 cylinders contain \_\_\_\_\_% O2

* 1. 96.5

1. 97.5
2. 98.5
3. 99.5

18. When checking the inhalation valve for control function; the pressure gauge must indicate +10 psi

* 1. True
  2. False

19. When testing the CO2 absorber the test pressure should be between +7 mbar and + 10 mbar

* 1. True

1. False

20. When checking components (equipment connector and breathing hoses, CO2 Absorber and Breathing air cooler) with the RZ tester, the pressure loss should not exceed 1.5 mbr/min

* 1. True

1. False

21. The maximum drying temperatures for BG4 parts is \_\_\_\_\_˚C

* 1. 50˚C

1. 55˚C
2. 60˚C
3. 65˚C

22. The relief valve activation occurs at \_\_\_\_\_PSI

* 1. 85
  2. 86
  3. 87
  4. 88

23. Dosage output is 1.5 to 1.9 PSI

* 1. True
  2. False

24. For units that are in constant use the valve disc on the exhalation and inhalation valves need to be replaced every \_\_\_\_\_

* 1. yearly
  2. 2 years
  3. 3 years
  4. 4 years

25. Drager Safety needs to perform a major overhaul of the pressure reducer every 5 years

a. True

b. False

26. Constant dosage for the BG4 apparatus must be 1.5 to 1.8 L/min

a. True

b. False

27. When checking the minimum valve the admission pressure of the minimum valve must be between \_\_\_\_\_ and \_\_\_\_\_mbar

* 1. 0.5 and 2.0

1. 0.1 and 1.5
2. 1.0 and 2.5
3. 0.1 and 2.5

28. To check the relief valve on the BG4; set the pump on positive pressure, pump until relief valve opens, read admission pressure from the pressure gauge and it must be 2 to 7 mbar

a. True

b. False

29. To check the residual warning the cylinder must be closed, observe display unit; the warning must react at approximately 700 psi

a. True

b. False

30. The Panorama Nova mask has a peripheral vision of 95%

a. True

b. False