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. Any location on the body that is closer to the midline is referred to as:
    1. Medial
    2. Recumbent
    3. Lateral
    4. Inferior
15. A bruise that is on then anterior thigh just above the knee could be described as \_\_\_\_\_\_\_\_\_\_\_ to the knee.
    1. Distal
    2. Proximal
    3. Lateral
    4. Medial
16. An Emergency Medial Responder should immediately move a patient EXCEPT when the patient:
    1. Has a blocked airway
    2. Is bleeding severely
    3. Has mild shortness of breath
    4. Is in cardiac arrest
17. The recommended method for opening the airway of a patient with a possible neck or spine injury is the \_\_\_\_\_\_\_\_ maneuver.
    1. Jaw-thrust
    2. Mouth-to-nose
    3. Abdominal thrust
    4. Head-tilt/chin-lift
18. Which one of the following improved ventilation delivered by way of a bag-mask device?
    1. Inserting an oropharyngeal airway
    2. Applying suction for four to six minutes
    3. Alternating chest thrusts and squeezing the bag
    4. Combining finger sweeps with a mouth-to-mouth technique
19. You are caring for a patient complaining of mild shortness of breath and have her on a nasal cannula at 6 liters per minute. What oxygen concentration are you delivering to the patient?
    1. 25%
    2. 29%
    3. 33%
    4. 45%
20. You are caring for a patient with an open chest wound and have covered the wound with an occlusive dressing. The patient becomes increasingly short of breath. You should:
    1. Add another dressing to the wound
    2. Release the dressing to allow air to escape
    3. Apply more pressure to the would
    4. Remove the dressing altogether
21. New miners having no underground mining experiences shall receive no less than 40 hours of training if they are to work underground.
    1. True
    2. False
22. A Miner who has not received the requisite training under Section 115 of the Mine Safety and Health Act of 1977 shall be withdrawn from the mine by order, declaring the miner a hazard to himself and others, issued by an Authorized Representative of the Secretary of Labor.
    1. True
    2. False
23. The first of the annual physical examinations for mine rescue team members shall be completed within 90 days.
    1. True
    2. False
24. Authorized representatives of the Secretary shall have the right of entry to inspect any designated mine rescue station.
    1. True
    2. False
25. Each mine rescue station shall be provided with a portable supply of liquid air, liquid oxygen, pressurized oxygen, or oxygen generating chemicals, and carbon dioxide absorbent chemicals, as applicable to the supplied breathing apparatus and sufficient to sustain each team for 8 hours while using the breathing apparatus during rescue operations.
    1. True
    2. False
26. The most accurate measurement of air velocity using a smoke tube is obtained by releasing smoke in the center of the airway
27. True
28. False
29. The battery icon on the MX6 gas detector at >50% is what color?
30. Blue
31. Yellow
32. Red
33. When calibrated the MX6 using methane concentrations less than 5% of volume, reading accuracy of the infrared methane sensor may not be guaranteed to be better than \_\_\_\_\_\_\_\_?
34. +/- 15%
35. +/- 20%
36. +/- 25%
37. Only MSHA approved instructors shall conduct required mine (rescue training) courses.
    1. True
    2. False
38. Mine rescue SCBA’s will be inspected and tested at intervals not exceeding 30 days.
    1. True
    2. False
39. During mine rescue contest’s gas field testing Nitrogen Oxide readings are considered incorrect if within plus or minus 5%.
    1. True
    2. False
40. During the mine rescue contest’s field competition your team encounters placards marked “intense heat” and/or “fire out of control”. The team decides to regulate the air flow so as to restrict air to the fire and prevent its further advance. This is considered a ventilation change.
    1. True
    2. False
41. Atmospheric pressure and temperature are important factors because they:
    1. affect the rate of diffusion of a gas by ventilation
    2. can cause false readings on gas detection instruments
    3. lower oxygen content in the mine
    4. all of the above
42. The traverse method is used when:
43. Taking a reading with a smoke tube.
44. Taking a reading with an anemometer.
45. Erecting a temporary bulkhead.
46. None of the above.
47. In advancing a fresh air base, after you put up the new air lock, the team should:
    1. Come out of the mine.
    2. Perform gas tests in all dead ends and high places between the old and new fresh air base to ensure that all gases have been flushed from the area.
    3. Proceed beyond the new fresh air base to explore and let other workers check for any gases in the area between the old and new fresh air bases.
    4. Shut off and remove your apparatus since you are in fresh air and will no longer need it.
48. The preferred type of extinguisher for teams is a dry chemical type that contains:
    1. Sodium bicarbonate
    2. Potassium chloride
    3. Carbon tetrachloride
    4. Monoammonium phosphate
49. Burning materials that give off extremely toxic gases in addition to carbon monoxide are:
50. Timbers
51. Hydraulic fluids
52. Neoprene and other synthetic rubber compounds
53. All of the above
54. The three preconditions for opening a sealed fire area are; low oxygen, no carbon monoxide, sufficiently cooled conditions.
    1. True
    2. False
55. An elevated concentration of carbon dioxide in mine air can be harmful because:
    1. it is highly explosive
    2. it increases the breathing rate
    3. it is highly toxic in small concentrations
    4. all of the above
56. Oxides of nitrogen can occur in a mine atmosphere:
    1. when certain explosives are used
    2. when diesel-powered equipment is being used
    3. when electric equipment produces arcs or sparks
    4. all of the above