

**2012 Northern Mine Rescue Contest
Rochester, NY
Written Test – Team Trainer Competition**

Name _____ Company _____

Team Name _____ Contest Position No. _____

Team Member No. _____

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

1. Regulators are used to control and adjust the quality of airflow in the mine in order to ensure proper distribution.
 - a. True
 - b. False

2. With mechanical ventilation, mine fans are used to create the _____ by changing the air pressure at specified points in the mine.
 - a. pressure differential
 - b. constant flow paths
 - c. volumetric airflow
 - d. inertial distribution

3. The basic principle underlying mine ventilation is that air always moves _____.
 - a. when the fan is operating
 - b. wherever the permanent controls direct it to go
 - c. from high pressure regions to low pressure regions
 - d. toward the working faces
 - e. None of the above

4. _____ determines where a gas will stratify in still air in the mine (whether it will rise or fall).
 - a. The atomic number
 - b. The chemical index
 - c. Poisson's Ratio
 - d. Specific gravity
 - e. None of the above

5. Gases respond to cold temperatures by expanding and diffusing more readily.
 - a. True
 - b. False

6. Atmospheric pressure is measured _____.
 - a. on the litmus scale
 - b. using an anemometer
 - c. on a barometer
 - d. with a sling psychrometer

7. It is much more difficult to remove a concentration of a light gas like hydrogen by ventilation than it is to remove the same concentration of a heavier gas like sulfur dioxide.
 - a. True
 - b. False

8. Some toxic gases harm the skin or can be absorbed by the skin. An SCBA will protect you from these gases.
 - a. True
 - b. False

9. The degree to which a toxic gas will affect you depends on three factors: (1) how concentrated the gas is; (2) how toxic the gas is; and (3) _____.
 - a. the Threshold Limit Value of the gas
 - b. whether the gas has an IDLH limit
 - c. how well the gas interacts with oxygen
 - d. how long you are exposed to the gas

10. The mine superintendent or other designated person, as part of the mine emergency command group (Command Center), will likely oversee numerous aspects of rescue and recovery operations.
 - a. True
 - b. False

11. The quickest and most effective way to control external bleeding is _____.
 - a. Elevation
 - b. direct pressure
 - c. tourniquet
 - d. pressure points

12. An occlusive dressing is _____.
- a dressing placed over a wound that will help control the bleeding
 - any material used to hold another dressing in place
 - a special dressing used to create an airtight seal to a wound or body cavity**
 - a thick dressing large enough to allow for complete coverage of wounds
1. Which of the following is a symptom of internal bleeding?
- slow strong pulses
 - warm dry skin
 - shallow and rapid breathing**
 - normal mental status
2. Shock caused by blood loss or by the loss of plasma is classified as _____.
- Anaphylactic
 - Hypovolemic**
 - Cardiogenic
 - Neurogenic
3. The maneuver used to open a patient's airway with a suspected spinal or neck injury is the _____.
- chin lift
 - head lift
 - a. and b.
 - jaw thrust**
4. When providing emergency care for a possible stroke patient, you should _____.
- provide comfort and emotional support to the patient
 - identify if the stroke is due to a bleed or an obstruction
 - identify the area of the brain that is affected from the stroke
 - maintain the patient's airway and be prepared to provide ventilations or CPR if needed**
5. The abdominal cavity is _____.
- superior to the thorax cavity
 - superior to the cranial cavity
 - inferior to the diaphragm**
 - inferior to the pelvic cavity
6. The posterior tibial pulse is felt behind the medial ankle.
- False
 - True**

7. If a patient is not breathing, the more reliable pulse to check to determine if blood is circulating is the _____.
- a. Radial
 - b. posterior tibia
 - c. distal
 - d. carotid
8. The total blood volume in a typical adult body is approximately 12 liters.
- a. False
 - b. True
9. What are the types of BG4 testing?
- a. Quick electronic operational check
 - b. Portable test kits
 - c. Dynamic bench tester
 - d. All of the above
10. The first low-pressure warning occurs when approximately _____ % of the oxygen has been used up.
- a. 95%
 - b. 85%
 - c. 75%
 - d. 65%
 - e. None of the Above
11. A Carbon O2 cylinder has a _____ year lifespan.
- a. 5
 - b. 10
 - c. 12
 - d. 15
12. The O-ring on the plug-in coupling should be replaced at least _____ for units which are in constant use.
- a. Every 6 months
 - b. Every 12 months
 - c. Every 18 months
 - d. Every 24 months

13. To check the exhalation valve, the RZ tester must be set on negative pressure?
- True
 - False
14. When several survivors suffering from physical and/or psychological trauma have been located, the accurate sorting of priority victims may mean the difference between life and death. This sorting of victims is commonly referred to as the “_____” system.
- priority
 - mouflage
 - first line
 - triage
 - None of the above
15. The best way to relieve psychological stress in survivors is to communicate with them _____.
- as soon as possible
 - only when necessary
 - enough to determine what has happened
 - for at least 15 minutes
16. When a team locates a body, the usual procedure is to _____.
- keep calm
 - cover the victim
 - place the victim in a body bag
 - report the location to the command center
17. There are three reasons for the “team check,” these include: _____.
- to make sure that the team is fit and ready to continue
 - give the team a chance to rest
 - break up the monotony of systematic exploration
 - team checks are required by the contest rules
 - to make sure that each team member’s apparatus is functioning properly
 - a., b., and e.
 - a., d., and e.
 - only d.
18. For the purpose of contest work, no barricade will be entered without ventilating in front of the barricade if _____.
- Oxygen is below 17.0%
 - Carbon monoxide exceeds 1,200 ppm
 - Nitrogen Dioxide exceeds 5 ppm
 - All of the above
 - Only a. and b.