

Choose the correct answer to each of the following questions:

1. What is one of the five main causes of oxygen deficiency in the mine?
 - a. Consumption of oxygen by workers
 - b. Oxygen levels greater than 21%
 - c. Methane less than 1.5%
 - d. Improper tools for evaluating oxygen

2. Of the gases we've talked about, which one is toxic if you inhale it?
 - a. Methane 5 to 15%
 - b. Hydrogen sulfide
 - c. Carbon dioxide
 - d. Propane

3. An elevated concentration of nitrogen in mine air can be harmful because:
 - a. it can lower the oxygen content of the air
 - b. it is highly explosive
 - c. it is highly toxic
 - d. all of the above

4. Acetylene would normally be found in a mine atmosphere where:
 - a. diesel equipment is used
 - b. methane has burned or exploded in air with a lowered oxygen content
 - c. leakage has occurred from adjacent oil or gas wells
 - d. battery charging stations are located

5. Gases that are neither toxic nor explosive:
 - a. are not found in mine atmospheres
 - b. are not dangerous
 - c. can be dangerous because they can displace oxygen
 - d. cannot be detected with today's detection instruments

6. Under what conditions would an anemometer be used to determine air velocities?
 - a. When air velocity is under 120 feet per minute
 - b. When air velocity is greater than 10,000 feet per minute
 - c. When air velocity is 120 – 10000 feet per minute
 - d. When you don't have a smoke tube

7. A smoke tube is a device used to:
 - a. Determine oxygen content of the mine atmosphere.
 - b. Determine direction and velocity of airflow.
 - c. Detect carbon monoxide.
 - d. Detect leaks in temporary stoppings.

8. What is a Fresh Air Base (FAB)?
 - a. Base where team receives briefing before going underground
 - b. Base where apparatus are checked/tested
 - c. Base where detection is checked and calibrated
 - d. Base of operations and starting point for rescue and recovery work into irrespirable atmospheres.

9. If at all possible, entry into the mine should be made on:
 - a. A return airway.
 - b. An intake airway.
 - c. The main haulageway.
 - d. The belt entry.

10. Seals in high volatile coal seams are often placed:
 - a. 10 feet from the fire area
 - b. 100 feet from the fire area
 - c. 1,000 feet or more from the fire area
 - d. 10,000 feet or more from the fire area

11. Non-metallic tubes or pipes are inserted in temporary and permanent seals for the purpose of:
 - a. Checking for smoke
 - b. Bleeding off excess pressure from the sealed area
 - c. Collecting air samples from the sealed area
 - d. Ventilating the sealed area

12. What are the possible clues that would aid the mine rescue teams in locating survivors during a mine emergency?
 - a. Self-rescuer covers or cases, or discarded self-rescuers Miner's personal items left or discarded.
 - b. Check in/out tags
 - c. License plate number
 - d. Notes from home

13. What are the procedures a rescue team would employ to enter a refuge chamber or barricade behind which miners are located?
 - a. Retrieve section scoop and knock outby brattice to short circuit ventilation
 - b. If possible, advance fresh air to the area; if it is NOT possible, erect an air lock before entering the refuge chamber or barricade
 - c. When opening a barricade, use as large an opening as possible, and cover the opening with a flap to prevent contamination of the atmosphere
 - d. Try to establish communication with the command center.

14. What is one of the two methods of re-ventilating a sealed fire area, and the advantages and disadvantage

- a. Indirect ventilation is quick, but should only be used if there is conclusive evidence that the fire is out. Indirect ventilation must be used if the mine was sealed on the surface.
- b. Direct ventilation is quick, but should only be used if there is conclusive evidence that the fire is out. Direct ventilation must be used if the mine was sealed on the surface.
- c. The disadvantage of progressive ventilation is that gas conditions can be carefully controlled, and the operation can be halted at any point where conditions seem hazardous. The advantage is that it is a fast process.
- d. Direct ventilation is quick, but should only be used if there is conclusive evidence that the fire is out. Direct ventilation must be used if the mine was not sealed on the surface.

15. Discuss one of the three preconditions for opening a sealed fire area.

- a. The oxygen content of the atmosphere in the sealed area should be low enough so that an explosion is impossible
- b. The oxygen content of the atmosphere in the sealed area should high enough so that an explosion is impossible
- c. The oxygen content of the atmosphere in the sealed area should be low enough so that an explosion is impossible
- d. The carbon dioxide content of the atmosphere in the sealed area should be low enough so that an explosion is impossible