

Rolla Mine Rescue and First Aid Competition

Technician Team Written Test

1. Visually check instrument for damage. Visually inspect the LCD display after it _____.
 - A. flashes
 - B. alarms
 - C. stabilizes
2. When activated, instrument detects and measures concentration of carbon monoxide, methane, oxygen and nitrogen dioxide in the _____ air continuously and simultaneously.
 - A. ambient
 - B. surrounding
 - C. fresh
3. Gases _____ in water can be liberated in large quantities when mine rescue teams disturb the water by walking through it, or by beginning pumping operations.
 - A. diffused
 - B. dissolved
 - C. diluted
4. Specific gravity determines where the gas will stratify in still air in the mine (whether it will rise or fall). It also determines how easily a gas can be _____ or flushed out of the mine by ventilation.
 - A. diluted
 - B. dissolved
 - C. diffused
5. Smoke is a result of _____. It consists of tiny particles of solid and liquid matter suspended in the air. The particles in smoke are usually soot or carbon, and tar-like substances such as hydrocarbons.
 - A. combustion
 - B. fire
 - C. explosion

6. _____ is the ability of a gas to be dissolved in water.
- A. Flammability
 - B. Solubility
 - C. Toxicity
7. A gas that is normally found near the roof or in high places in the mine is said to have a low_____.
- A. Level of toxicity
 - B. Specific Gravity
 - C. Level of Solubility
8. The types and readings of all installed sensors of the MX6 iBird are displayed in _____.
- A. Startup Self-Test
 - B. Normal Operation Mode
 - C. Battery Status
9. A _____ is used to show the direction and velocity of air below 120 feet per minute.
- A. medium velocity anemometer
 - B. Smoke Tube
 - C. magnehelic
10. When activated, MX6 iBird instrument detects and measures concentrations of carbon monoxide, methane, oxygen, and nitrogen dioxide in the ambient air _____.
- A. Intermittently and systematically.
 - B. Continuously and simultaneously.
 - C. Systematically and periodically.
11. Asphyxiation gases cause _____.
- A. tears
 - B. numbness
 - C. suffocation

12. Porous stoppings such as concrete block stoppings are usually plastered on the _____ side to reduce air leakage.

- A. intake
- B. high-pressure
- C. escapeway

13. POGO sticks are devices that are used _____.

- A. As supports on which brattice cloth may be hung
- B. To test the roof and rib
- C. To determine the direction of airflow

14. The odor of blasting powder fumes, together with a reddish-brown color, indicates there are _____ of nitrogen present.

- A. oxides
- B. traces
- C. remnants

15. _____ is a mixture of carbon monoxide and air which results from a mine fire.

- A. Firedamp
- B. Whitedamp
- C. Stinkdamp