

2022 Loveland MNM Day 2 Written Test KEY

Name: _____ Team Name: _____

1. **What explosive gases below may occur in a mine you may be called to work in?**
 - a. Carbon Monoxide, Methane, Carbon Dioxide
 - b. Carbon Monoxide, Methane, Hydrogen Sulfide
 - c. Carbon Dioxide, Nitrogen dioxide, sulfur dioxide

2. **Mine rescue teams are required by federal law to have available?**
 - a. Four detecting devices for each gas normally encountered in the mines the team serves.
 - b. One detecting device for every gas listed as dangerous by the US Bureau of Mines
 - c. One detecting device for each team member.

3. **A nontoxic gas can still be dangerous because it can:**
 - a. Increase oxygen content
 - b. Displace oxygen, burn, explode.
 - c. Causes pneumonia

4. **How does an asphyxiating gas produce an oxygen-deficient atmosphere?:**
 - a. It displaces methane
 - b. It displaces and burns
 - c. It displaces oxygen

5. **Why is it important for you to know about the solubility of certain gases in water?**
 - a. Gases dissolved in water can be liberated in large quantities when mine rescue teams disturb the water by walking through it or by beginning pumping operations.
 - b. Odor or taste of a gas dissolved in water can be liberated in large quantities.
 - c. Gases in the water is liberated in small quantities when mine rescue teams disturb the water

6. **What is the purpose or function of a regulator?**
 - a. Regulators are devices which, by their adjustment, can regulate airflow to meet the individual needs of each air split.
 - b. Regulators are devices which, by their adjustment, can regulate airflow to meet the individual needs of the return air split only.
 - c. Regulators are devices which, by their adjustment, can regulate airflow to meet the individual needs of each intake air split only.

- 7. Why would a team need to be able to build temporary stoppings quickly and effectively?**
- Re-ventilation is essential for the advancement of the command center and flushing out of dangerous gases, and in particular when miners are trapped it is very important to be able to advance the FAB quickly in order to rescue the miners.
 - Re-ventilation is essential for the advancement of the working section and flushing out of dangerous gases, and in particular when miners are trapped it is very important to be able to advance the FAB quickly in order to rescue the miners.
 - Re-ventilation is essential for the advancement of the FAB and flushing out of dangerous gases, and in particular when miners are trapped it is very important to be able to advance the FAB quickly in order to rescue the miners.
- 8. What information is usually transferred from the outgoing team to the backup team at the FAB?**
- Scrubber readings, gas conditions, stoppings constructed.
 - Markings on mine maps, damages, distance traveled, gas conditions, roof and rib conditions.
 - Fan chart readings
- 9. Why is the debriefing session important?**
- It provides the state troopers with more detailed information
 - It ensures all important findings are mentioned and instructs the team as to what they should or should not say to media representatives and others.
 - Provides time check the command center map
- 10. Seals in high volatile coal seams are often placed?**
- 100 foot from fire area
 - 1,000 feet or more from the fire area
 - 10,000 feet or more from the fire area
- 11. Class A fires are fires that?**
- Involve ordinary combustible material such as wood, plastics, paper and cloth.
 - Involve flammable or combustible liquids
 - Involve combustible metals
- 12. What hazards should the team consider when fighting a mine fire directly?**
- Non-Toxic, Non-asphyxiating and explosive gases
 - Electrocution, Oxygen deficiency, Non toxic gases
 - Electrocution, toxic and asphyxiating gases, oxygen deficiency, explosive gases, heat, smoke, steam
- 13. Why should all waterlines, power cables, and track leading into a sealed area be severed or removed before sealing a fire area?**
- Ensures that the sealed area is completely isolated from the other areas of the mine and possible ignition sources.
 - To use the track in other parts of the mine
 - Only remove waterlines if roof conditions permit

- 14. What are the two methods of re-ventilating a sealed fired area?**
- Blow and Exhausting
 - Progressive ventilation and direct ventilation**
 - Auxillary fan and tubing
- 15. What is the disadvantage of progressive ventilation?**
- It is a slow process**
 - It is a quick process
 - It can only be used if the mine was sealed on the surface
- 16. What gas can be detected by the odor or taste of blasting powder fumes?**
- Nitrogen dioxide**
 - Carbon dioxide
 - Hydrogen sulfide
- 17. What is the explosive range of carbon monoxide?**
- 4.3% to 45.5%
 - 12.5% to 74.2%**
 - 5% to 15% in at least 12.1 % oxygen
- 18. A gas that is normally found near the roof or in high places in the mine is said to have a low:**
- Specific gravity**
 - Level of toxicity
 - Level of solubility
- 19. What is the explosive range of a gas?**
- The explosive range of a gas is the concentrations within which a non-flammable gas can explode when there is a specific amount of oxygen present.
 - The explosive range of a gas is the amount of gas that can cause damage to the central nervous system.
 - The explosive range of a gas is the concentrations within which a flammable gas can explode when there is a specific amount of oxygen present.**
- 20. What gases below are highly soluble in water?**
- Hydrogen sulfide and hydrogen
 - Hydrogen sulfide and sulfur dioxide**
 - Nitrogen and sulfur dioxide
- 21. Class B fires are fires that?**
- Involve ordinary combustible material such as wood, plastics, paper and cloth.
 - Involve flammable or combustible liquids such as gasoline, diesel fuel, kerosene, and grease**
 - Involve combustible metals
- 22. Why are burning conveyor belts hazardous to firefighters?**
- Because the conveyor belt emits extremely toxic gases as it is decomposed by the fire.**
 - Many of the gases are more dangerous than carbon dioxide.
 - The power might need to be locked and tagged

- 23. A monoammonium phosphate extinguisher is effective in fighting what class of fires?**
- Class K
 - Class D
 - Class A, B, C
- 24. What procedure below would a rescue team use to enter a refuge chamber or barricade behind which miners are located?**
- Try to establish communication and if possible advance fresh air to the area.
 - If it is not possible to advance fresh air to the area then note it on the map
 - When opening a barricade you always have to erect an air lock
- 25. What is one precondition for opening a sealed fire area?**
- There should be no carbon monoxide indicating the fire is out
 - There should be no carbon dioxide indicating the fire is out
 - The oxygen should be high enough to that an explosion is possible
- 26. Debriefings are held to:**
- Inform news reporters of developments
 - Inform family members of developments
 - Review the teams findings after they have returned from underground
- 27. Prior to a team passing through a door or stopping/bulkead behind which conditions are not definitely known, they should ?**
- Erect an airlock to prevent the mixing of atmospheres
 - Ask FAB to send in the back up team
 - Open the door and wait 10 minutes to see if the gases diffuse
- 28. A gas that is normally found near the roof or in high places in the mine is said to have a low:**
- Level of toxicity
 - Level of explosibility
 - Specific gravity
- 29. What factors affect a team's rate of travel?**
- Falls and obstructions, water, smoke, fatigue, amount/weight of equipment carried, degree of slope.
 - Falls and obstructions, water, smoke, fatigue, amount/weight of equipment carried.
 - Water, smoke, fatigue, amount/weight of equipment carried, degree of slope.
- 30. Gas readings should be taken:**
- At all intersections, at any dead end or face area, at the furthest point of travel in any entry or heading
 - At all intersections or any dead end or face area
 - At all intersections and the furthest point of travel in any entry or heading