

**2019 Missouri Regional Mine Rescue Contest  
Rolla, MO  
Written Test – Field Competition**

Name \_\_\_\_\_ Company \_\_\_\_\_

Team Name \_\_\_\_\_ Contest Position No. \_\_\_\_\_

Team Member No. \_\_\_\_\_

**Directions: Use answer sheet & fill in completely.**

Q#1) One of the four main causes for oxygen deficiency in a mine are:

- A) Atmospheric pressure;
- B) Proper ventilation;
- C) A fire or explosion;
- D) None of the above.

Q#2) To isolate the fresh air base from the unexplored area beyond it a \_\_\_\_\_ should be built.

- A) Regulator;
- B) Check curtain;
- C) Airlock;
- D) Line brattice

Q#3) When building an airlock to access a refuge chamber it should be just large enough to:

- A) Fit 1 or 2 members of the team for entering;
- B) Fit the team & all necessary equipment
- C) Perform assessment and extraction
- D) Fit a mine fan for clearing the air.

Q#4) One of the most poisonous gases known is:

- A) Methane
- B) Oxygen
- C) Hydrogen Sulfide;
- D) Carbon Dioxide.

Q#5) A gas that can cause suffocation or choking is considered to be:

- A) Flammable;
- B) Asphyxiating;
- C) Insoluble;
- D) Soluble.

Q#6) Carbon Monoxide is a product of:

- A) Incomplete combustion;
- B) Battery Charging;
- C) Breathing;
- D) All of the above.

Q#7) Recovery by progressive ventilation is very similar to:

- A) Establishing a command center;
- B) Establishing a benching area;
- C) Advancing a fresh air base;
- D) Advancing the electrical power.

Q#8) Which two legs of the fire triangle are removed when using high expansion foam to contain and control a fire?

- A) Fuel and Oxygen;
- B) Heat and Fuel;
- C) Oxygen and Heat;
- D) Oxygen and Chemical reaction.

Q#9) Solubility is the ability of a gas to be:

- A) Dispersed by water;
- B) Concentrated in air;
- C) Dispersed by air;
- D) Dissolved in water.

Q#10) The explosive range of Hydrogen Sulfide is:

- A) 0 to 4 percent;
- B) 4.3 to 45.5 percent;
- C) 4 to 45 percent;
- D) 75 to 99 percent.

Q#11) Where conditions no longer permit barefaced exploration a \_\_\_\_\_ is established.

- A) Triage Area;
- B) Command Center;
- C) Fresh air base;
- D) Benching area.

Q#12) Which of the following should be emphasized as critical importance:

- A) Establishing a laboratory to test air samples;
- B) Maintaining communications between the team and fresh air base;
- C) Setting up sleeping quarters;
- D) Talking to the press.

Q#13) All of the following should be done with ventilation controls during exploration of the ventilation system except:

- A) Checked for what condition they are in;
- B) Reported to command center;
- C) Removed when impeding travel;
- D) Altered upon orders from the command center.

Q#14) Atmospheric pressure is measured using a:

- A) Gas Detector;
- B) Thermometer;
- C) Barometer;
- D) Calibrator.

Q#15) On a mine map the symbol \_\_\_\_\_ represents?

- A) Track;
- B) Line brattice;
- C) Permanent bulkhead;
- D) Conveyor belt.

Q#16) As the team proceeds the information relayed to the fresh air base is called:


- A) Briefing;
- B) Debriefing;
- C) Progress reporting;
- D) Tying in.

Q#17) Tiny amounts of Sulphur Dioxide will:

- A) Have no affect at all;
- B) Burn and irritate the skin;
- C) Cause suffocating and choking;
- D) Irritate the eyes and respiratory tract.

Q#18) Federal regulations require mines to have and post a \_\_\_\_\_ for notifying all the mine rescue teams that will be needed to assist in an event.

- A) An Miner Representative's letters;
- B) Part 48(a) Training Plan;
- C) Part 48(b) Training Plan;
- D) Mine Rescue Notification Plan.

- Q#19) How quickly a gas will diffuse or disperse is dependent on:
- A) The temperature;
  - B) The specific gravity of the gas;
  - C) The pressure;
  - D) All of the above.
- Q#20) Class A fires involve:
- A) Combustible metals;
  - B) Combustible liquids;
  - C) Electric equipment;
  - D) Ordinary Combustible materials.
- Q#21) On a mine map the symbol  represents?
- A) Mine door;
  - B) Check curtain;
  - C) Man door;
  - D) Temporary bulkhead.
- Q#22) When a team locates a body they should:
- A) Ignore it & keep moving;
  - B) Mark it on the map;
  - C) Report it to Command center;
  - D) Both B and C.
- Q#23) Duties of the mine's safety director could include the following except:
- A) Obtain maps or adjoining mines;
  - B) Assemble mine rescue teams and first aid crews;
  - C) Provide facilities and equipment for working on breathing apparatus;
  - D) Assign personnel to track mine rescue equipment.
- Q#24) Unmanageable fear or emotional excess is called:
- A) Hypothermia;
  - B) Hyperthermia;
  - C) Hysteria;
  - D) Hysteresis.
- Q#25) Carbon monoxide has an explosive range in normal air of:
- A) 75 to 100 percent;
  - B) 12.5 to 74.2 percent;
  - C) 0 to 12 percent.
  - D) All of the above.

Q#26) It is generally recommended that teams use multi-purpose dry chemical extinguishers that contain monoammonium phosphate because they are:

- A) Easy to carry;
- B) Light weight;
- C) Effective on multiple classes of fire;
- D) Easy seen.

Q#27) The headquarters for the rescue and recovery operations are located in the:

- A) Fresh Air Base;
- B) Command Center;
- C) Bench Area;
- D) Triage Area.

Q#28) Unsealing a fire area:

- A) Can be done whenever needed;
- B) Requires electrical power;
- C) Requires careful planning;
- D) Requires no gas tests.

Q#29) Prior to a mine rescue team passing through a door or bulkhead behind which conditions are not definitely known, they should:

- A) Never enter such areas;
- B) Open the door or bulkhead and wait at least 10 minutes to diffuse any harmful gases;
- C) Ask the fresh air base to send in the backup team;
- D) Erect a temporary bulkhead outside it.

Q#30) When establishing priorities for triage, deep shock is considered a:

- A) Low priority condition;
- B) Third priority condition;
- C) Second priority condition;
- D) First priority condition.

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**Written Test Answers – Field Competition**

- A#1) C) Module 2; Page 14; Paragraph 2.
- A#2) C) Module 4; Page 7; Paragraph 3
- A#3) B) Module 6; Page 5; First Sentence.
- A#4) C) Module 2; Page 19; Paragraph 12.
- A#5) B) Module 2; Page 10; Paragraph 2.
- A#6) A) Module 2; Page 16; Paragraph 10-Cause or Origin.
- A#7) C) Module 7; Page 8; Paragraph 2
- A#8) C) Module 5; Page 10; Paragraph 4
- A#9) D) Module 2; Page 7; Paragraph 8.
- A#10) B) Module 2; Page 19; Paragraph 11-Explosive Range and Flammability.
- A#11) C) Module 4; Page 6; Paragraph 6
- A#12) B) Module 1; Page 6; Paragraph 7.
- A#13) C) Module 3; Page 3; Paragraph 4.
- A#14) C) Module 2; Page 5; Paragraph 6.
- A#15) B) Module 3; Page 7; Commonly used Mine Map symbols.
- A#16) C) Module 4; Page 53; Paragraph 7
- A#17) D) Module 2; Page 21; Paragraph -Health Hazards
- A#18) D) Module 1; Page 3; Paragraph 2.
- A#19) D) Module 2; Page 7; Paragraph 4.
- A#20) D) Module 5; Page 5; Paragraph 4
- A#21) C) Module 3; Page 7; Commonly used Mine Map symbols.
- A#22) D) Module 6; Page 8; Paragraph 5
- A#23) A) Module 1; Page 9; Paragraph 1.
- A#24) C) Module 6; Page 14; Paragraph 4
- A#25) B) Module 2; Page 16; Paragraph 4-Explosive Range and Flammability.
- A#26) C) Module 5; Page 6; Paragraph 6
- A#27) B) Module 1; Page 14; Paragraph 4.
- A#28) C) Module 7; Page 4; Paragraph 8
- A#29) D) Module 4; Page 26; Paragraph 3
- A#30) D) Module 6; Page 5; Paragraph 7