**ROCKY’S M/NM MINE RESCUE CHALLENGE**

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| **Question No.** | **Question** | **Where Found** |
| 1 | When advancing into an area that has been inundated with water, teams should pay special attention to \_\_\_\_\_\_\_\_\_\_\_\_\_. Ventilation Soluble Gases Ground Conditions [Module pg. 7-13]  None of the above | 2015 SW Regional Mine Rescue |
| 2 | Normal air is composed of 66% Nitrogen, 24% oxygen, 8% carbon dioxide and 2% other gasses.  True  False [Page 2-45 Pub 3027 module 2] | 2015 Denver Mine Rescue |
| 3 | If you wear your SCBA in petroleum-based fumes for prolonged or successive periods, the fumes can eventually permeate its rubber parts so that the apparatus no longer provides you with adequate protection.  True (Modules pg. 2-10)  False | 2015 Ruidoso Trainer |
| 4 | If the oxygen content of the air you’re breathing drops as low as \_\_\_\_\_ percent, you may lose consciousness.  12  10  9 (Modules pg. 2-12)  8 | 2015 Ruidoso Trainer |
| 5 | Bulkhead and stopping are two different terms for two different ventilation controls.  True  False (Modules pg. 3-8) | 2015 Ruidoso Trainer |
| 6 | \_\_\_\_\_\_\_ are usually built at shaft stations and other strategic locations so that if there is a fire they can be closed to serve as a barrier to the fire and contaminated air.  Air Doors  Permanent Stoppings  Fire Doors (Modules pg. 3-12)  Line Curtains | 2015 Ruidoso Trainer |
| 7 | The \_\_\_\_\_\_\_\_\_\_ cavity houses the brain and its specialized membranes.  Thoracic  Abdominal  Pelvic  Cranial - (Brady 9th Edition Ch. 4 pg. 63) | 2015 Ruidoso Trainer |
| 8 | The following gasses oxygen, butane, hydrogen sulfide and carbon dioxide are all found:  At about the same level as normal air.  Seeking high places.  Seeking low places.  None of the above. (page 2-47 Pub 3027 Module 2) | 2015 Denver Mine Rescue |
| 9 | What conditions would indicate the presence of oxides of nitrogen?  A reddish brown color and the odor of blasting powder fumes. (page 2-8 Pub 3027 module 2)  The odor of blasting powder fumes and sour taste.  A sweet taste with reddish brown color.  The odor of blasting powder fumes and sour taste. | 2015 Denver Mine Rescue |
| 10 | The first set of vital signs obtained on any patient is referred to as the \_\_\_\_\_\_\_ set.  Historical  Ongoing  Baseline (Page 222)  Serial | 2015 Tennessee FA |
| 11 | Hypoxia is a general term referring to the inability of a person to breathe adequately.  True  False (Page 291) Respiratory compromise | 2015 Tennessee FA |
| 12 | Wounds such as skinned elbows and knees are miner open wounds known as:  Avulsions  Lacerations  Abrasions (Page 372)  Punctures | 2015 Tennessee FA |
| 13 | Reestablishing ventilation and bringing fresh air to an area damaged by fire or explosion is the main task of mine rescue teams in a rescue operation.  True  False (Modules pg. 7-4) | 2015 Ruidoso Mine Rescue |
| 14 | Air locking operations should never be undertaken until the oxygen content of the air behind the seals has been reduced to at least \_\_\_\_\_\_\_\_\_%.  2.0% (Modules pg. 7-7)  .05%  1%  5.0% | 2015 Ruidoso Mine Rescue |
| 15 | You can allow a rescued miner to walk out of the mine alone if the miner appears to be in good shape?  True  False (Modules pg. 6-7) | 2015 Ruidoso Mine Rescue |
| 16 | Putrefaction is the decomposition of organic matter by bacteria, fungi, and oxidation, resulting in the formation of foul-smelling products.  True (Modules pg. 6-14)  False | 2015 Ruidoso Mine Rescue |
| 17 | \_\_\_\_\_\_\_\_\_ are spring-loaded expandable metal rods that can be used to erect a temporary stopping.  Curtain rods  Post sticks  Stopping rods  Pogo sticks (Modules pg. 3-22) | 2015 Ruidoso Mine Rescue |
| 18 | Rock Strata gases commonly called “rock gas” are assumed to contain what two types of gasses?  Hydrogen and Carbon Monoxide  Nitrogen and Sulfur Dioxide  Nitrogen and Carbon Dioxide (Modules pg. 2-26)  Hydrogen Sulfide and Hydrogen | 2015 Ruidoso Mine Rescue |
| 19 | Oxygen content at \_\_\_\_\_ will cause dizziness and headaches.  17 percent  16 percent  15 percent (Modules pg. 2-14)  None of the above | 2015 Ruidoso Mine Rescue |
| 20 | In a multi-level mine, a tunnel driven perpendicular to the main vein system of the mine is considered a?  Drift  Stope  Crosscut (Modules pg. 3-53)  None of the above | 2015 Ruidoso Mine Rescue |
| 21 | Another source of nitrogen in underground mines is the detonation of explosives.  True (Modules pg. 2-14)  False | 2015 Ruidoso Mine Rescue |
| 22 | In a multi-level mine, a tunnel driven perpendicular to the main vein system of the mine is considered a \_\_\_\_\_\_\_\_?  Drift  Stope  Crosscut (Modules pg. 3-53)  None of the above | 2015 Ruidoso Mine Rescue |
| 23 | The purpose of a permanent stopping is to separate two different atmospheres while still permitting miners to enter and exit without mixing the atmospheres.  True  False (Modules pg. 3-23) | 2015 Ruidoso Mine Rescue |
| 24 | Very violent explosions are possible when air contains more than 7 to 8 percent hydrogen.  True (Modules pg. 2-18)  False | 2015 Ruidoso Mine Rescue |
| 25 | The degree to which a toxic gas will affect you depends on three factors: 1) how concentrated the gas is 2) how explosive the gas is and 3) how long you’re exposed to the gas?  True  False (Modules pg. 2-9) | 2015 Ruidoso Mine Rescue |
| 26 | Gas detectors must measure concentrations of carbon monoxide from 0.0 parts per million to at least 999 parts per million.  True  False [MSHA 3027 (IG6) 2008, pg.2-3] | 2014 Georgia Mine Rescue |
| 27 | Knowing the effects of air current, temperature, and pressure on a gas will help you determine its \_\_\_\_\_\_\_\_\_.­­­­­­­­­­­­­­­­­­­­­­­­­­­­­­­­  identity  flammability  rate of diffusion [MSHA 3027 (IG6) 2008, pg.2-3]  none of the above | 2014 Georgia Mine Rescue |
| 28 | Any flammable gas can explode under certain conditions. In order for a flammable gas to explode, there must be enough of the gas in the air, enough oxygen, and a source of \_\_\_\_\_\_\_\_\_\_.  Carbon Monoxide  Water  Ignition [MSHA 3027 (IG6) 2008, pg.2-7]  Methane | 2014 Georgia Mine Rescue |
| 29 | TLV, or threshold limit value is used to denote the \_\_\_\_\_\_\_\_\_ concentrations of gases to which workers can (under Federal regulations) be exposed over an 8-hour daily period.  Highest  Lowest  Average [MSHA 3027 (IG6) 2008, pg.2-74]  Maximum | 2014 Georgia Mine Rescue |
| 30 | The sorting of victims is commonly referred to as a “triage” system. A fractured arm, hand, or foot takes priority over a miner suffering from moderate heat exhaustion.  True  False [MSHA 3027 (IG6) 2008, pg.6-6] | 2014 Georgia Mine Rescue |
| 31 | Any combustible gases in the main exhaust should, if feasible, be  kept below the LEL. LEL means:  Limit ending level  Lowest exposure limit  Lowest explosive limit [MSHA 3027 (IG6) 2008, pg.7-9]  Lightest exposure level | 2014 Georgia Mine Rescue |
| 32 | High expansion foam is used mainly to contain and control fire by removing two legs of the fire triangle—oxygen and fuel.  True  False [MSHA 3027 (IG6) 2008, pg.5-10] | 2014 Georgia Mine Rescue |
| 33 | Urethane foam is an effective sealant when used around the perimeter of a seal. Urethane foam should never be applied more than \_\_\_\_\_\_thick because of the potential for spontaneous combustion with greater thicknesses.  two inches  ½ inch  three inches  one inch [MSHA 3027 (IG6) 2008, pg.5-23] | 2014 Georgia Mine Rescue |
| 34 | Please choose the class for an electrical fire from the choices below:  “A”  “B”  “C” [MSHA 3027 (IG6) 2008, pg.5-31]  “D” | 2014 Georgia Mine Rescue |
| 35 | Carbon monoxide gas will not explode.  True  False [MSHA 3027 (IG6) 2008, pg.2-17] | 2014 Georgia Mine Rescue |
| 36 | The first symptom of carbon monoxide poisoning is:  Nausea  Slight tightening across the forehead with a possible headache. [MSHA 3027 (IG6) 2008, pg.2-16]  Dizziness  Blurred vision | 2014 Georgia Mine Rescue |
| 37 | Air locks are not required prior to opening a refuge chamber, barricade, or door in irrespirable atmospheres behind which survivors may be located.  True  False [MSHA 3027 (IG6) 2008, pg.3-23] | 2014 Georgia Mine Rescue |
| 38 | Before going underground, the team should make sure that the main fan is running, that a guard is monitoring the operation of the fan, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  that any indication of fire has been determined  the Team Captain has tested all respiratory devices  families of the miners involved are being counseled  tests are being made at the main exhausts for any gases that may be present in the mine. [MSHA 3027 (IG6) 2008, pg.5-12] | 2014 Georgia Mine Rescue |
| 39 | Elevated readings of \_\_\_\_\_\_\_\_\_\_\_ could indicate that there is inadequate ventilation around battery charging stations.  Carbon Monoxide  Hydrogen [MSHA 3027 (IG6) 2008, pg.2-19]  Nitrogen Dioxide  Carbon Dioxide | 2014 Georgia Mine Rescue |
| 40 | You may recognize \_\_\_\_\_\_\_\_\_\_\_ by its distinctive “rotten egg” odor.  Hydrogen  Carbon Dioxide  Carbon Monoxide  Hydrogen Sulfide [MSHA 3027 (IG6) 2008, pg.2-20] | 2014 Georgia Mine Rescue |
| 41 | The extremely toxic gas, Nitrogen Dioxide, is produced by all fires because of the incomplete combustion of carbon materials during the burning process.  True  False [MSHA 3027 (IG6) 2008, pg.5-15] | 2014 Georgia Mine Rescue |
| 42 | \_\_\_\_\_\_\_\_\_\_\_\_ is a toxic gas and exposure to .01 to .015 percent (100 to 150 ppm) can be dangerous for even short exposures.  Hydrogen  Carbon Dioxide  Methane  Nitrogen Dioxide [MSHA 3027 (IG6) 2008, pg.2-17] | 2014 Georgia Mine Rescue |
| 43 | The explosive range for \_\_\_\_\_\_\_\_\_\_ is 4.0 to 74.2 percent when there is at least 5 percent oxygen present.  Hydrogen Sulfide  Carbon Dioxide  Carbon Monoxide  Hydrogen [MSHA 3027 (IG6) 2008, pg.5-16] | 2014 Georgia Mine Rescue |
| 44 | When the barometer falls, this means:  Gases will diffuse more quickly [ Module 2-page12]  The atmospheric pressure is rising  It is much easier for explosive gases to build up  Gases are squeezed into a smaller area | 2014 Georgia Trainer |
| 45 | Methane is most explosive at what range?  5% to 15% with at least 12.1% oxygen  9.5% to 12.5% with at least 12.1% oxygen  5% to 10%  9.5% to 10% [Module 2—page 43] | 2014 Georgia Trainer |
| 46 | Electrical malfunctions can produce oxides of nitrogen.  True [Module 2—page 35]  False | 2014 Georgia Trainer |
| 47 | Any location on the body that is closer to the midline is referred to as:  Medial [Brady 9th, page 89, question 4]  Recumbent  Lateral  Inferior | 2014 Georgia Trainer |
| 48 | A bruise that is on then anterior thigh just above the knee could be described as \_\_\_\_\_\_\_\_\_\_\_ to the knee.  Distal  Proximal [Brady 9th, page 89, question 4]  Lateral  Medial | 2014 Georgia Trainer |
| 49 | The first of the annual physical examinations for mine rescue team members shall be completed within 90 days.  True  False [30 CFR 49.17(a)] | 2014 Georgia Trainer |
| 50 | Each mine rescue station shall be provided with a portable supply of liquid air, liquid oxygen, pressurized oxygen, or oxygen generating chemicals, and carbon dioxide absorbent chemicals, as applicable to the supplied breathing apparatus and sufficient to sustain each team for 8 hours while using the breathing apparatus during rescue operations.  True [30CFR 49.16(a)(2)]  False | 2014 Georgia Trainer |
| 51 | Mine rescue SCBA’s will be inspected and tested at intervals not exceeding 30 days.  True [30 CFR 49.6(b)(1)]  False | 2014 Georgia Trainer |
| 52 | Atmospheric pressure and temperature are important factors because they:  affect the rate of diffusion of a gas by ventilation [ Module 2- page 71]  can cause false readings on gas detection instruments  lower oxygen content in the mine  all of the above | 2014 Georgia Trainer |
| 53 | The traverse method is used when:  Taking a reading with a smoke tube.  Taking a reading with an anemometer. [Module 3 – page 49]  Erecting a temporary bulkhead.  None of the above. | 2014 Georgia Trainer |
| 54 | The preferred type of extinguisher for teams is a dry chemical type that contains:  Sodium bicarbonate  Potassium chloride  Carbon tetrachloride  Monoammonium phosphate [Module 5 – page 47] | 2014 Georgia Trainer |
| 55 | Burning materials that give off extremely toxic gases in addition to carbon monoxide are:  Timbers  Hydraulic fluids  Neoprene and other synthetic rubber compounds [Module 5-47]  All of the above | 2014 Georgia Trainer |
| 56 | The three preconditions for opening a sealed fire area are; low oxygen, no carbon monoxide, sufficiently cooled conditions.  True [Module 7 – page 11]  False | 2014 Georgia Trainer |
| 57 | An elevated concentration of carbon dioxide in mine air can be harmful because:  it is highly explosive  it increases the breathing rate [Module 2 – page 69]  it is highly toxic in small concentrations  all of the above | 2014 Georgia Trainer |
| 58 | Oxides of nitrogen can occur in a mine atmosphere:  when certain explosives are used  when diesel-powered equipment is being used  when electric equipment produces arcs or sparks  all of the above [Module 2 – page 69] | 2014 Georgia Trainer |
| 59 | Carbon Dioxide is a heavier gas and will diffuse rapidly.  True  False [MSHA 3027 (IG6) 2008, pg.2-7] | 2014 Georgia Trainer |
| 60 | After Damp is:  Toxic and explosive  A mixture of four mine gasses  Is always present after a mine fire or explosion  A and C [Pages 2-27 & 2-28, MSHA 3027]  None of the above | 2013 Nevada |