**2014 Tri State Ohio Valley Mine Rescue**

**NMRA Post # 6**

**Bio-Pak 240 R Written Examination**

1. Oxygen will \_\_\_\_ cause materials to \_\_\_\_\_\_\_ without the presence of an ignition source.

always, ignite not, ignite sometimes, burn

1. The BioPak 240 Revolution is approved when the oxygen cylinder is fullycharged with compressed \_\_\_\_\_\_\_ or aviation grade oxygen at \_\_\_\_\_ psi.

construction, 3010 medical, 2660 medical, 3000

1. Always \_\_\_\_\_\_ for a current \_\_\_\_\_\_\_\_ test date.

look, manufacturers check, hydrostatic check, manufacturers

1. Replace the battery when the low battery alarm has activated, after \_\_\_\_ \_\_\_\_\_ of use or every 6 months whichever comes first.

100, hours 200, days 200, hours

1. The usual scrubber consists of \_\_\_\_\_\_\_\_\_ and a \_\_\_\_\_\_ core. Do not reuse previously used CO2 absorbent cartridges or the rubber gaskets.

pumice, paper limestone, paper limestone, plastic

1. Allow all components to remain \_\_\_\_\_\_ by the cleaning solution a minimum of 10 minutes.

wetted moist soaked

1. Apply anti-fog solution or \_\_\_\_\_ to both halves of the \_\_\_\_\_\_\_ before every use to ensure mask lens do not scratch.

water, felt water, chamois soap, chamois

1. Do not expose opened CO2 scrubber cartridges to \_\_\_\_\_\_\_ air for more than 20 minutes.

outside dry ambient

1. Install each CO2 canister into the SCBA so that the \_\_\_\_ end cap is \_\_\_\_\_\_\_ on the top side of the canister.

red, looking blue, visible red, visible

1. A low battery alarm is indicated by a Red, Green, Blue light sequence followed by a \_\_\_\_\_ alarm \_\_\_\_\_ any time the battery will not complete a four-hour mission.

momentary, beep short, beep short, chirp

1. If a quick Turn-Around \_\_\_\_\_\_\_\_\_\_\_ has been performed, the SCBA will function and is designed to work wet.

Cleaning Maintenance Testing

1. The RMS will automatically \_\_\_\_\_ \_\_\_\_\_\_ once the system pressure has dropped below 25 psig.

power, down turn, off power, up

1. \_\_\_\_\_\_-\_\_\_\_ and Dow-111 are the only o-ring lubricants that shall be utilized on the SCBA components.

Cristo-Grease Silicone-Lube Cristo-Lube

1. \_\_\_\_\_\_ Use Dow 111 on any o-ring seal that comes in contact with high-pressure

oxygen.

 ALWAYS NEVER SOMETIMES

1. High breathing \_\_\_\_\_\_\_\_ during \_\_\_\_\_\_\_\_\_ could be caused by the facepiece exhalation valve sticking closed.

rates, inhalation rates, exhalation resistance, exhalation

1. High breathing resistance during inhalation could be caused by the facepiece \_\_\_\_\_\_\_\_\_ check valve sticking closed.

inhalation exhalation breathing

1. High breathing \_\_\_\_\_\_\_\_\_\_ during \_\_\_\_\_\_\_\_\_\_ could be caused by the demand valve in breathing chamber has failed.

resistance, exhalation resistance, inhalation rates, breathing

1. BioPak weight, ready to use is 34 pounds.

43 34 36

1. BioPak Carbon Dioxide Scrubber is Dual, single use \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ cartridges, non-dusting, non-channeling, non-hazardous.

Limestone Pellets Calcium Hydroxide Calcium Pellets

1. The CO2 Scrubber should be replaced after \_\_\_ use.

every multiple 1

**Tri State Ohio Valley Mine Rescue Contest**

**Bio-Pak 240 R**

**Identification of Parts Test of the Written Exam**



#7

# 1

#12

21. Identify # 1 A. Upper Housing Shell

 B. Lower Hosing Shell

 C. Lower Case Shell

22. Identify # 7 A. Shell Spacer

 B. Aluminum Spacer

 C. Vent Spacer

23. Identify # 12 A. Shell Foam Spacer

 B. Latch Foam Pad

 C. Moisture Pads



24. Identify # 1 A. Bypass Supply Line

 B. Bypass Feed Tube

 C. Bypass Oxygen Line

25. Identify # 3 A. Oxygen Feed Tube

 B. Oxygen Feed Line

 C. Oxygen Feed Branch

26. Identify # 9 A. Oxygen Regulator Gage

 B. Air Regulator Monitor

 C. Oxygen Regulator Assembly



27. Identify # 2 A. Oxygen Supply Line

 B. Demand Feed Tube

 C. Oxygen Feed Tube

28. Identify # 9 A. Demand Add Line

 B. Demand Add Fitting

 C. Demand Add Fixture

29. Identify # 14 A. Breathing Diaphragm

 B. Flexible Shell

 C. Flexible Diaphragm



30. Identify # 9 A. AV 3500 Facepiece Adapter

 B. AV 3500 Facepiece Connector

 C. AV 3500 Hose Adapter

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**NMRA Post # 6**

**Bio-Pak 240 R Written Examination**

**ANSWERS**

1. Oxygen will \_\_\_\_ cause materials to \_\_\_\_\_\_\_ without the presence of an ignition source.

always, ignite not, ignite sometimes, burn (SF #9)

1. The BioPak 240 Revolution is approved when the oxygen cylinder is fullycharged with compressed \_\_\_\_\_\_\_ or aviation grade oxygen at \_\_\_\_\_ psi.

construction, 3010 medical, 2660 medical, 3000 (SF # 12)

1. Always \_\_\_\_\_\_ for a current \_\_\_\_\_\_\_\_ test date.

look, manufacturers check, hydrostatic check, manufacturers (SF # 15)

1. Replace the battery when the low battery alarm has activated, after \_\_\_\_ \_\_\_\_\_ of use or every 6 months whichever comes first.

100, hours 200, days 200, hours (SF # 20)

1. The usual scrubber consists of \_\_\_\_\_\_\_\_\_ and a \_\_\_\_\_\_ core. Do not reuse previously used CO2 absorbent cartridges or the rubber gaskets.

pumice, paper limestone, paper limestone, plastic (SF # 25)

1. Allow all components to remain \_\_\_\_\_\_ by the cleaning solution a minimum of 10 minutes.

wetted moist soaked (SF # 31)

1. Apply anti-fog solution or \_\_\_\_\_ to both halves of the \_\_\_\_\_\_\_ before every use to ensure mask lens do not scratch.

water, felt water, chamois soap, chamois (SF # 35)

1. Do not expose opened CO2 scrubber cartridges to \_\_\_\_\_\_\_ air for more than 20 minutes.

outside dry ambient (SF # 39)

1. Install each CO2 canister into the SCBA so that the \_\_\_\_ end cap is \_\_\_\_\_\_\_ on the top side of the canister.

red, looking blue, visible red, visible (SF # 41)

1. A low battery alarm is indicated by a Red, Green, Blue light sequence followed by a \_\_\_\_\_ alarm \_\_\_\_\_ any time the battery will not complete a four-hour mission.

momentary, beep short, beep short, chirp (SF # 47)

1. If a quick Turn-Around \_\_\_\_\_\_\_\_\_\_\_ has been performed, the SCBA will function and is designed to work wet.

Cleaning Maintenance Testing (SF # 51)

1. The RMS will automatically \_\_\_\_\_ \_\_\_\_\_\_ once the system pressure has dropped below 25 psig.

power, down turn, off power, up (SF # 54)

1. \_\_\_\_\_\_-\_\_\_\_ and Dow-111 are the only o-ring lubricants that shall be utilized on the SCBA components.

Cristo-Grease Silicone-Lube Cristo-Lube (SF # 56)

1. \_\_\_\_\_\_ Use Dow 111 on any o-ring seal that comes in contact with high-pressure

oxygen.

 ALWAYS NEVER SOMETIMES (SF # 57)

1. High breathing \_\_\_\_\_\_\_\_ during \_\_\_\_\_\_\_\_\_ could be caused by the facepiece exhalation valve sticking closed.

rates, inhalation rates, exhalation resistance, exhalation(SF 68)

1. High breathing resistance during inhalation could be caused by the facepiece \_\_\_\_\_\_\_\_\_ check valve sticking closed.

inhalation exhalation breathing (SF # 71)

1. High breathing \_\_\_\_\_\_\_\_\_\_ during \_\_\_\_\_\_\_\_\_\_ could be caused by the demand valve in breathing chamber has failed.

resistance, exhalation resistance, inhalation rates, breathing(SF73)

1. BioPak weight, ready to use is 34 pounds.

43 34 36 (SF # 76)

1. BioPak Carbon Dioxide Scrubber is Dual, single use \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ cartridges, non-dusting, non-channeling, non-hazardous.

Limestone Pellets Calcium Hydroxide Calcium Pellets (SF # 78)

1. The CO2 Scrubber should be replaced after \_\_\_ use.

every multiple 1 (SF # 85)

**Tri State Ohio Valley Mine Rescue Contest**

**Bio-Pak 240 R**

**Identification of Parts Test of the Written Exam**



#7

# 1

#12

21. Identify # 1 A. Upper Housing Shell

 B. Lower Hosing Shell

 C. Lower Case Shell

22. Identify # 7 A. Shell Spacer

 B. Aluminum Spacer

 C. Vent Spacer

23. Identify # 12 A. Shell Foam Spacer

 B. Latch Foam Pad

 C. Moisture Pads



24. Identify # 1 A. Bypass Supply Line

 B. Bypass Feed Tube

 C. Bypass Oxygen Line

25. Identify # 3 A. Oxygen Feed Tube

 B. Oxygen Feed Line

 C. Oxygen Feed Branch

26. Identify # 9 A. Oxygen Regulator Gage

 B. Air Regulator Monitor

 C. Oxygen Regulator Assembly



27. Identify # 2 A. Oxygen Supply Line

 B. Demand Feed Tube

 C. Oxygen Feed Tube

28. Identify # 9 A. Demand Add Line

 B. Demand Add Fitting

 C. Demand Add Fixture

29. Identify # 14 A. Breathing Diaphragm

 B. Flexible Shell

 C. Flexible Diaphragm



30. Identify # 9 A. AV 3500 Facepiece Adapter

 B. AV 3500 Facepiece Connector

 C. AV 3500 Hose Adapter