

Technician Team Test – **Biomarine BioPak 240R**

2015 Northern Nevada Regional Contest  
Winnemucca, Nevada  
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Please mark the most appropriate answer on the **answer sheet**. **DO NOT mark on the test as it will not be graded.** You will have **60** minutes to complete all testing. Good luck!

MX6 Questions:

1. In an oxygen deficient atmosphere, the combustible gas reading\_\_\_\_\_  
a. may read higher than actual concentrations.  
**b. may read lower than actual concentrations. (Page 4, answer is b)**  
c. will always be negative.  
d. none of the above.
2. Which of the following situations may cause readings of combustible gas to be lower than the actual gas concentration?  
a. Silicone compound vapors  
b. Obstruction of the sensor openings  
c. None of the above  
**d. Both a and b (Page 4, answer is d)**
3. A bump test measures for sensor accuracy.  
a. True  
**b. False (Page 11, answer is False)**
4. In addition to regular calibrations, Industrial Scientific recommends calibrating after which of the following?  
a. The unit falls or is dropped.  
b. The unit is exposed to water.  
c. After installing a new sensor.  
**d. All of the above. (Page 12, answer is d)**
5. If the instrument is still reading gas while in the configuration mode, and there is an alarm, the instrument returns to the gas monitoring display screen.  
**a. True (Page 32, answer is True)**  
b. False
6. The instrument alarms are deactivated during calibration\_\_\_\_\_  
a. to prevent damage to the alarms.  
b. to prevent damage to your ears.  
**c. to save battery life. (Page 34, answer is c)**  
d. so the user can focus on calibration.

7. The oxygen sensor technology is \_\_\_\_\_

- a. electrochemical. (Page 38, the answer is a.)
- b. catalytic.
- c. infrared.
- d. photoionization.

8. Your unit reads 10% LEL in a Propane atmosphere, but was calibrated to Methane. The LEL correlation factor for this situation is 1.62. What is the actual percentage LEL?

- a. 16.2% (Page 41, the answer is a)
- b. 0.162%
- c. 162%
- d. 10%

9. Zeroing sets each installed sensor to recognize the ambient air as clean air. If the ambient air is not truly clean air, gases that are present and relevant to the installed sensor types will not be measured.

- a. True
- b. False (Page 11, the answer is false)

10. When a sensor has degraded beyond an acceptable level no further adjustment is possible and the sensor will no longer pass calibration.

- a. True (Page 11, the answer is true)
- b. False

BioPak 240R questions:

11. The lowest temperature at which the BioPak 204R can be used is \_\_\_\_\_.

- a. 5 degrees Centigrade
- b. -5 degrees Fahrenheit
- c. 32 degrees Centigrade
- d. 32 degrees Fahrenheit (Page 7 of 45 A47D135, Revision M, at bottom of page)

12. Allowing the mask to soak for extended periods of time in approved cleaning solutions is an acceptable practice.

- a. True
- b. False (Page 10 of 45 A47D135, Revision M, at bottom of page (in red))

13. The flow restrictor needs to be replaced if the flow rate is not between \_\_\_\_\_ Lpm when cylinder pressure is between 2000 – 3000 psi and elevation is between 0 – 5280 feet.

- a. 2 – 3
- b. 1.8 – 3.1
- c. 1.9 – 2.5 (Page 12 of 45 A47D135, Revision M, table in right column)
- d. None of the above

14. Failure to install the moisture pad after you've put in new scrubber canisters will cause the BioPak 240R to overheat.

- a. True
- b. False (cause injury or even death, Page 14 of 45 & elsewhere A47D135, Revision M)

15. The weight of a fully charged BioPak 240R is\_\_\_\_\_.
- 39 pounds
  - 36 pounds
  - 34 pounds **(Page 42 of 45 A47D135, Revision M)**
  - 35 ½ pounds
16. Flashing red, blue & green lights along with a horn warning means you're getting low on oxygen.
- True
  - False **(Page 12 of 23, A47D134rJ)**
17. Carbon Dioxide scrubber canisters come in a sealed bag with an O-ring
- True **(Page 15 of 23, A47D134rJ)**
  - False
18. When donning the facemask, the proper sequence for tightening the straps is:
- Bottom, Top, Middle
  - Middle, Top, Bottom
  - Bottom, Middle, Top **(Page 17 of 23, A47D134rJ)**
  - Top, Bottom, Middle
19. It is an acceptable practice to use the bypass to clear your facemask of fogging
- True
  - False **(page 19 of 23, right column, A47D134rJ)**
20. If a fully charged approved 9 volt battery is used the battery should last for 60 hours or two months.
- True
  - False **(page 21 of 23, A47D134rJ)**

#### MSHA 3027 Questions

21. The mine rescue team is under the direct supervision of the mine operator?
- True
  - False **(False, 1-6)**
22. Testing devices containing electrical circuits, such as methane detectors, used in mines classified as non-gassy mines must be "permissible"?
- True
  - False **(False, 2-4)**
23. Portable detectors can reveal the presence of gasses that a complete chemical analysis is not designed to detect?
- True
  - False **(False, 2-4)**
24. A gas is a substance with?

- a. A definite shape and volume.
- b. A definite volume but changes shape according to the shape of its container.
- c. Neither a definite shape nor volume. (c, 2-5)

25. Once a gas expands, it is less concentrated, so it diffuses more quickly?

- a. True (True, 2-6)
- b. False

26. Heat from a fire in the mine will cause gasses to expand and diffuse more slowly?

- a. True
- b. False (False, 2-6)

27. Where is sulfur dioxide likely to collect in greater concentrations?

- a. At the mine portal.
- b. Against the back.
- c. Along the floor. (c, 2-6)
- d. All of the above.

28. 30 CFR section 49.9 must be followed by every mine. This standard pertains to \_\_\_\_\_.

- a. The Small and Remote Capability application
- b. The Ventilation Plan
- c. Mine rescue physical requirements
- d. The Mine Emergency Notification Plan (1-3, at the top)

29. The presence of small quantities of hydrogen greatly increases the explosive range of other gasses.

- a. True (Page 2-18 at the bottom)
- b. False

30. Hydrogen Sulfide (H<sub>2</sub>S) is most explosive at \_\_\_\_\_.

- a. A little over 14 ppm
- b. 15 ppm
- c. A little over 14 percent (Page 2-19, 14.2%)
- d. Hydrogen sulfide is not explosive