Certified Hyperbaric Specialist

ABWH
AMERICAN BOARD OF WOUND HEALING

INSTRUCTIONS

This exam consists of 120 questions. Although there may be several possible answers, you are reminded to pick the best answer. If the question has several answers you will be directed to "mark all that apply." All questions must be answered using a pencil. You will have 4 hours to complete the exam. If at any time you have questions, please raise your hand and a proctor will come to your seat. You will be notified of the remaining time at 30 minutes and again at 10 minutes. No one will be permitted to leave the room during the last 10 minutes of the exam. When time is called, you must close your test book and remain seated until the proctor has collected the exam materials.

Written notification of your exam results will be sent to the address you have provided within 3 weeks of the exam date.

Date _____

Last Name (Printed) _____

First Name (Printed) _____

Signature _____

1. The bluish-gray color of skin associated with the lack of oxygen is called:

A. Anemia
B. Cyanosis
C. Jaundice
D. Mottling

2. CNS oxygen toxicity can manifest as all of the following EXCEPT:

A. Vertigo
B. Facial twitching
C. Convulsions
D. Epistaxis

3. Barotrauma is NOT typically diagnosed in which type of tissue?

A. Ears
B. Lungs
C. Teeth
D. Sinuses
E. Bone

4. All of following are appropriate indications for performing transcutaneous oxygen evaluation on a hyperbaric patient EXCEPT:

A. Assess perfusion at the patient's wound
B. Provide additional revenue for the hyperbaric department
C. Evaluation of tissue response to 100% oxygen
D. Determine the level of amputation

5. Which of the following is a NOT relative contraindication to hyperbaric treatment?

A. Sinusitis
B. Headache
C. Fever
D. High FiO2
E. Cancer

6. Patients with certain conditions are more likely to develop oxygen toxicity. Which of the following is NOT a condition that increases the risk of oxygen toxicity?

A. Fever
B. Anxiety
C. Carcinoma
D. Steroids

7. Which of the following statements describes the operator's BEST course of action if a cardiac arrest should occur in the monoplace chamber in a non-intubated patient?

A. Hold the patient at pressure until help arrives, no matter how long it takes. Then decompress in short bursts.
B. Decompress immediately and as rapidly as possible. Begin CPR immediately upon surfacing. Check for signs of embolism.
C. Decompress slowly over a ten-minute period so that the patient does not develop a pneumothorax. Administer CPR.
D. Await for the arrival of the physician to direct the patient management.

8. A diver previously finished a dive with a repetitive group designation of H, had a surface Interval of 2 hours 20 minutes, and makes a second dive to 45 FSW. What is the diver's residual nitrogen time?

A. 32
B. 48
C. 38
D. 30

9. During a routine treatment, a patient complains of chest pain and shortness of breath. The primary response of the chamber operator is to:

A. Give the patient an air break
B. Immediately notify the hyperbaric physician of the patient's condition
C. Begin to decompress the chamber at a rate of 5 psi/min
D. Call the hospital code team

10. Which items may be safely be allowed in the monoplace chamber with the patient?

A. Wristwatch
B. Eye glasses (without hearing aid)
C. I-Pod (operating on battery)
D. Magazines or books
E. Drinking water

11. Regarding personal protective equipment and Infection Control Standards, which of the following statements is INCORRECT?

A. When personal protective equipment is removed, it should be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal.
B. Surgical or examination gloves may be washed or decontaminated for reuse if the integrity of the glove has not been compromised.
C. Masks in combination with eye protection devices must be worn whenever splashing of blood or other potentially infectious material is likely.
D. Personal protective equipment must be worn whenever working with a patient identified as having a wound colonized with MRSA or VRE.

12. Based on the principle of Boyle's Law, changing depth is most dangerous:

A. In fresh water as opposed to salt water
B. Near the surface
C. Deeper than 33 fsw
D. Between 6 ATA and 5 ATA
E. Between 165 FSW and 132 FSW

13. The comprehensive publication which addresses fire safety standards for hyperbaric health care facilities is:

A. CGA-540
B. CMS Pub 30-10
C. U.S. Navy Diving Technical Manual
D. Chapter 20, NFPA-99

14. During a routine treatment at 3 ATA the attendant must be decompressed. Using the U. S. Navy Standard Air Decompression Tables, which depth table would be used to determine the decompression obligation?

A. 60
B. 66
C. 70
D. 100

15. During a treatment, the oxygen sensor alarm sounds to indicate an elevated oxygen level inside the multi-place chamber. What is the most likely source of oxygen leak into the chamber?

A. Patient’s hood
B. Inside attendant's mask
C. Oxygen monitor
D. Compressor

16. Which statement best describes the care of surgical drains, foley catheters and nasogastric tubes during hyperbaric therapy?

A. These devices are not allowed in the hyperbaric chamber
B. All should be removed before commencing treatment
C. Should be emptied before treatment and then left open to drain
D. Must be clamped and sealed tightly to prevent fluids from draining from the patient during HBO treatment

17. During multiplace chamber operations oxygen concentration inside the chamber should not exceed:

A. 33%
B. 29%
C. 23%
D. 40%
E. 20%

18. The chamber operator compressed the chamber to 60 FSW at 1 foot per second and secured (closed) the supply and exhaust valves. The chamber pressure leveled for a moment and then slowly began losing pressure. There were no significant leaks in the system. What is the most likely explanation of the pressure change?

A. Temperature change. Warming the chamber causes a decrease in pressure.
B. No known reason.
C. Poor operator technique in selecting an improper descent rate.
D. Temperature change. Cooling the chamber causes a decrease in pressure.

19. Normal sea level atmospheric pressure is?

A. 14.7mmHg
B. 120 mmHg
C. 573 mmHg
D. 600 mmHg
E. 760 mmHg

20. Which of the following gas laws explains tissue nitrogenaton at depth?

A. Henshaw's
B. Boyle's
C. Charles'
D. Henry's
E. LaPlace's

21. The half-life for CO elimination at normobaric pressure on 100% oxygen is

A. 23 minutes
B. 45 minutes
C. 2 hour and 20 minutes
D. 5 hours and 20 minutes

22. Thirty three feet of seawater is equivalent to:

A. 14.7 psig
B. 2.0 ATA
C. 29.4 psia
D. 1.0 ATM
E. All of the above

23. Because of the toxic effects on the central nervous system, pure oxygen breathing is restricted in use to which of the following pressures?

A. 1 ATA or less
B. 2 ATA or less
C. 3 ATA or less
D. 5 ATA or less
E. 10 ATA or less

24. The risk of hyperbaric exposure for patients with a history of asthma relates to:

A. Local air trapping and pulmonary overpressure accident on ascent
B. Increased toxicity of bronchodilators related to oxygen
C. Precipitation of asthma attacks due to anxiety
D. Pulmonary hypertension
E. Increased risk of pneumonia

25. Your patient arrests inside of a monoplace chamber. He is unconscious and in ventricular fibrillation. As chamber operator what precautions must you advise should be taken upon reaching the surface before defibrillating the patient?

A. Move the patient at least 6 feet from the opening of the chamber
B. Removing the patient's clothing
C. Moving the patient off of the chamber stretcher
D. All of the Above

26. Relief valves are usually set based upon chamber's treatment depth. Which of the following best describes this setting.

A. Set at the Maximum Treatment Depth
B. Set at 5% below the Maximum Treatment Depth
C. Set at 10% above the Maximum Treatment Depth
D. Set at 25% above the Maximum Treatment Depth

27. Which person from the hyperbaric department is responsible for overseeing the maintenance procedures and ensuring the chamber is run safely?

A. Program Medical Director
B. Hyperbaric Safety Director
C. Fire Marshall
D. All Chamber Technicians share responsibility

28. All of the following conditions may increase the risk of events related to decompression and increased susceptibility toward bends for inside attendants EXCEPT?

A. Alcohol
B. Exercise
C. Fever
D. Flying before diving
E. Illness

29. Several conditions have data supportive for the use of HBOT but are nonetheless considered investigational by CMS. Which condition is NOT considered investigational?

A. Acute Myocardial Infarction
B. Cerebral Palsy
C. Hypoxic Wounds
D. Intracranial Abscess
E. Traumatic Brain Injury

30. An air break in the monoplace chamber:

A. Is not done because the chamber is enclosed
B. Is used as necessary in case the patient has a seizure
C. Is performed by the patient, at the direction of the technician
D. Is done at the end at the end of the treatment just prior to surfacing

31. Decompression sickness is very rare when diving shallower than:

A. 130 FSW
B. 100 FSW
C. 45 FSW
D. 30 FSW
E. 14.7 FSW

32. Which of the following is NOT a step in TCOM site preparation?

A. Shave area if necessary
B. Mechanically remove loose dry skin
C. Cleanse to remove oils
D. Apply a barrier ointment to protect skin
E. All are appropriate steps

33. The most common level of demarcation of sensation in a patient with spinal decompression illness is at the:

A. Scapulae
B. Nipple line or umbilicus
C. Inguinal ligament
D. Iliac crest
E. Lower extremities

34. Which of the following is the definition of Surface Interval?

A. The time from the beginning of the first decompression to the end of the second compression
B. The time from the end of the first decompression to the beginning of the second compression.
C. The time from the beginning of the first compression to the beginning of the second compression.
D. The time from the end of the first compression to the end of the second compression.
E. The time from the end of the first decompression to the end of the second compression

35. All of the following medications are generally considered safe under hyperbaric conditions EXCEPT?

A. Heparin, Insulin, and Vitamin E
B. Lidocaine, Alcohol and Non-narcotic analgesics
C. Cis-Platinum, Doxorubicin, and Bleomycin
D. Barbiturates, Digitalis, and Steroids

36. When preparing medications for a patient receiving hyperbaric treatment in a multiplace chamber, it is generally acceptable to use glass containers:

A. As long as they are greater than 10 ml glass vials.
B. Even if the integrity of the multi-dose vial has been violated.
C. As long as the glass bottle has been vented with special vented tubing.
D. Only if the glass IV bottle has been continually vented to the air space with a long needle during any pressurization changes.
E. Only if the manufacturer has cleared the bottle for hyperbaric exposures

37. Physiologic effects of HBO include all of the following EXCEPT:

A. Antimicrobial activity
B. Antioxidant properties
C. Increased tissue edema
D. Increased collagen deposition
E. Increased angiogenesis

38. Which of the following statements is MOST accurate related to collagen synthesis and tissue oxygen tension?

A. Collagen is produced by fibroblasts at tissue oxygen tensions measuring 15mmHg
B. Collagen is produced by fibroblasts at tissue oxygen tensions measuring 25mmHg
C. Collagen is produced by fibroblasts at tissue oxygen tensions measuring 35mmHg
D. Collagen is produced by osteoblasts at tissue oxygen tensions measuring 25mmHg
E. Collagen is produced by osteoblasts at tissue oxygen tensions measuring 35mmHg

39. Close monitoring of blood sugar levels should be performed:

A. In all patients receiving HBOT
B. In all diabetic patients receiving HBOT
C. Only in insulin dependent patients receiving HBOT
D. Only when trying to distinguish between an oxygen toxicity and hypoglycemic seizure
E. Monitoring is only required when patients HgA1C exceeds 10%

40. Documentation that must be completed for every treatment to ensure compliance with reimbursement requirements for an individual receiving hyperbaric therapy include all of the following EXCEPT?

A. Time of oxygen breathing under pressure
B. Depth of treatment
C. Signed consent
D. Diagnosis
E. Date of treatment

41. A spherical balloon is inflated to 5 liters volume at 150 FSW. What would be the resulting volume if the unvented balloon were decompressed to 100 FSW?

A. 3.5 liters
B. 4.6 liters
C. 5.7 liters
D. 6.9 liters
E. 7.5 liters

42. Approximately how long does it take to reach a treatment depth of 3.0ATA if the hyperbaric chamber is compressed at 5psi/minute?

A. 4 minutes
B. 5 minutes
C. 6 minutes
D. 10 minutes
E. 15 minutes

43. The "Paul Bert" effect refers to which of the following?

A. Barotrauma
B. CNS oxygen toxicity
C. Hypoglycemia
D. Nitrogen narcosis

44. During decompression bubbles form most commonly in which tissue structure?

A. Arteries
B. Veins
C. Adipose
D. Muscle
E. Bone & Joints

45. Dalton's Law describes the relationship between the total pressure and the partial pressure of gases in a mixture. With is the partial pressure of oxygen in air at 2 ATA?

A. 2.00 ATA
B. 1.00 ATA
C. 0.10 ATA
D. 0.21 ATA
E. 0.42 ATA

46. At the completion of a hyperbaric oxygen treatment, when will the patient's arterial P02 be expected to return to normal or pretreatment level:

A. In a few days
B. In a few hours
C. In a few minutes
D. In a few seconds
E. Never - it will always be high

47. A diver complains of sub-sternal pressure-type pain, nausea, and diaphoresis following a rapid ascent. There is no complaint of shortness of breath. Which of the following conditions is most concerning and likely to be causing the patient distress?

A. Gastric distention from air over-expansion
B. Subcutaneous emphysema
C. Mediastinal emphysema
D. Pneumothorax
E. Pnemonia

48. The condition in the body when the amount of inert gas in the diver's tissues is greater than the amount of inert gas in what he is breathing is called:

A. Saturation
B. Over-saturation
C. Super-saturation
D. Sub-saturation

49. Which of the following topical preparation are most commonly used in hyperbaric patients?

A. Sulfamylon due to its vasodilatory effect
B. Silver sulfadiazine (Silvadene) due to the fact that it has no vasodilatory effect
C. Neosporin due to the petroleum base there is less fluid loss through the burned area
D. All of the above

50. What is considered to be the optimal range of tissue oxygen tensions that allows typical leukocytes function normally?

A. 80-100 mmHg
B. 60-70 mmHg
C. 30-40 mmHg
D. 10-20 mmHg
E. 5-10mmHg

51. Which of the following are appropriate products that can be used to clean and disinfect the interior of a monoplace chamber?

A. Normal Saline
B. Pine-Sol
C. Tor-HB
D. Hospital alcohol pads
E. All of the Above

52. Which of the following is NOT correct regarding evaluation of breath sounds?

A. Breath sounds should be compared from side to side
B. Breath sounds should not be auscultated through a patient's clothing since fabric can cause sound distortion
C. The bell of the stethoscope should be used for listening to the lungs when breath sounds are quiet as the bell best amplifies the sound
D. It is best to instruct the patient to breathe slowly and deeply through an open mouth
E. Abnormal breath sounds should be reported to the physician prior to the treatment

53. Which of the following maneuvers provides little help in attempting to equalize the pressure in the ears during compression?

A. Crying
B. Yawning
C. Swallowing
D. Blowing your nose
E. Pulling the earlobe downward

54. A completely filled 71.2 cu. ft. SCUBA bottle contains 3000 psig at 80^{o}F. Left in the sun, the bottle temperature increases to 105^{o}F. What will the new tank pressure be?

A. 3300 psig
B. 2861 psig
C. 3000 psig
D. 3139 psig
E. 4095 psig

55. According to Boyle's Law, assuming a constant temperature, the volume and pressure of a gas are:

A. Unrelated
B. Exponentially related
C. Inversely proportional
D. Directly proportional
E. Additive

56. What is the recommended maximum safe exposure time for breathing oxygen continuously at 66 FSW?

A. 15 minutes
B. 30 minutes
C. 45 minutes
D. 90 minutes
E. 120 minutes

57. During fire deluge testing, it is noted that not all of the available deluge water was used during the test. What actions, if any, should be taken in this situation?

A. Refill the tank until it is full
B. Nothing if there is still water available in the tank
C. Continue draining the tank, then refill
D. Refill only if the tank is less than 1/2 full

58. Which of the following gas mixtures BEST describes the composition of ambient air?

A. 50% N2, 21% O2, 29% Ar
B. 50% N2, 50% O2
C. 80% N2, 20% O2
D. 78% N2, 21% O2, 1% Ar

59. Which statement is MOST accurate regarding blood pressure measurements at 3 ATA inside of a hyperbaric chamber?

A. Can only be recorded with an indwelling arterial catheter
B. The reading reflects the difference between arterial and ambient pressure
C. Is the same arterial pressure as measured at 1 ATA
D. Are unreliable because of the additional chamber pressure
E. Are unreliable because of the increased gas density

60. A decompression sickness patient with neurological compromise is responding to recompression and oxygen at 60 FSW. However, upon completion of the third oxygen breathing cycle it is noted that resolution of the patient's symptoms is incomplete. The most appropriate management would be to:

A. Extend the treatment table
B. Complete a treatment table 6 and re-treat immediately
C. Complete a treatment table 6 and observe
D. Recompress to 165 FSW on air

61. What is the best agent to use when extinguishing a fire inside of a multiplace hyperbaric chamber?

A. Heavy blankets
B. Halogen
C. Water
D. Dry chemical

62. Who has the authority to modify hyperbaric treatment protocols according to the medical needs of the patient?

A. The chamber operator
B. The safety officer
C. The hyperbaric nurse
D. The hyperbaric physician
E. Any physician with hospital privileges

63. The major risk when trying to force a Valsalva maneuver to clear the ears during descent is?

A. Nosebleed
B. Over-pressurization of the sinuses
C. Inner ear barotrauma
D. Pneumo-mediastinum
E. Cerebral arterial gas embolism

64. Patients on continuous mechanical ventilation with FIO2 greater than 50% may have increased risk of oxygen toxicity with HBO treatments.

A. True
B. False

65. Prior to initiating hyperbaric therapy a patient gives a history of severe claustrophobia. When monitoring this patient during the treatment which of the following symptoms would NOT be characteristic of claustrophobia?

A. Anxiety
B. Emotional distress
C. Diaphoresis
D. Hyperventilation
E. Somnolence

66. When are the gas containing spaces in the human body at risk for barotrauma during a hyperbaric exposure?

A. Only during ascent
B. Only during descent
C. Only while at depth
D. Any time the pressure is changing

67. The priority for the safety of individuals involved in a fire in the monoplace hyperbaric chamber should follow this order.

A. Patient inside the chamber, other patients in the chamber area, Hyperbaric staff
B. Patient inside the chamber, hyperbaric staff, other patients in the chamber area
C. Other patients in the chamber area, hyperbaric staff, Patient inside the chamber
D. Other patients in the chamber area, Patient inside the chamber, hyperbaric staff

68. What is the maximum concentration of oxygen that can be safely administered for an extended period of time (greater than 24 hours) without incurring clinically significant toxic effects?

A. 20%
B. 40%
C. 60%
D. 80%
E. 100%

69. Where is the maximum working pressure of any hyperbaric chamber recorded?

A. In the chamber handbook
B. On the name plate
C. Inside the main door
D. With the State Fire Marshall
E. NFPA-99 Chapter 20

70. A patient that is breathing 100% oxygen at 2.8 ATA will have an arterial oxygen tension of approximately:

A. 760 mmHg
B. 1540 mmHg
C. 2200 mmHg
D. 4000 mmHg
E. Too high for oximeters to measure

71. One hour after the breathing of compressed air, a patient begins to suffer pain from the elbow. Your preliminary diagnosis is:

A. Decompression sickness type I
B. Decompression sickness type II
C. Gas embolism
D. Carbon monoxide poisoning

72. As the ambient pressure increases, gases tent to become _____ soluble in tissue according to _____ law

A. More; Dalton's
B. Less; Dalton's
C. More; Henry's
D. Less; Henry's

73. The tender in the hyperbaric chamber has been breathing compressed air at a depth of 60 feet of sea water for 2 hours. The greatest concern for the tender is:

A. Nitrogen narcosis
B. Decompression sickness
C. Gas embolism
D. Oxygen Toxicity

74. While arranging for transport of a patient suffering from decompression sickness to the treatment facility, one should most seriously consider administering which of the following:

A. Aspirin
B. Steroids
C. Oxygen
D. Sedatives

75. Which of the following is an indication of pulmonary oxygen toxicity?

A. Substernal burning
B. Abdominal pain
C. Sneezing
D. Apnea

76. The pressure equivalent of 1 ATA is approximately:

A. 700 mmHg
B. 600 mmHg
C. 760 mmHg
D. 160 mmHg

77. The partial pressure of oxygen at normal atmospheric pressure breathing air is:

A. 700 mmHg
B. 600 mmHg
C. 760 mmHg
D. 160 mmHg

78. The depth gauge on the hyperbaric chamber reads 99 FSW. The total pressure the patient is exposed is ___ATA.

A. 1
B. 3
C. 4
D. 6
E. 7

79. The hyperbaric supervisor asks that you place the hyperbaric patient under a total pressure of 3 ATA. You add air to the chamber until the depth gauge reads ___ FSW.

A. 20
B. 60
C. 33
D. 66
E. 99

80. Which of the following gases is considered to be biologically inert?

A. Oxygen
B. Carbon dioxide
C. Nitrogen
D. Arsenic

81. _____ empirically derived tables for safe decompression

A. Boyle
B. Moir
C. Pol
D. Watelle
E. Haldane

82. To stop the effects of Nitrogen Narcosis on the body, what gas would one add to the mix that is being consumed?

A. Carbon dioxide
B. Nitrox blend
C. Helium
D. Oxygen

83. Carbon monoxide is poisonous because it:

A. Binds to hemoglobin, with affinity of 200x-240x greater than oxygen
B. Forms bubbles in your body that can compress nerves and cause pain
C. Interferes with the elimination of nitrogen
D. None of the above

84. Clothing worn in the hyperbaric chamber should be made of material that does not throw sparks. Clothing made from 100% _____ is therefore acceptable for use in the hyperbaric chamber.

A. Cotton
B. Silk
C. Nylon
D. Polyester

85. Convert 2280 mmHg into Psi:

A. 44.1 psi
B. 29.4 psi
C. 58.8 psi
D. None of the above

86. Convert 89 fsw to ATA:

A. 2.7
B. 2.4
C. 3.7
D. 4.7

87. What is your PO2 of a 60/40 Nitrox mix at 10 ATA?

A. 3.0
B. 6.0
C. 0.6
D. 60

88. What is the PO2 of air at 5 ATA?

A. 0.21
B. 0.63
C. 1.1
D. 1.25

89. Which of the following best describes the primary risk factors for decompression sickness?

A. Depth
B. Time
C. Depth and time
D. Neither depth nor time

90. Of the choices listed, the treatment table most commonly used for the treatment of decompression sickness Type II on Sint Eustatius is the US Navy Treatment Table is:

A. 5
B. 6A
C. 6
D. 66

91. For physical problems arising within ____ hours of breathing of compressed inert gas, decompression sickness should be among the first diagnoses to be considered.

A. 6
B. 12
C. 24
D. 48

92. Convert 111 degrees Fahrenheit to Celsius:

A. 43.9 C
B. 79 C
C. 75.6 C
D. 49.0 C

93. Convert 45 degrees Celsius to Fahrenheit:

A. 100 Degrees F
B. 113 Degrees F
C. 10 Degrees F
D. 110 Degrees F

94. One may be inclined to switch from a Table 6 to a Table 5 during a series of treatment on a given patient by virtue of concern regarding:

A. Air embolism
B. Oxygen toxicity
C. Electricity consumption
D. Increased severity of symptoms or signs during treatment

95. Charles' Law states that:

A. Temperature and pressure are directly related
B. Volume and pressure are inversely related
C. Temperature and volume are directly related
D. None of the above

96. Gay-Lussac's Law states that:

A. Temperature and pressure are directly related
B. Volume and pressure are inversely related
C. Temperature and volume are directly related
D. None of the above

97. Which of the following gases is associated with high pressure nervous syndrome?

A. Helium
B. N2
C. O2
D. CO

98. Which of the following is a primary benefit of hyperbaric oxygen in the management of patients with wound healing conditions?

A. Initiation of protein synthesis
B. Tolerance of chronic ischemia
C. Reduced swelling
D. Neovascularization

99. What is your group letter if you have spent 25 minutes at 80 feet of seawater?

A. D
B. H
C. G
D. Z

100. You are an avid diver; you finally get to go on your first dive in 6 months. You eagerly begin a dive at 60 feet for 37 minutes. You then have a surface interval of 1:00 H. What is your group letter?

A. C
B. G
C. F
D. O

101. During initial evaluation, the failure of hyperbaric oxygen to reverse hypoxia, as determined by transcutaneous oximetry, may suggest the need for which of the following?

A. Hyperbaric oxygen therapy
B. A change in diet
C. Vascular augmentation
D. None of the above

102. An important predictor of beneficial effects of hyperbaric oxygen in cases of focal ischemia reflects the reversibility of the hypoxia as determined by:

A. Palpation of pulse
B. Measurement of blood pressure
C. Transcutaneous oximetry
D. None of the above

103. Acrylic windows are designed, tested, and certified meeting the requirements of:

A. Containing a “U” Stamp
B. ASME, PVHO-1
C. NFPA 99, Chapter 14
D. NFPA 99, Chapter 20

104. The acrylic inspector uses standards and technical criteria to establish serviceability of a PVHO acrylic window under its specific environmental service conditions using which ASME document:

A. ASME Acrylic Guide
B. PVHO-1
C. PVHO-2
D. NFPA 99
E. CGA

105. How long are your acrylic windows in the hyperbaric chamber in a multiplace unit “good” for?

A. 30 years, or 10,000 cycles
B. 10 years, or 10,000 cycles
C. 10 years, or 20,000 cycles
D. 15 years, or 15,000 cycles

106. A Class C Chamber is used for:

A. Multiplace human occupancy
B. Animal use only
C. Human and animal use
D. Single human occupancy

107. A Class B Chamber is used for:

A. Multiple human occupancy
B. Animal use only
C. Single human occupancy
D. Diving operations only

108. Class A Chambers are used for:

A. Multiple human occupancy
B. Animal use only
C. Human and animal use
D. Single human occupancy

109. A hyperbaric chamber designed for human occupancy must meet what requirements?

A. ASME
B. PVHO
C. FDA 510k clearance
D. All of the above

110. A monoplace chamber requires a fire suppression system.

A. True
B. False

111. Antistatic procedures and venting of a multiplace chamber should be employed when the oxygen level inside it exceeds:

A. 21%
B. 23.5%
C. 30%
D. 19%
E. 50%

112. Which governing associate provides regulation of storage of compressed gasses?

A. ASME
B. PVHO
C. CGA
D. FDA

113. What is the role of oxygen in the context of fire?

A. It raises the ignition temperature
B. It lowers the ignition temperature
C. It produces heat which then is used as a spark
D. It allows the fire to burn hotter than usual

114. What is the maximum time you can stay at 70 feet?

A. 56 minutes
B. 48 minutes
C. 47 minutes
D. 37 minutes

115. What is the maximum time you can stay at 82 feet?

A. 30 minutes
B. 24 minutes
C. 28 minutes
D. 21 minutes

116. What is your group if you stay 25 minutes at 60 feet?

A. F
B. E
C. G
D. D

117. What is your group if you stay 45 minutes at 50 feet?

A. H
B. F
C. G
D. I

118. What is your group if you stay 20 minutes at 65 feet?

A. E
B. D
C. F
D. C

119. What is your group if you stay 23 minutes at 73 feet?

A. B
B. E
C. G
D. F

120. A group D diver is out of water for 2 hours. What is their new group?

A. D
B. C
C. B
D. A

121. A group G diver is out of the water for 1 hour. What is their new group?

A. F
B. G
C. H
D. E

122. A group F diver is out of the water for 30 minutes. What is their new group?

A. E
B. F
C. G
D. H

123. A diver goes to 100 feet for 13 minutes. They stay on the surface for 2 hours and 20 minutes. Then they do a dive to 70 feet for 18 minutes. Then they stay out for 3 hours. How long can they dive to 50 feet now?

A. 35 minutes
B. 92 minutes
C. 57 minutes
D. 47 minutes

124. A diver does a 60 foot dive for 30 minutes then waits on the surface for 1 hour. How long can they dive at 50 feet now?

A. 35 minutes
B. 57 minutes
C. 92 minutes
D. 48 minutes

125. A diver goes to 82 feet for 18 minutes. After a surface interval of 30 minutes, how long can they dive at 55 feet?

A. 38 minutes
B. 60 minutes
C. 74 minutes
D. 36 minutes