

## ADVANCED FINAL EXAM

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. In the ocean, an absolute pressure of five atmospheres is reached at a depth of:
2. A balloon filled with air, having a volume of 6 cubic inches at 33 feet, will have what volume at the surface.
3. When an object displaces a quantity of water that weights more than the object, the object will:
4. The buoyancy of a diver in fresh water, compared to the same diver in salt water is:
5. Squeeze is the result of air pressure within an air space being:
  - a. less than the external pressure
  - b. more than the external pressure
  - c. equal to the external pressure
  - d. equal to the ambient pressure
6. The greatest rate of change (expansion) of air in a diver's lungs takes place during ascent from:
  - a. 99 feet to 66 feet
  - b. 66 feet to 33 feet
  - c. 33 feet to the surface
  - d. The rate of expansion is the same in each case
7. A pain just above and behind the eyes while diving is probably due to:
8. Continued loss of body heat in cold water will in time produce:
  - a. muscle cramps
  - b. progressive immobility
  - c. insensibility to pain
  - d. all of the above
9. Which is the true statement regarding the use of a wetsuit?
  - a. it will make you less buoyant in water
  - b. it will add to your positive buoyancy at the surface and reduce buoyancy at 33 feet
  - c. it will give positive buoyancy at the surface and less buoyancy at 33 feet

10. The buoyancy compensator may properly be used to:
  - a. rest at the surface
  - b. for surface swimming to conserve energy
  - c. to aid in performing ascents
  - d. all of the above
  
11. What will happen if you attempt to remove a regulator from a tank without turning off the air or if you forgot to purge it? (2 items)
  
12. When cleaning or rinsing a regulator with water what could happen if you push the purge button? (while disconnected from the tank)
  
13. The recommended rate of ascent is:
  
14. The letter of the alphabet that you get from the dive tables, called a repetitive group designator, is a direct indicator of:
  
15. A repetitive dive is a dive made within \_\_\_\_\_ hours of a previous dive.
  
16. If you dive to 53 feet the no-decompression time limit is:
  
17. If you are weighted properly and you completely deflate your B.C., take a normal breath, assume a vertical position, and hold still, you should: (Be specific)
  
18. List 3 steps of dropping a weight belt under water:
  
19. If during a dive you and your buddy become separated you should:
  
20. If during a dive, breathing from your well-maintained regulator becomes difficult, you would first suspect that?
  
21. If at any time during a dive you feel anxious or are having difficulty in any way, you should:
  
22. What are 3 things a diver should do on every ascent?
  
23. A good diver:
  - a. can dive anytime, any place
  - b. is a strong swimmer
  - c. can hold his breath for 60 seconds
  - d. knows and observes his own limitations

24. (T or F) Underwater navigation can be quite effective without a compass.
25. Select the least desirable navigation pattern.
- out and back
  - rectangular
  - circular
  - triangular
26. Execution of a dive pattern underwater is most likely to be successful if it is:
- practiced on land beforehand
  - visualized in the mind
  - discussed with your buddy
  - all of the above
27. (T or F) A buddy team should alternate responsibility for navigation after each change in course heading.
28. Which of the following distance measuring methods is best for diving in limited visibility?
- time
  - kick cycles
  - arm spans
  - tank pressure
29. Which of the following answers contains an item that is not a natural aid to underwater navigation:
- plants, animals and rock formations
  - light, currents, and sound
  - sand ripples, bottom contours and depth
  - all of the above are natural aids
30. (T or F) Monitor the compass heading without ever looking up and beyond the compass.
31. When using a compass underwater, a diver should hold the compass:
32. (T or F) Monitor the compass heading without ever looking up and beyond the compass.
33. When swimming a triangular pattern the diver must make turns of \_\_\_\_ degrees.
34. List 3 desirable features of an underwater compass:
35. The preferred reference to make the exit point for a night dive is:
36. (T or F) To help keep track of divers, both above and below water, it is a good idea to attach a chemical glow light to each diver's snorkel.

37. Where should a problem that occurs underwater, usually be solved?
38. List 3 ways divers can maintain contact while diving in limited visibility or at night:
39. Explain the procedures for relocating a buddy after separation occurs underwater:
40. List 3 things to do when preparing for and entering the water from a dive boat:
41. How can equipment clutter be minimized on a dive boat?
42. List 3 types of lines used for small-boat diving:
43. What is the first-aid for jellyfish, coral or anemone stings?
44. (T or F) Sharks usually attack divers when they are 30 or 40 ft. deep.
45. (T or F) Most aquatic animals are aggressive.
46. (T or F) Most aquatic animals will defend themselves by biting or stinging a diver, if frightened or abused.
47. (T or F) It is usually through a diver's carelessness that injuries occur.
48. What is the best way to avoid being injured by aquatic life?
49. What are 2 general types of waves and what relative beach slope causes each type?
50. When diving in the ocean, where there are waves, how would you determine when to enter the surf for an entry from the beach.
51. Would an ocean beach entry usually be easiest from a point (jetty) or a bay or cove?
52. What is a longshore current and in what body or bodies of water is it found?
53. Before diving in unfamiliar or a new type of diving (like cave, deep, or river diving) what should every diver do:?
54. List 4 types of shore and/or boat entries: Detail the procedures.
55. How would you exit the water, after a dive, where there is heavy surf and a sandy bottom?
56. (T or F) A diver without a wetsuit in 80 degree water is like an unclothed person in 42 degree air.

57. (T or F) A wetsuit at a depth of 60 feet provides the same insulating ability as it would at a depth of 20 feet.
58. A human body's 2 most important physical characteristics affecting sensitivity to cold environments are:
59. Which diver will get cold faster under identical water conditions?
60. What are 4 signs of hypothermia?
61. What is the first-aid treatment for hypothermia?
62. Hot, dry skin and rapid, full, pounding pulse probably indicates?
63. List 3 sources of information relative to diving a new or unfamiliar location.
64. List 2 items that are particularly useful in search and recovery diving
65. Name 2 things a buddy team can do to increase the chances of search and recovery success:
66. What is the first step of a proper search? (The dive team is in the water)
67. (T or F) By separating duties a buddy team can increase their over-all effectiveness.
68. What are 2 basic search patterns?
69. What are 3 basic criteria for underwater searching?
70. Objects over about \_\_\_\_\_ lbs. Should be lifted with a lift bag?
71. What is the first thing to do upon locating a lost item underwater?
72. (T or F) For objects that are heavy it is safer to use 2 smaller lift bags, rather than one large one?
73. What are 3 useful knots a diver should know how to tie?
74. Knots in some types of rope (such as polypropylene) do not readily stay tied. What would you do to make this situation safer when lifting an object with this type of rope?
75. What do you use to properly fill a lift bag under water?
76. How full should you fill the lift bag before attempting to move an object?

77. Should a diver ascend with the lift bag and object being lifted?
78. Is it usually easier to move an object horizontally underwater, using a lift bag, near the bottom or near the surface?
79. What considerations are there for getting an object out of the water after being lifted to the surface? (Discuss how the object's physical characteristics, the water conditions, distance from shore, whether a boat is at the surface, and what type of boat it is, affect the determination of where the best extraction point is)
80. (T or F) Setting personal diving depth records proves a diver is proficient with diving skills.
81. What is the depth range normally considered to be deep diving?
82. What is the normal maximum depth limit for new recreational divers, when good conditions exist?
83. What exceptions are there for the limit in question 82?
84. (T or F) Psychological fitness is an important aspect of deep diving preparation.
85. When preparing for a deep dive a diver should consider such things as: (List a minimum of 5 items)
86. At 33 ft. you use 40 psi of air/minute. How long will your 2500 psi of available air last at 99 feet?
87. After a dive you should have a minimum of \_\_\_\_\_ psi of air left in your tank.
88. Technically, do you read psia or psig on the pressure gauge face?
89. Name 2 or more factors that affect air consumption rates underwater.
90. Is a balanced or unbalanced regulator first stage best for deep diving? Why?
91. Name 5 factors that aggravate the effects of nitrogen narcosis.
92. Explain micro-bubbles (silent bubbles) as they relate to diving, ascending, and decompression sickness.
93. How does the brain tissue differ from adipose tissue, relative to nitrogen absorption and release?

94. (T or F) Strenuous exercise, after a dive should be avoided.
95. Why is question 94 above true or false?
96. What is Decompression Sickness?
97. D.S. affecting tissues of the nervous system could produce symptoms such as: (3 or more)
98. Relative to time, onset of D.S. tends to be \_\_\_\_\_, while onset of air embolism symptoms tends to be just the opposite.
99. Where is the most likely place for nitrogen bubble formation to occur after a short, deep dive? (What type of body tissue?)
100. Where is nitrogen bubble formation most likely to occur after a dive that exceeded the maximum time limits, but that included an ascent rate of 30 ft/min. and no decompression stops? A 3 minute safety-stop was included, but was less than the required decompression stop time.
101. When, if ever, is it O.K. to attempt to recompress a victim of D.S. in the water, at depth? Why?
102. When should decompression stop diving be performed?
103. Your first dive is to 70 ft. for 45 minutes. You would like to make a second dive to 65 ft. for 30 minutes. Using the maximum time limit your minimum surface interval is:
104. A diver with a group designation of "G" making a dive to 60 ft. has a residual nitrogen time of:
105. What effects on nitrogen absorption and release, would a week of 2 daily dives have? What does this mean for the recreational diver?
106. Solve this dive table problem:
- First dive to 50 feet for 40 minutes  
 Altitude is 5,000 feet  
 Surface Interval of 1:10  
 Second dive to 50 ft. for 40 minutes  
 Decompression?