



Rocky Mountain Aquatics

FINAL SCUBA EXAM

Please record all answers on the answer sheet provided.
DO NOT MAKE ANY MARKS IN THIS TEST BOOKLET.

Read all the answers first before making a choice.
In some instances all answers are true but one is the best answer.

You will need a Dive Table and a High Altitude Conversion Table.

c T. Lee Burnham, Ph.D. 1989

EQUIPMENT:

1. A SCUBA tank should have a visual inspection at least every:
a. month b. year c. 5 years d. dive
 2. A SCUBA tank should be hydrostatically tested at least every:
a. month b. year c. 5 years d. dive
 3. After every dive your regulator should be rinsed in:
a. alcohol b. soap and water c. vinegar d. fresh water
 4. The type of equipment commonly used by the sport diver is:
a. Open Circuit b. Closed Circuit
c. Pure Oxygen d. Any of the above
- A Scuba cylinder with the following markings can be filled with compressed air to what maximum pressure?

DOT 3AA 2250 231975 2-88 +

- a. 2,250 psi b. 2,475 psi c. 2,319 psi d. over 8,000
6. SCUBA tanks should be stored:
a. Empty and in an upright position b. Empty with valve open
c. Upright w/100 to 300 psi of air d. Inverted w/500 psi of air
 7. SCUBA tanks should be filled with:
a. Oxygen b. Nitrogen c. air d. helium

MATCHING:

8. Wetsuit 9. Buoyancy Compensator 10. Weight Belt
a. Controls buoyancy, helps us rest and ascend comfortably
b. Allows us to get underwater easily
c. Makes it possible to snorkel in warm water
d. Provides insulation
11. The function of the _____ is to give an adequate amount of air and give it at the proper pressure.
a. Tank b. Regulator c. Valve d. Snorkel
12. The best way to be sure not to run out of air is to use a _____
a. Submersible Pressure Gauge b. K-Valve
c. 80 Cubic Foot Tank d. Wrist Watch
13. To protect the tank valve while you are transporting the tank you should:
a. Lay the tank on its side b. Be sure it is secure
c. Put it in the car with the valve pointed toward the rear
d. All of the above
14. Some decompression meters or computers are of little value to altitude divers because.
a. They are too heavy b. They are hard to read
c. They are affected by heights d. There is no altitude correction
15. The primary purpose of the snorkel is to permit the diver to:
a. Rest comfortably on the surface b. Have Buoyancy
c. Move with ease and comfort d. See better
16. All equipment should be fastened with:
a. Square knots b. Metal Buckles c. Velcro
d. Quick Release Fasteners
17. To be safe and increase the life span of a regulator, you should have it inspected and serviced by a qualified technician every:
a. Year b. Month c. Dive d. Time it breaths hard
18. Oxidation in a steel tank decreases the strength of the tank. Oxidation in an aluminum tank:
a. Prohibits further oxidation b. decreases its strength
c. makes it lighter d. changes its volume

DIVING HABITS AND PRACTICES:

1. The proper sequence for breathing through a snorkel is:
a. inhale, exhale, inhale b. forceful exhale, inhale, rest
c. inhale, rest, exhale d. inhale, forceful exhale, rest
2. A diver is someone who can operate underwater with:
a. ease b. comfort c. safety d. all of the above
3. To prevent overexpansion of the lungs, we must train ourselves to:
a. breathe all the time
b. come up slowly
c. hum or exhale when regulator is not in mouth
d. all of the above

4. The proper breathing pattern for efficient use of a SCUBA tank is:
 - a. clear, inhale, rest
 - b. deep inhale, long slow exhale
 - c. inhale, exhale
 - d. deep inhale, rest, long slow exhale
5. In descending, a diver experiences pressure on the ears; he can equalize by:
 - a. swallowing or chewing
 - b. yawning or pressing tongue against roof of mouth
 - c. holding the nose and blowing gently
 - d. all of the above
6. If during an Open Water dive you and your buddy became separated, you should:
 - a. return to where you last saw him and search
 - b. go up a few feet and search until you locate his bubbles
 - c. remain where you are until he finds you
 - d. spend no more than one minute looking and then surface and stay there
7. The maximum rate of ascent is:
 - a. 60 ft. per second
 - b. 60 ft per minute or slower
 - c. very slow
 - d. as fast as a big bubble
8. A diver should begin to equalize the pressure in his ears when:
 - a. he begins to descend
 - b. his ears begin to hurt
 - c. at 33 feet deep
 - d. the eustachian tube opens

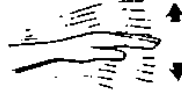
MATCHING:

9.



- a. take it easy, slow down
- c. level off, become neutrally bouyant

10.



- b. hold hands
- d. get with your buddy

11.



12.



- a. distress, help

13.



- b. out of air
- c. stop here
- d. something is wrong

14.



15.



- a. O.K.

16.



- b. we win

17.



- c. I don't understand
- d. hold hands

18. If you were descending and had trouble clearing your ears you should:
 - a. ascend to the surface and try again
 - b. stop and wait until the pain stops
 - c. ascend 2 or 3 feet and clear your ears
 - d. continue to the bottom and then clear your ears
19. When snorkeling without SCUBA buddies should surface dive:
 - a. one at a time
 - b. together
 - c. with a lifeline
 - d. in reaching distance
20. A good buddy will rarely be further away when using SCUBA than:
 - a. one body length
 - b. 10 feet
 - c. two minutes away
 - d. reaching distance

PHYSIOLOGY:

1. Water can absorb body heat _____ times faster than air.
 - a. 2
 - b. 4
 - c. 10
 - d. 25
2. Treatment for nitrogen narcosis is:
 - a. follow the U.S. Navy Dive Table Limits
 - b. Immediate recompression in a chamber
 - c. pure oxygen
 - d. ascend to a shallower depth
3. To prevent decompression sickness (the bends) you should:
 - a. never exceed the no decompression limits
 - b. come up slowly
 - c. follow the U.S. Navy Dive Tables
 - d. all of the above
4. Unequal pressures in air spaces that have not been equalized, is called:
 - a. squeeze
 - b. painful
 - c. pinch
 - d. all of the above
5. The four air spaces divers must consider in order to prevent injury from changing pressure when descending are:
 - a. frontals, ethmoidal, maxillary, sphenoid
 - b. sinuses, ears, lungs, mask
 - c. nose, chest, head, stomach
 - d. all of the above
6. If while using SCUBA your buddy lost consciousness immediately after surfacing, you should suspect:
 - a. air embolism
 - b. decompression sickness
 - c. nitrogen narcosis
 - d. hyperventilation
7. The need to breath is stimulated by:
 - a. high oxygen levels
 - b. high carbon dioxide levels
 - c. low oxygen levels
 - d. low carbon dioxide levels
8. Voluntary hyperventilation while snorkeling:
 - a. decreases your bottom time
 - b. can cause shallow water blackout
 - c. is very safe
 - d. does not tamper with your body's natural warning system
9. A sharp pain between the eyes just after you start your descent from the surface is probably caused by:
 - a. mask squeeze
 - b. lung squeeze
 - c. air embolism
 - d. sinus squeeze
10. A primary classic symptom of the bends is:
 - a. unconsciousness
 - b. pain in joints and extremities
 - c. frothy blood at the mouth
 - d. dizziness
11. Recompression by taking the diver down again is not practical because:
 - a. the diver could lose consciousness
 - b. the pressure required in many cases would require a depth of over 100 feet
 - c. a sufficient air supply and proper medical attention would not be available.
 - d. all of the above
12. Rupture of the ear drum underwater always will produce:
 - a. vertigo/dizziness
 - b. anoxia/loss of oxygen
 - c. unconsciousness
 - d. permanent deafness

MATCHING DEFINITIONS:

- | | |
|----------------------------|--|
| 13. Decompression Sickness | a. An air bubble in the blood |
| 14. Air Embolism | b. nitrogen bubble in the tissue |
| 15. Nitrogen narcosis. | c. nervous system impairment like alcohol intoxication |
| | d. a high pressure area next to a low pressure area |

MATCHING FIRST AID:

- | | |
|----------------------------|---|
| 16. Decompression Sickness | a. ascend a few feet |
| 17. Air Embolism | b. pure oxygen, laying down in a horizontal position, transport |
| 18. Nitrogen Narcosis | c. pure oxygen and transport to chamber |
| | d. cancel dive |

OCEANOGRAPHY - MARINE LIFE:

1. A boat anchored at the bow turns _____ the current.
 - a. away from
 - b. into
 - c. without
 - d. at an angle to
2. If you were swimming toward the beach and found you were not making any headway you should:
 - a. tread water
 - b. swim away from the beach
 - c. swim underwater toward the beach
 - d. swim parallel to the beach
3. Which of the following presents the least danger for SCUBA Divers.
 - a. ocean conditions
 - b. marine life
 - c. water visibility
 - d. pressure effects

4. A Rip Current will always:
 - a. increase the size of the breakers
 - b. reduce the size of the breakers
 - c. change directions every six hours
 - d. cut a trough parallel to the shore
5. When diving from a boat it is usually best to start your dive:
 - a. in any direction
 - b. against the current
 - c. across the current
 - d. with the current
6. A wave that breaks all at once and plunges almost directly on the beach, would most likely occur:
 - a. on a shallow sloping beach
 - b. on a steep sloping beach
 - c. on a rocky, irregular beach
 - d. at low tide on any beach
7. To avoid poisonous cone shell stings, wear gloves and pick up the shell by the _____.
 - a. small end
 - b. large end
 - c. middle
 - d. point
8. First Aid to neutralize most stings received underwater consist of applying:
 - a. hot water or diluted ammonia
 - b. alcohol or hot water
 - c. fresh water or alcohol
 - d. alcohol or ammonia
9. For the diver, the most important thing that is always affected when you change depth is:
 - a. temperature
 - b. buoyancy
 - c. visibility
 - d. humidity
10. Most divers require 1/4 inch wetsuit protection below what temperature:
 - a. 55
 - b. 65
 - c. 75
 - d. 85
11. A thermocline is:
 - a. an area of particularly bad visibility
 - b. an area of warmer than usual water
 - c. cold water
 - d. an abrupt transition in water temperature
12. Almost all injuries from marine life are caused by _____ reactions on the part of the animal.
 - a. offensive
 - b. defensive
 - c. instinctive
 - d. aggressive
13. Sharks are attracted by:
 - a. human smell
 - b. blood and erratic movement or vibrations
 - c. shiny objects
 - d. bubbles coming out of your regulator
14. Objects seen underwater through a face mask appear to be:
 - a. larger and farther away
 - b. smaller and closer
 - c. smaller and farther away
 - d. larger and closer
15. When diving in murky water, the diver should use a:
 - a. light
 - b. compass
 - c. depth gauge
 - d. all of the above
16. Which of the following is particularly important for limited visibility diving:
 - a. dive knife
 - b. underwater light
 - c. surface float
 - d. compass
17. Most waves are caused primarily by:
 - a. earthquakes
 - b. currents
 - c. winds
 - d. tides
18. Light reflected from particles in the water and diffused is helpful to a diver.
 - a. true
 - b. false

DIVE PLANNING AND DIVE TABLES:

1. If you use one cubic foot of air per minute on the surface and you dive to 99 feet, your 80 cubic foot tank should last you _____ minutes.
 - a. 20
 - b. 26.6
 - c. 1.2
 - d. .08
2. You have been swimming along the bottom in 20 feet of water for 10 minutes when you check the pressure. You find that you have used 400 psi at that depth. What is your surface air consumption rate per minute?
 - a. 20
 - b. 25
 - c. 33
 - d. 40
3. A repetitive dive is any dive taken within a ____ hour period of the previous dive.
 - a. 3
 - b. 6
 - c. 12
 - d. 24
4. The maximum time a diver may stay at a depth of 60 feet is:
 - a. 100 min.
 - b. 60 min.
 - c. 50 min.
 - d. 70 min.
5. A diver's repetitive group letter after a dive to 60 feet for 40 minutes is:
 - a. D
 - b. F
 - c. G
 - d. I
6. A diver with a repetitive group letter of "I" will have to spend a minimum of _____ hours:minutes on the surface to change that letter to a "G".
 - a. 0:59
 - b. 1:00
 - c. 1:29
 - d. 0:37
7. A diver with a group letter of "F" making a dive to 60 feet has a residual nitrogen time of:
 - a. 47
 - b. 36
 - c. 24
 - d. 30
8. A diver with a group letter of "D" can make a dive to 70 feet for a maximum ABT of _____ minutes.
 - a. 20
 - b. 30
 - c. 15
 - d. 50
9. A diver with a group letter of "D" makes a dive to 50 feet for 45 minutes. What is his new theoretical or total bottom time (TBT)?
 - a. 71 min
 - b. 29 min
 - c. 45 min
 - d. 74 min
10. Bottom time is officially defined as:
 - a. time on the bottom
 - b. total time underwater.
 - c. from the time you reach the bottom until you begin your ascent
 - d. from the time you leave the surface until the time you begin your direct ascent

11. When figuring a problem using the Decompression Tables; if a depth or time exceeds what is written in the table by one minute or one foot, you should:
 - a. think nothing of either a one minute or one foot variation
 - b. ascend at a slower rate
 - c. go to the next time or depth interval on your chart
 - d. make an extra stop in ascending
12. When making a series of dives during one day, it is always best to make the deepest dive:
 - a. last
 - b. first
 - c. the only one
 - d. anytime
13. You are making a Lake Dive at an altitude of 5000 feet. Your capillary guage has been left at home. You have a guage that will tell you exactly how far below the surface you are. Your first dive is to exactly 50 feet for 15 minutes. After a surface interval of 50 minutes you make a second dive to 50 feet. The maximum amount of time that you can actually spend on the bottom (ABT) on this dive is:
 - a. 21 min
 - b. 20 min
 - c. 43 min
 - d. 79 min
14. You are planning two dives to 60 feet. After the first dive to 60 feet for 45 minutes you spend one hour and 40 minutes on the surface. What would your maximum ABT be for a second dive to 60 feet using the safer time limits?
 - a. 36 min
 - b. 14 min
 - c. 60 min
 - d. 30 min
15. Your first dive is to 70 feet for 45 minutes. You would like to make a second dive to 70 feet for 30 minutes. Using the maximum time limit your minimum surface interval is:
 - a. 1:30
 - b. 2:45
 - c. 3:43
 - d. 2:02
16. A diver makes 2 dives and records them as follows:
The first dive is to 70 feet for 50 minutes. The surface interval is for two hours and then a second dive is made to 70 feet for 30 minutes. What is his total or theoretical bottom time (TBT) after the second dive?
 - a. 50 min
 - b. 30 min
 - c. 31 min
 - d. 61 min
17. Using the information from the dive described in #16, what is the decompression schedule for the second dive?
 - a. 8 minutes at 10 feet
 - b. 14 minutes at 10 feet
 - c. 18 minutes at 10 feet
 - d. none