

### Physiology Acknowledgement Form

#### Review questions

1. \_\_\_\_\_ provide structure for the body.
2. \_\_\_\_\_ contract to cause movement and protect organs.
3. The brain uses \_\_\_\_\_ of oxygen in blood.
4. The network of nerves has over \_\_\_\_\_ billion cells.
5. Cells begin to die within \_\_\_\_\_ minutes when oxygen deprived
6. The digestive system converts food to a form that can be transported and utilized by the cells  
TRUE FALSE

#### List 6 organs that make up the digestive system

7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_
13. \_\_\_\_\_ is the process that gets O<sub>2</sub> into body and CO<sub>2</sub> out.
14. Contraction of rib muscles and diaphragm bringing air into the body is \_\_\_\_\_
15. Relaxing of rib muscles and diaphragm taking air from the body \_\_\_\_\_
16. What are the large organs inside the chest cavity responsible for respiration? \_\_\_\_\_
17. The need to breathe is controlled by \_\_\_\_\_ levels in the body
  - a. Carbon Dioxide
  - b. Oxygen
  - c. Carbon Monoxide
  - d. Nitrogen
18. \_\_\_\_\_ carry oxygenated blood from lungs to heart.
19. \_\_\_\_\_ carry deoxygenated blood from heart to lungs.
20. Tissues (release or absorb) CO<sub>2</sub> if at high levels.
21. Tissues (release or absorb) O<sub>2</sub> if at low levels.

**For Questions 22-28 match the correct Respiratory Problems answer with the following:**

- a. Hypoxia
- b. Carbon Dioxide toxicity (Hypercapnia)
- c. Hyperventilation
- d. Shallow Water blackout
- e. Carbon Monoxide Poisoning
- f. Excessive Resistance to breathing
- g. Lipoid Pneumonia

22. A higher than normal  $PCO_2$  level in the blood. \_\_\_\_\_
23. Lower than normal  $PO_2$  level in the blood; insufficient oxygen in the blood and tissues. \_\_\_\_\_
24. Condition caused from breathing CO contaminated air source. \_\_\_\_\_
25. Problem that is result of breathing petroleum vapor. \_\_\_\_\_
26. Excessive ventilation rate that can lower  $CO_2$  too far. \_\_\_\_\_
27. Condition caused by hyperventilating that makes the body not feel the urge to breathe. \_\_\_\_\_
28. Problem that can occur from poorly tuned regulators, valves, hoses, or tight equipment. \_\_\_\_\_

29. Medical treatment for respiratory problems will typically include emergency oxygen and medical evaluation. TRUE FALSE

30. The most common squeeze or equalization problem on descent is?

- a. Mask squeeze
- b. Ear squeeze
- c. Equipment squeeze
- d. Sinus squeeze

31. Name and explain 3 different methods of equalizing ears

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

32. The most important rule in scuba diving is: \_\_\_\_\_

33. Lungs compress during descent if a diver holds their breath. TRUE FALSE

34. The danger of holding your breath while ascending from a dive is:

- a. Lung collapse
- b. Lung over expansion
- c. Blackout

**For Questions 35-39 match the effects of pressure during ascent with the following conditions:**

- a. Reverse Block
- b. Pneumothorax
- c. Mediastinal Emphysema
- d. Subcutaneous Emphysema
- e. Arterial Gas Embolism

35. Air rupturing the lung wall that vents into the pleural cavity. \_\_\_\_\_
36. When a bubble of gas causes blockage of blood to heart, brain, or other vital tissue. \_\_\_\_\_
37. Fullness, pressure, or pain in sinuses and ears during ascent. \_\_\_\_\_
38. Air escapes from lung into tissues around the heart, major blood vessels, and trachea. \_\_\_\_\_
39. Air forced into tissue beneath the skin of the neck. \_\_\_\_\_

40. Arterial Gas Embolism is life threatening and will usually occur within 5 minutes of surfacing.  
TRUE FALSE

41. Medical treatment for Air Gas Embolism should include: (circle all that apply)
- a. Establish and maintain CAB's
  - b. Initiate CPR if necessary
  - c. Administer 100% oxygen
  - d. Transport to nearest medical facility

**List 4 ways to minimize the risk of lung overexpansion.**

42. \_\_\_\_\_
43. \_\_\_\_\_
44. \_\_\_\_\_
45. \_\_\_\_\_

46. During emergency transport, altitude changes associated with plane, helicopter, or ground transport over a mountain can aggravate lung expansion injuries, AGE and DCS.

TRUE FALSE

47. Gas can expand in stomach and intestines during ascent causing belching and heartburn.

TRUE FALSE

**For Questions 48-50 match the indirect effects of pressure during descent:**

- a. Narcosis
- b. CNS –Oxygen Toxicity
- c. Whole Body – Oxygen Toxicity

48. Effects of breathing high PO<sub>2</sub> that results in convulsions during a dive. \_\_\_\_\_
49. A state of altered mental function at depth from increased partial pressure of nitrogen. \_\_\_\_\_
50. Condition that results from breathing high PO<sub>2</sub> during intensive dive operations or long oxygen treatments in a hyperbaric chamber. \_\_\_\_\_

51. What inert gas are divers most concerned about eliminating during ascent? \_\_\_\_\_

52. Condition that results from inadequate decompression following exposure to increased pressure causing bubbles to form in body tissues. \_\_\_\_\_

**While you can do everything correctly and still suffer DCS, prevention can be enhanced if you: (List 5 correct answers):**

53. \_\_\_\_\_
54. \_\_\_\_\_
55. \_\_\_\_\_
56. \_\_\_\_\_
57. \_\_\_\_\_

58. Adhering to accepted decompression limits and proper ascent rates is guarantee to avoiding decompression sickness. TRUE FALSE

59. Treatment of DCS includes (circle all that apply)
- 100% oxygen by demand valve
  - Make diver comfortable
  - Monitor CAB
  - Evaluation and possible treatment from a hyperbaric physician
60. Women should not dive during pregnancy. TRUE FALSE
61. Hypothermia occurs when the body is too \_\_\_\_\_.
62. Hyperthermia occurs when the body is too\_\_\_\_\_.
63. Hypothermia and hyperthermia can occur irrespective of ambient temperature.  
TRUE FALSE
64. Over the counter and prescription drugs can open sinus passages with no risk to diving situations. TRUE FALSE
65. Smoking reduces the oxygen carrying capacity of the blood and may predispose the diver to DCS. TRUE FALSE
66. Illicit Drugs and alcohol can: (Circle all that apply)
- Render diver incapable of responding in an emergency
  - Accelerate and multiply the effects of nitrogen narcosis
  - Increase the severity of DCS
  - Decrease ability to regulate body temperature
67. Divers Alert Network's emergency telephone number is \_\_\_\_\_.

I have watched the Diving Physiology PowerPoint. \_\_\_\_\_Initial

I have had explained and understand any of the questions that I missed or did not understand. \_\_\_\_Initial

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Print Name