

PHYSICS

- 1) If you raise the pressure of a gas in contact with a liquid:
 - a) Gas bubbles form
 - b) The liquid dissolves in the gas
 - c) The gas dissolves into the liquid
 - d) The liquid will evaporate

- 2) Objects in the water seem larger due to:
 - a) Visual reversal
 - b) Refraction
 - c) Magnification
 - d) Absorption

- 3) Water loses body heat about ____ times faster than air does.
 - a) 4
 - b) 7
 - c) 20
 - d) 200

- 4) True or false: Sound travels four times faster in water, making it seem like the sound is coming from overhead.

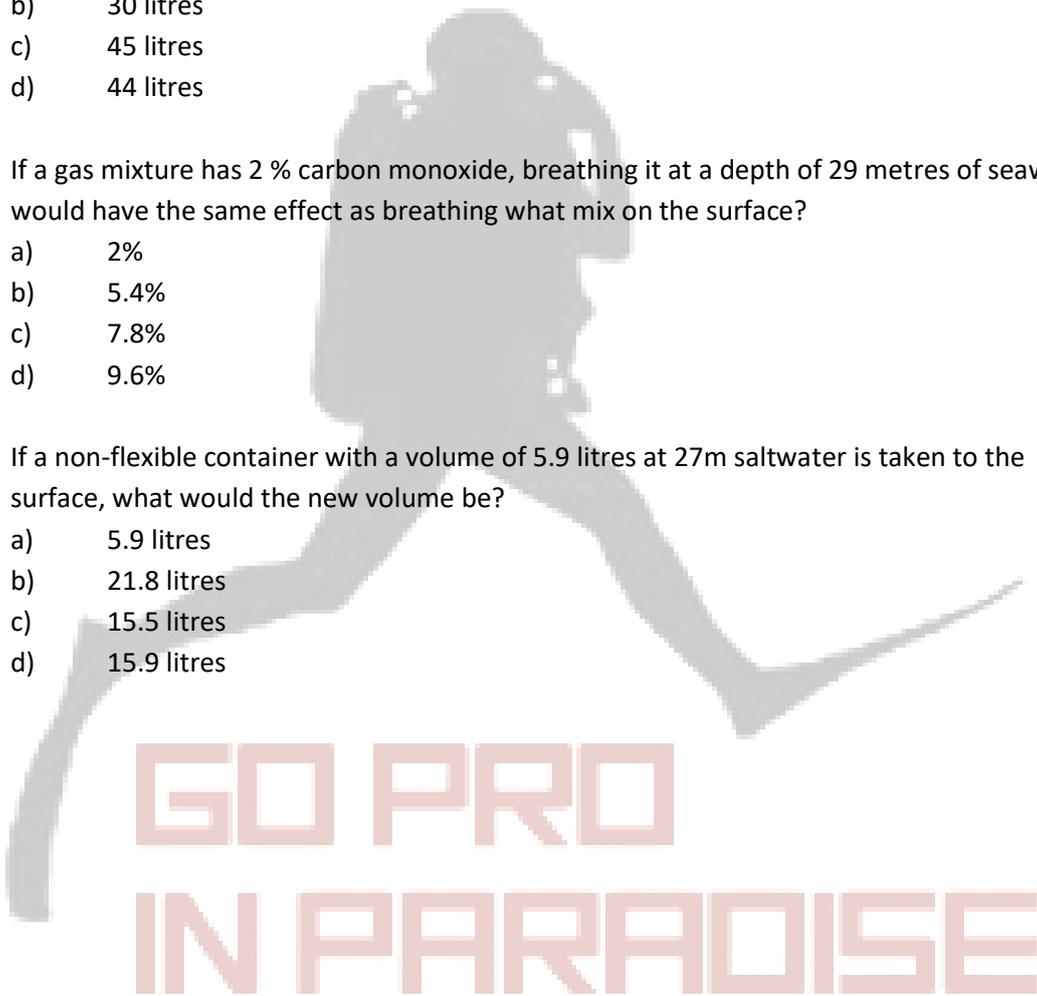
- 5) If you take a gas volume of 5 litres in a flexible container from the surface to 20 metres in freshwater, what will the new volume be?
 - a) 1.7 litres
 - b) 2.58 litres
 - c) 1.67 litres
 - d) 2.5 litres

- 6) At a depth of 29m in freshwater, what is the gauge pressure?
 - a) 2.9 Bar
 - b) 3.8 Bar
 - c) 2.8 Bar
 - d) 3.9 Bar

- 7) True or false: The body responds to the percentage of a gas in a mix of air that we breathe and not the partial pressure of each gas.

- 8) What is the partial pressure of each gas (oxygen and nitrogen) in a Nitrox 32 mix at a depth of 24m seawater?
 - a) O²: 1.06 bars / N²: 2.26 bar
 - b) O²: 1.09 bars / N²: 2.31 bar
 - c) O²: 0.77 bar / N²: 1.63 bar
 - d) O²: 1.09 bars / N²: 2.26 bar

- 9) If an object has 45kg positive buoyancy and displaces 100 litres of saltwater, how much weight must be added to make an object 25kg negatively buoyant?
- a) 55 kg
 - b) 83 kg
 - c) 58 kg
 - d) 70 kg
- 10) How much air must be pumped down from the surface to fill an open non-flexible 15 litre container lying in 20 metres of seawater?
- a) 15 litres
 - b) 30 litres
 - c) 45 litres
 - d) 44 litres
- 11) If a gas mixture has 2 % carbon monoxide, breathing it at a depth of 29 metres of seawater would have the same effect as breathing what mix on the surface?
- a) 2%
 - b) 5.4%
 - c) 7.8%
 - d) 9.6%
- 12) If a non-flexible container with a volume of 5.9 litres at 27m saltwater is taken to the surface, what would the new volume be?
- a) 5.9 litres
 - b) 21.8 litres
 - c) 15.5 litres
 - d) 15.9 litres



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IN PARADISE

Physiology

- 1) Shallow water blackout is caused by:
 - a) Increased levels of carbon monoxide
 - b) Increased levels of nitrogen
 - c) Decreased partial pressure of oxygen
 - d) Fast ascents

- 2) Factors that may increase a diver's risk of lung over expansion injuries include:
 - a) Smoking
 - b) Chest infection
 - c) Breath holding
 - d) All the above

- 3) Gas exchange in the body occurs where?
 - a) Between the pulmonary capillaries and the alveoli
 - b) Between the pulmonary arteries and the bronchi
 - c) In the hypothalamus
 - d) There is no gas exchange in the body

- 4) The most serious risk of diving with Enriched Air (Nitrox) is:
 - a) CNS oxygen toxicity
 - b) Pulmonary oxygen toxicity
 - c) Hypoxia
 - d) Mammalian dive reflex

- 5) What factors may predispose a diver to DCS?
 - a) Obesity (fat)
 - b) Dehydration
 - c) Alcohol consumption
 - d) All the above

- 6) Which of the following is a physiological response to cold?
 - a) Shivering
 - b) Vasoconstriction
 - c) Forgetfulness
 - d) All the above

- 7) Typically, AGE affects _____ of the body and the symptoms appear ____, / whereas DCS typically affects _____ of the body and the symptoms appear _____.
 - a) Both sides, immediately / one side, after a few hours
 - b) One side, immediately / both sides, after a few hours
 - c) Both sides, after a few hours / one side, immediately
 - d) One side, after a few hours / both sides, immediately

8) The greatest risk of a forceful Valsalva manoeuvre is:

- a) Ear drum rupture
- b) Sinus rupture
- c) Round window rupture
- d) Oval window rupture

9) After a dive a diver displays the signs and symptoms of tunnel vision and cherry red nail beds. The most likely cause is:

- a) DCS
- b) Lung over expansion
- c) Contaminated air poisoning
- d) All the above

10) The lung expansion injury characterised by air accumulation over the heart is:

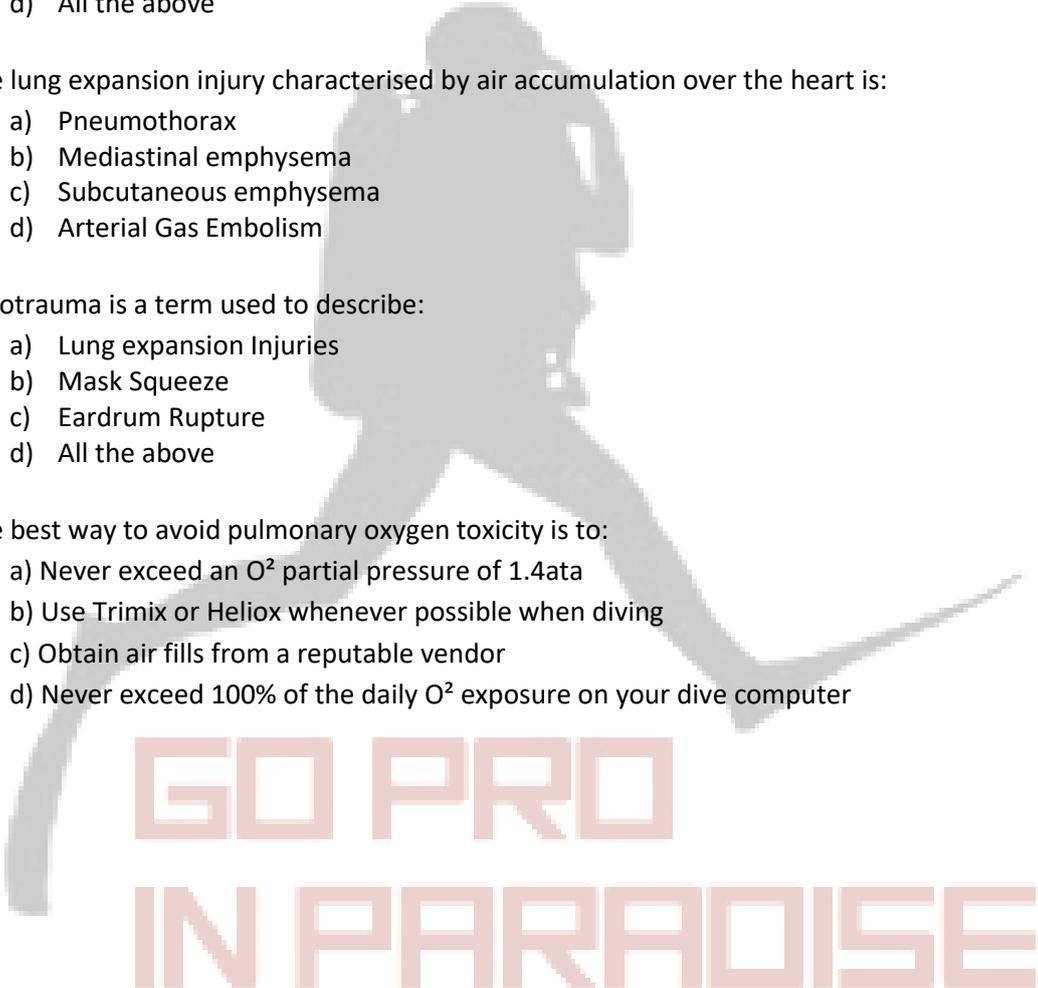
- a) Pneumothorax
- b) Mediastinal emphysema
- c) Subcutaneous emphysema
- d) Arterial Gas Embolism

11) Barotrauma is a term used to describe:

- a) Lung expansion Injuries
- b) Mask Squeeze
- c) Eardrum Rupture
- d) All the above

12) The best way to avoid pulmonary oxygen toxicity is to:

- a) Never exceed an O² partial pressure of 1.4ata
- b) Use Trimix or Heliox whenever possible when diving
- c) Obtain air fills from a reputable vendor
- d) Never exceed 100% of the daily O² exposure on your dive computer



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Recreational Dive Planner and Decompression Theory

- 1) The US Navy Tables were based on ____ tissue compartments and a ____ minute halftime, whereas the RDP was designed based on ____ tissue compartments and a ____ minute halftime.
 - a) 6 / 120; 14 / 60
 - b) 14 / 60; 6 / 120
 - c) 5 / 120; 6 / 60
 - d) None of the above

- 2) How long would it take for a 20-minute tissue compartment to fill or washout completely?
 - a) 100 mins
 - b) 120 mins
 - c) 80 mins
 - d) 240 mins

- 3) The DCS related problems due to diving at altitude occur because the diver begins the dive:
 - a) At an atmospheric pressure greater than at sea level
 - b) At an atmospheric pressure lower than at sea level
 - c) With a greater amount of O² dissolved in the tissues
 - d) All of the above

- 4) True or False - Pressure Group designations may be transferred between the RDP and the eRDPml.

- 5) The RDP is recommended for use at altitudes up to ____ metres.
 - a) 3000
 - b) 300
 - c) 240
 - d) 6500

Please use the Table RDP for the following questions

- 6) A diver in pressure group M plans a dive to 18 metres. What is his maximum bottom time?
 - a) 32 mins
 - b) 24 mins
 - c) 34 mins
 - d) 22 mins

- 7) A diver plans to do a 20-metre dive for 40 minutes. After a 45-minute surface interval, he plans a 30-minute dive. What is his maximum depth?
 - a) 16 metres
 - b) 18 metres
 - c) 20 metres
 - d) 22 metres

- 8) A diver plans to make the following 3 dives using minimum surface intervals - 18m for 40 mins; 24m for 22 minutes; and 30m for 20 minutes. Arrange the dives in order and determine how much time is needed to complete the profile. Include all required safety stops.
- a) 250 minutes
 - b) 304 minutes
 - c) 294 minutes
 - d) 247 minutes

Please use the eRDPml for the following questions

- 9) After a dive, a diver in pressure group S makes a 60-minute surface interval. What is his NDL for a dive to 19m?
- a) 15 mins
 - b) 25 mins
 - c) 30 mins
 - d) 20 mins
- 10) What is the minimum surface interval between two 20m dives of 38 minutes each?
- a) 1hr 55 mins
 - b) 2hrs 18 mins
 - c) 2hrs 31 mins
 - d) 2hrs 44 mins
- 11) After a dive to 30m and a surface interval, a diver is in pressure group B. If he would like to make a second dive for 16 minutes, what is his maximum depth?
- a) 28 metres
 - b) 24 metres
 - c) 22 metres
 - d) 20 metres
- 12) After a dive ending on pressure group T, a diver makes a 1hr 6-minute surface interval. What is his new pressure group?
- a) H
 - b) G
 - c) T
 - d) J

SKILLS AND ENVIRONMENT

- 1) Along the west coast of America and the east coast of Australia, the prevailing ocean currents run:
 - a) To the south
 - b) Anti-clockwise
 - c) Clockwise
 - d) To the north

- 2) The most accurate way of measuring distance underwater is:
 - a) Kick cycles
 - b) Arm spans
 - c) Timed swim
 - d) Air consumption

- 3) Waves are mostly caused by:
 - a) The relative position of the earth, moon & sun
 - b) Major ocean currents
 - c) Land masses
 - d) Wind

- 4) Lifting devices are recommended when lifting objects that weigh:
 - a) 1/10th of the diver's weight plus 3 kilos
 - b) Between 4 and 7 kilos (or more)
 - c) 20 kilos or more
 - d) the diver

- 5) If you are standing on a boat facing its bow, the starboard side is on your:
 - a) Left
 - b) Right
 - c) Leeward side
 - d) Aft

- 6) Special considerations for altitude diving include:
 - a) 9 metres/minute ascent rate
 - b) Converting actual depths to theoretical depths if using the RDP
 - c) Dive at highest altitude first
 - d) All of the above

- 7) The recommendation for all people on a PADI Night Adventure dive is:
 - a) To have one torch, a backup and a chemical light
 - b) To have one torch and a backup
 - c) To have one torch
 - d) Torches are not required on night dives

- 8) The best time to dive, regarding tides, is:
- a) High tide
 - b) Low tide
 - c) Slack high tide
 - d) Slack low tide
- 9) Near drowning victims should always be encouraged to see a physician because:
- a) They may have aspirated water, which could damage the lungs
 - b) They may become hypothermic
 - c) They will more readily acquire DCS
 - d) a) & b) are correct
- 10) When administering CPR, the preferred rate of compressions is:
- a) 60 – 80 per minute
 - b) Between 100 and 120 per minute
 - c) One every five seconds
 - d) As quickly as possible
- 11) The following could be useful in the event of a dive emergency:
- a) Oxygen, Emergency Management work slate, pencil
 - b) Snorkel, gauze and forceps
 - c) Pocket mask, Emergency Assistance Plan, 1st Aid kit
 - d) All of the above
- 12) Which of the following is the appropriate action for dealing with an unconscious diver in open water, 100 metres from the boat or shore?
- a) Call for help, wait for assistance and begin CPR immediately
 - b) Call for help and begin CPR while towing the diver to shore
 - c) Remove the diver's equipment and wait for help
 - d) None of the above

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IN PARADISE

EQUIPMENT

- 1) Steel cylinders have the advantage of _____ compared to aluminium tanks:
 - a) Lower working pressure with the same thickness
 - b) Less tendency for corrosion
 - c) Higher working pressure with the same thickness
 - d) Less weight

- 2) SCUBA which recycles gas, receives a steady flow of fresh gas, and allows the release of excess gas is called?
 - a) Open Circuit
 - b) Closed circuit
 - c) Semi-closed circuit
 - d) None of the above

- 3) An environmental seal is:
 - a) A green designation from NOAA which certifies the regulator as non-toxic
 - b) Used in cold water diving to prevent a regulator first stage from freezing up
 - c) A type of saltwater mammal that is eco-friendly
 - d) A way of ensuring the regulator will free-flow in the event of a malfunction

- 4) A _____ will function as designed if placed in the _____ position before a dive:
 - a) K valve, down
 - b) K valve, up
 - c) J valve, down
 - d) J Valve, up

- 5) A failsafe design on a modern regulator ensures that:
 - a) A regulators exhaust is vented into the water
 - b) Valves open against the flow of air
 - c) A regulator will free-flow in the event of a malfunction
 - d) Ambient breathing pressure will remain constant

- 6) True or False
A SCUBA cylinder should **never** be released of all internal pressure after use, to prevent corrosion.

- 7) Which is true of a capillary depth gauge:
 - a) They become harder to read at greater depths
 - b) They are often used for altitude diving
 - c) They indirectly convert actual depths to theoretical depths
 - d) All of the above

- 8) Capillary depth gauges work based on:
- a) Boyle's law
 - b) Murphy's law
 - c) Dalton's law
 - d) Henry's law
- 9) A burst disk may be found on:
- a) A regulator first stage
 - b) A regulator second stage
 - c) A BCD
 - d) A tank valve
- 10) A hydrostatic test consists of:
- a) Over pressurising a tank to check for metal fatigue
 - b) Filling a tank with seawater to check for corrosion
 - c) Tumbling a tank to remove corrosion
 - d) Heat treating a tank to remove paint and corrosion
- 11) A balanced scuba regulators' first stage:
- a) Can't supply the needs of two divers breathing simultaneously from the regulator
 - b) Is less capable of supplying air to accessories, such as low-pressure inflators
 - c) Provides greater airflow and breathes easier at greater depths
 - d) All of the above are correct
- 12) In a piston regulator:
- a) A diver's inhalation triggers the movement of a piston in the 2nd stage which allows air to flow to the diver
 - b) A diver's inhalation triggers the movement of a piston in the 1st stage, allowing air to enter the second stage hose
 - c) Air from the tank triggers a piston in the 2nd stage, resulting in a free-flow of air to the diver
 - d) Air from the tank is reduced to ambient pressure in the 1st stage