

Knowledge Review Answer Key

Underwater Navigation

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

1. I'm planning a dive in moderately low visibility (2-3 metres/6-10 feet) and I want to maintain buddy contact. Skill in underwater navigation will help me with this.
 - True
 - False
2. When measuring distance with kick cycles, you count when
 - each leg returns to the same position.
 - the same leg returns to the same position.
3. When estimating distance with elapsed time, you measure how long it takes to cover a fixed distance while swimming
 - somewhat slower than normal.
 - at a normal, relaxed pace.
 - faster than normal.
4. My buddy and I are diving from a boat that's moored in an area popular for diving. Which of the following pre-dive observations may assist us with natural navigation during the dive? (Choose all that apply.)
 - The divemaster tells us the boat is pointed directly into the current.
 - It's 3:30 p.m. and the sun is setting to the west.
 - There's a large buoy moored directly behind the boat.
 - The boat's depth finder shows 15 metres/50 feet directly under the boat.
5. To maintain my orientation and benefit from natural navigation, descend
 - feet above head, shoulder pointed in travel direction.
 - head above feet, shoulder pointed in travel direction.
 - feet above head, facing travel direction.
 - head above feet, facing travel direction.
6. While navigating with natural references, which of the following can help me? (Choose all that apply.)
 - Light and shadows
 - Water movement
 - Bottom composition and formations
 - Plants and animals
 - Noise/sounds
7. I'm navigating with a compass. To maintain an accurate heading, keep the _____ aligned with my body's centerline.
 - index marks
 - compass needle
 - bezel
 - lubber line

Underwater Navigation

8. With a standard analog compass, the _____ always indicates your travel direction. The _____ always points to magnetic north.
- compass needle; lubber line
 - lubber line; compass needle
 - index marks; bezel
 - bezel; compass needle
9. To set a reciprocal heading, turn the compass to a heading that is _____ from the original heading.
- 45°
 - 90°
 - 135°
 - 180°
 - 225°
 - 270°
 - 295°
 - 360°
10. During a dive, I'm following my compass but my sense of direction makes it feel like I should be going more to the right. Without any other information, the best tip would be to
- trust the compass.
 - go more to the right.
11. Which of the following usually make compass use more effective? (Choose all that apply.)
- Practice on land.
 - Allow for current effects.
 - Navigate around obstacles.
 - Midwater, your buddy monitors depth while you navigate.
 - Swim rapidly.

Knowledge Review Answer Key

Deep Diving

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

- Which of the following factors would I consider when determining my personal deep-diving depth limit? (Choose all that apply.)
 - Environmental conditions
 - My physical/psychological fitness
 - The effect of previous dives on my no stop (no decompression) limit
 - Distance from emergency care
 - My buddy's personal limits
- It's summer and I've been diving in the local area for several days, reaching a maximum depth of 12 metres/40 feet. Today, my buddy and I plan to dive to 30 metres/100 feet. Which of the following statements is true?
 - My exposure suit may not be adequate.
 - Cylinder size is not a major consideration.
 - I can divide required instruments between my buddy and me.
 - There's little benefit to a balanced first stage regulator.
- Which pieces of specialized equipment are recommended for deep diving? (Choose all that apply.)
 - Emergency breathing equipment
 - Ankle weights
 - Underwater light
 - Compass
- When descending into deep water, the recommended general body orientation is
 - head above feet.
 - feet above head.
 - position makes little difference.
- My buddy and I are ascending from deep water. To ascend at a proper rate, we (choose all that apply):
 - Ascend along a reference line or upward slope.
 - Check our computers every metre/few feet.
 - Maintain buoyancy control by adjusting our BCDs frequently.
 - Remove some weight at depth.
- My buddy and I lose our way on a deep dive and must surface without a reference. Steps for doing this include (choose all that apply):
 - ascending back-to-back.
 - using our computers to gauge a proper ascent rate.
 - adjusting our buoyancy frequently.
 - not making a safety stop.
- The primary way I avoid low-on-air or out-of-air emergencies on a deep dive is to limit dive time to 30 minutes.
 - True
 - False

Deep

8. My buddy and I are making a safety stop while ascending from a boat dive. The seas are calm but there's a current, so we're holding on to the mooring line. Ideally, we hold the line so 5 metres/15 feet is at _____ depth, and stay for ____ minutes or longer.
- face; three
 - face; five
 - chest; three
 - chest; five
 - waist; three
 - waist; five
9. My buddy and I are at 33 metres/110 feet. I feel intoxicated and notice I have trouble concentrating when I try to read my computer. To alleviate this, I should
- breathe slowly and deeply.
 - switch to my buddy's alternate air source.
 - surface immediately, breathe oxygen and seek medical care.
 - ascend to a shallower depth until symptoms/signs subside.
10. Choose all that are symptoms or signs of decompression sickness.
- Pain in arm, legs or torso
 - Staggering
 - Inappropriate laughter
 - Paralysis
 - Hyperactivity
 - Skin itch
 - Dizziness/vertigo
 - Coughing spasms
 - Cherry-red lips
11. The primary reason divers get decompression illness is
- computer malfunction.
 - residual nitrogen.
 - diver error.
 - equipment failure.
12. As responsible divers who want to reduce the risk of decompression sickness, my buddy and I (choose all that apply):
- ascend no faster than permitted by our computers.
 - use our computers and tables (RDP, eRDP_{ML}TM) accurately.
 - remain well within no stop (no decompression) limits.
 - make safety stops at the end of all dives (deep or shallow).
 - avoid/account for predisposing factors.

Knowledge Review Answer Key

Altitude Diving

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

1. With most dive tables and computers, an altitude dive is a dive made at an elevation higher than _____ above sea level.
 - 100 metres/330 feet
 - 300 metres/1000 feet
 - 1000 metres/3300 feet
 - 3000 metres/10,000 feet
2. Practically and theoretically, flying after diving and diving at altitude are the same thing.
 - True
 - False
3. Based on current recommendations, if I make repetitive no stop (no decompression) dives and/or dive for several days in a row, the minimum interval before flying is _____ hours.
 - six
 - 12
 - 18
 - 24
4. While carrying my gear to the shore for an altitude dive, I find myself feeling a bit breathless. I am probably feeling the effects of mild _____ and should _____.
 - hypoxia; pace myself and reduce strenuous exertion
 - anoxia; seek medical attention
 - hyperthermia; cool off
 - hypothermia; rewarm myself
5. Altitude can affect my dive instrumentation. With respect to my dive computer,
 - adjustments will be automatic.
 - I need to set it for altitude.
 - it will not be useable at altitude.
 - altitude use varies, so see the manufacturer instructions.
6. When using the RDP at altitude (Table or eRDP_{ML}TM), the maximum ascent rate is 9 metres/30 feet per minute, and I make my safety stop at the theoretical depth shown on the Theoretical Depth at Altitude table.
 - True
 - False
7. The generally recommended maximum number of altitude dives in a day is
 - one.
 - two.
 - three.
 - there is no limit.

Altitude

Optional: Use the RDP Table or eRDPM_L for the next questions:

8. I plan to dive to an actual depth of 18 metres/60 feet one hour after arriving to an altitude of 1090 metres/3578 feet. If I were to dive to the no stop (no decompression) limit, my no stop time (NDL) for a repetitive dive to the same depth after a 45-minute surface interval would be
- 24 minutes.
 - 18 minutes (metric)/20 minutes (imperial).
 - 16 minutes (metric)/18 minutes (imperial).
 - not applicable: A second dive is not permitted.
9. I plan to dive to an actual depth of 24 metres/80 feet after spending seven hours at the dive site altitude of 1226 metres/4023 feet. What is my no stop time for this dive?
- eRDPM_L metric: 31 minutes; RDP Table metric: 29 minutes;
eRDPM_L imperial: 30 minutes; RDP Table imperial: 30 minutes
 - eRDPM_L metric: 20 minutes; RDP Table metric: 20 minutes;
eRDPM_L imperial: 20 minutes; RDP Table imperial: 20 minutes
 - eRDPM_L metric: 18 minutes; RDP Table metric: 14 minutes;
eRDPM_L imperial: 16 minutes; RDP Table imperial: 16 minutes
10. Continuing with the previous example, if my bottom time is 15 minutes, would my no decompression limit for a repetitive dive to an actual depth of 18 metres/60 feet after a one-hour, five-minute surface interval be (use RDP of your choice):
- 25 minutes (eRDPM_L metric)?
 - 25 minutes (RDP Table metric)?
 - 24 minutes (eRDPM_L imperial)?
 - 20 minutes (RDP Table imperial)?
 - Yes
 - No

Knowledge Review Answer Key

Boat Diving

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

1. A boat's bow is the _____ while the stern is the _____ of the boat.
 - left side; right side
 - right side; left side
 - windward side; leeward side
 - leeward side; windward side
 - front; back
 - back; front
 - control room; kitchen
 - kitchen; control room
2. Port refers to the _____ and starboard refers to the _____ of a boat.
 - left side; right side
 - right side; left side
 - windward side; leeward side
 - leeward side; windward side
 - front; back
 - back; front
 - control room; kitchen
 - kitchen; control room
3. After everyone is on board, the boat captain gives a safety briefing that typically points out which of the following safety/emergency equipment? (Choose all that apply.)
 - PFDs (personal flotation devices)
 - First-aid kit and emergency oxygen unit
 - Seasickness medication
 - Fire extinguishers
 - Swim step
4. How do I prevent seasickness? (Choose all that apply.)
 - Use seasickness medication.
 - Don't eat before a trip.
 - Take along reading material to keep you busy.
 - Stay in fresh air away from engine fumes.
5. If I become seasick, I should go to the leeward rail to vomit and have someone hold on to me so that I don't accidentally fall overboard.
 - True
 - False

Boat

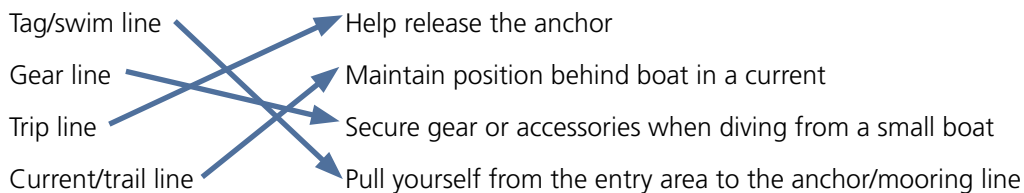
6. Which of the following are typical pre-dive procedures on a dive boat? (Choose all that apply.)

- Work from your dive bag so you save space as you suit up.
- Always put on my exposure suit first before preparing other equipment.
- Watch my balance – stay seated as much as possible or use handholds.
- Secure my scuba cylinder so it doesn't roll around.
- Conduct a pre-dive safety check with my buddy.

7. In general, when entering the water from a larger dive boat I should (number the following steps in their proper order):

- 4 Signal "okay" and clear the area.
- 2 Partially inflate my BCD and have my regulator in my mouth.
- 1 Check that my buddy is ready.
- 3 Hold my mask firmly and make sure the entry area is clear.

8. Draw a line from the type of line to its purpose.



9. My buddy and I surface with a group of divers behind a dive boat. While waiting our turn to exit, which of these procedures should we follow? (Choose all that apply.)

- Avoid positioning ourselves under a diver on a ladder.
- Hold on to the current line to maintain our position.
- Remove our fins well before we reach the boat.
- Take our masks off before boarding.
- Hand up cameras and accessory equipment.

10. After the last dive on a large dive boat, it's best to take off and disassemble my equipment, putting each piece in my gear bag as I go.

- True
- False

11. During the post-dive roll call, I notice that a diver answers for his buddy, even though his buddy is not nearby and I'm not sure I've seen his buddy on board. Is this the proper procedure?

- Yes, it's fine as long as his buddy is sure that the diver is aboard.
- No, all divers need to be physically present for roll call.

Knowledge Review Answer Key

Digital Underwater Imaging

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

- Water affects the light reaching my camera by (choose all that apply):
 - reducing the amount of light available.
 - absorbing color.
 - reducing sharpness.
- The best overall angle for underwater photography is
 - close to my subject, looking slightly upward.
 - close to my subject, looking slightly downward.
 - far from my subject, looking slightly upward.
 - far from my subject, looking slightly downward.
- Options for good color underwater may include to (choose all that apply):
 - use external lighting/internal flash.
 - set my camera's white balance to underwater/automatic mode.
 - use a filter.
 - set my lens for telephoto.
- I'm setting up my camera housing and notice a scratch in the main o-ring. To get a proper seal, I should
 - use o-ring cement to repair it.
 - apply extra silicone grease to the area.
 - apply no silicone grease to the area.
 - replace the o-ring.
- Generally, it's a good idea to leave the port cover on my camera system until I get in the water, and to replace it before exiting.
 - True
 - False
- After an ocean boat dive, I learn the freshwater rinse got knocked over and there's no fresh water. It will be about two hours to reach shore. My best bet is to
 - dry the system with a towel.
 - allow the system to air dry.
 - keep the system wet in seawater until I can rinse in fresh water.
- The "rule of thirds" means
 - putting your subject where imaginary lines divide the frame into thirds.
 - shooting only a third of your subject.
 - taking three photos or takes of every subject.
- For the most viewable videos, I want to shoot so that I can tell a story by editing the clips together.
 - True
 - False

Digital Underwater Imaging

9. My buddy has an out-of-gas emergency and the camera system is in the way of sharing gas. I should
- give it to my buddy.
 - ditch it to handle the situation.
10. During a dive, I notice there's water in my housing. I should
- make a rapid ascent.
 - make a normal ascent.

Knowledge Review Answer Key

Drift Diving

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

1. What are the advantages of drift diving? (Choose all that apply.)
 - Drifting along requires little effort.
 - I can stay longer and go deeper on a drift dive.
 - I can dive even in a moderate to strong current.
 - Navigation is easier because I don't return to a specific exit point.
2. My buddy and I plan to drift dive down a local river. What should we consider as part of our dive plan specific to drift diving? (Choose all that apply.)
 - Whether the river has obstructions and sufficient depth for our planned route.
 - Where will we exit downstream.
 - The need for surface support to exit.
 - How will we maintain buddy contact.
3. When drift diving from a boat, it's important to have someone on the boat who keeps track of where the divers are.
 - True
 - False
4. I'm on a dive boat approaching a dive site where I plan to drift along a wall. The boat pauses at the entry point to allow the divemaster and divers to evaluate conditions. At this point, the divemaster decides against the drift dive and the boat heads to a different site. What could be reasons for this decision? (Choose all that apply.)
 - Most divers onboard are new to drift diving and the current appears much stronger than usual.
 - It's windy, causing surface chop and whitecaps.
 - Many divers have been to this dive site before.
 - It's cloudy and most divers don't have dive lights.
5. During the dive briefing on the boat, the divemaster describes the entry technique in which all divers enter the water together and descend as a group immediately, with no time on the surface. This is necessary, because the dive starts on a small pinnacle before we drift over to the main wall. This entry is called a _____ entry.
 - buoyant
 - negative
6. Especially when drift diving, it's important to never enter the water from a boat until signaled by the crew to do so.
 - True
 - False
7. I'm drift diving with a group of five other divers. Which of the following can help me and the group stay together? (Choose all that apply.)
 - As I descend, maintain buddy contact, but also stay with the group leader.
 - While drifting, stay up current from (behind) the group leader.
 - Continuously hold on to the float line.
 - If the group leader stops, stop until the leader continues onward.

Drift

8. What general procedures should I follow when waiting to exit the water onto a boat after a drift? (Choose all that apply.)
- Swim toward the boat immediately after I surface.
 - Maintain buddy contact and stay close to the group.
 - Keep my mask on and my snorkel/regulator in my mouth.
 - Don't get under a diver who is climbing up the ladder.
9. During a drift dive, my buddy pauses to look at something by ducking out of the current behind the reef. I have to swim against the current a short distance to reunite, so my best option is to swim in midwater, well above the bottom, and swim with all my strength fighting the current.
- True
 - False
10. My buddy and I momentarily stop to take a photo while making a group drift dive. When I look up, the group seems to have drifted around a corner, so we swim a little faster to catch up. However, after rounding the corner, we can't find the group even though visibility is good. Unless planned otherwise, we should
- swim faster until we catch up.
 - look for the group for no more than one minute, then surface to reunite with the group.
 - stop, hold on to a nonliving object if necessary and wait for the group leader to come back for us.

Knowledge Review Answer Key

Dry Suit Diving

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

- Hypothermia occurs when a diver's core body temperature becomes _____ normal. To avoid hypothermia, always wear adequate _____ protection before, during and after a dive.
 - above; sun
 - above; exposure
 - below; sun
 - below; exposure
- Even mild hypothermia can be a problem for divers, because it causes (choose all that apply):
 - unclear thinking.
 - poor decision making.
 - severe joint and limb pain.
 - reduced strength and endurance.
- I'm trying on dry suits at my local PADI Dive Center and the dive pro asks me about the comfort of the neck seal. Why is the neck seal fit important?
 - It should be loose enough to allow my hood to fit underneath it.
 - It should be extremely tight.
 - If it is too tight, it can restrict blood flow and cause light-headedness and unconsciousness.
- On a hot summer day, my buddy and I are preparing to dive in a cool mountain lake. I should put my dry suit on _____ as I prepare my equipment to avoid _____.
 - last; overheating
 - last; hypothermia
 - first; overheating
 - first; hypothermia
- Regarding buoyancy control, match the following:

Positive buoyancy at surface	→	Add gas to dry suit
Neutral buoyancy underwater	→	Vent gas from suit/BCD
To prevent squeeze on descent	→	Add gas to BCD
Controlling buoyancy on ascent	→	Add gas to suit/BCD
- After putting my suit on I must _____ excess air so my suit doesn't _____ when I enter the water.
 - add; squeeze
 - add; balloon
 - purge; squeeze
 - purge; balloon
- If I set my dry suit exhaust valve correctly, I will never need to manually vent gas, even during an ascent.
 - True
 - False

Dry Suit

8. Which of the following is something I can do if I have too much air in my dry suit legs/feet and begin to rise feet first?
- Rapidly tuck into a ball while rolling onto my back, then dump gas as needed.
 - Kick as hard as possible to swim to the bottom and grab hold of a nonliving object.
 - Inflate my BCD to bring my head up so that I can vent gas through my neck seal.
 - Release my weight pocket/belt and hold it against my ankles.
9. If I accidentally drop my weight system during a dive, I should (choose all that apply):
- control my ascent by dumping as much gas as possible from my suit/BCD.
 - flare out to create drag and try to grasp the descent/ascent line, if possible.
 - vent gas continuously through my dry suit's exhaust valve or a seal as I ascend.
 - exhale/breathe normally throughout the ascent, being sure to never hold my breath.
10. During a dive, my buddy gets my attention and points to a neck seal tear, with a strong bubble stream coming from it. My buddy signals "cold." What should I do?
- Provide my buddy with my alternate air source.
 - Immediately end the dive and help my buddy make a controlled ascent.
 - Drop my buddy's weights and signal my buddy to swim hard to reach the surface.
 - Hold the neck seal tear tightly and swim slowly toward the exit point.

Knowledge Review Answer Key

Fish Identification

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

1. Approximately how many different fish species are thought to exist worldwide?
 - Nearly 100,000
 - 50,000
 - More than 21,000
 - Less than 4000
2. What is a simple strategy for identifying fish?
 - Focus on common characteristics that help me identify a fish as belonging to a family.
 - Always take several photographs of each fish for identification later.
 - Never dive without a complete set of waterproof fish identification cards.
 - Note the depth and location of each of the fish I want to identify.
3. My buddy and I are planning a dive to a reef at 20 metres/66 feet. Our goal is to see the greatest variety of fish possible. What would be the best way to do this?
 - Swim around as fast as we can.
 - Hover over a patch of reef and let the fish come to us.
 - Calmly swim around the reef.
4. Which of the following are groupings of fish families commonly used in tropical or temperate waters? (Choose all that apply.)
 - Butterflyfish, angelfish and surgeonfish
 - Parrotfish and wrasse
 - Groupers, seabass and basslets
 - Flounders, scorpionfish, lizardfish and frogfish
 - Filefish, triggerfish, puffers, trunkfish, cowfish, goatfish, trumpetfish and drums
 - Snakes and serpents
 - Sharks and rays
5. Which characteristics may assist you in distinguishing between fish families? (Choose all that apply.)
 - Size
 - Color
 - Body shape
 - Fin configuration
 - Habitat and behavior
6. I spot a fish that has a boxy shape and two appendages that look like small horns coming out of the top of its head. This is likely to be a
 - triggerfish.
 - cowfish.
 - goatfish.
 - pufferfish.

Fish Identification

7. I see two eyes sticking up from the sand on a fish that appears to be flat. This is likely a/an
- eagle ray.
 - jawfish.
 - grouper.
 - flounder.
8. The “roving diver” survey technique means that I follow a strict search pattern and only identify fish that appear directly in front of me on my planned path.
- True
 - False
9. I see a fish I can't identify and complete a sketch of it on my slate. To identify it after the dive, I can (choose all that apply):
- consult with a more experienced fish watcher.
 - check a fish reference book.
 - compare my sketch to the local fish identification slate.
 - assume that it is an unknown species.
10. Scuba divers and snorkelers are the world's “natural” ambassadors for the aquatic environment because they see changes to favorite dive sites over time and generally (choose all that apply):
- support the establishment of underwater parks and protected areas.
 - support legislation and regulation to protect threatened species and habitats.
 - pick up marine debris and participate in both underwater and beach cleanups.
 - care about what they love: the underwater world.
11. Project AWARE's mission is to educate divers and the public about environmental issues affecting aquatic environments, and unite them in efforts to protect and sustain them.
- True
 - False

Knowledge Review Answer Key

Night Diving

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

1. Your buddy has just bought a new regulator and BCD and wants to go night diving with you. What would the general recommendation be?
 - Never use new or unfamiliar equipment on a night dive.
 - When possible, become familiar with equipment before using it on a night dive.
 - There is no recommendation that applies.
2. Setting up for a night dive, you and your buddy attach small marker lights to your cylinder valves. Where else might you use such lights? (Choose all that apply.)
 - On your dive float
 - Attached to the descent/ascent line
 - At a boat's swim step
 - Strapped to your right ankles
3. When choosing a potential site for a night dive, a spot you've never visited before is generally more exciting and rewarding.
 - True
 - False
4. Environmental conditions to avoid while night diving include (choose all that apply):
 - moderate to high surf.
 - cool water.
 - moderate or stronger current.
 - poor visibility.
 - heavy surge.
 - overhead environments.
 - wrecks.
5. Which of the following are general night diving planning considerations? (Choose all that apply.)
 - Prepare your equipment ahead of time in daylight if you'll be in an unlit area.
 - Eat a proper meal a few hours before the dive.
 - Dive with familiar buddies.
 - Bring someone who won't be diving.
6. You and your buddy are on a night dive. A large fish swims by and startles your buddy, causing stress. Your buddy should
 - breathe rapidly.
 - get behind you.
 - stop, think and then take appropriate action.
7. During a night dive, your light fails. Normally, you would respond by holding on to your buddy so you can share one light and end the dive.
 - True
 - False

Night

8. About 20 minutes into a night dive, you turn and find your buddy's nowhere to be seen. You cover your light and look for the glow of your buddy's light and search for about five minutes. After failing to reunite, you ascend to reunite on the surface. Did you follow the correct procedure?
- Yes
 - No
9. You're forced to ascend without a reference on a night dive. Which of the following steps can help you avoid or deal with disorientation midwater? (Choose all that apply.)
- Avoid direct buddy contact.
 - Don't look down.
 - Watch your computer.
10. When entering the water on a night dive, always use a light to check the entry area before going in.
- True
 - False
11. What are the recommendations for night diving descents that reduce disorientation and stress? (Choose all that apply.)
- Follow a reference line or bottom contour.
 - Keep your feet above your head.
 - Descend as quickly as possible.
12. What are the recommendations for night diving ascents that reduce disorientation and stress? (Choose all that apply.)
- Follow a reference line or bottom contour.
 - Look down the entire time.
 - Ascend slowly.
13. You want to signal your buddy to turn a night dive and head back. You should signal at
- eye level and point your light at your hand.
 - waist level and point your light at your hand.
 - eye level and point your light at your buddy.
 - waist level and point your light at your buddy.
14. On a night dive, your buddy's gotten a bit farther from you than you'd like, but you can still see each other's lights. As you swim toward each other, your buddy makes a big circle with a light. This means
- Zero air – need help immediately
 - Oriented – follow me
 - Okay – situation normal
15. To navigate effectively at night and avoid getting disoriented, (choose all that apply):
- dive the site during the day.
 - get a compass heading to the exit before descending.
 - do not go as far from my exit as I might during the day.

Knowledge Review Answer Key

Peak Performance Buoyancy

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

1. I'm about to dive in a freshwater lake. I'm using exactly the same equipment I always use in seawater, and I'm familiar with the buoyancy change to expect. Nonetheless, it would be best to conduct a buoyancy check.
 - True
 - False
2. Number the five steps for conducting a buoyancy (weight) check in the correct order:
 - 2** Enter water too deep to stand, and deflate my BCD (and dry suit) completely.
 - 3** Hang vertical and motionless while holding a normal breath.
 - 1** Put on all equipment.
 - 4** Add or subtract weight until I float at eye level while holding a normal breath.
 - 5** As a test, exhale. I should sink slowly.
3. My buddy and I adjust for neutral buoyancy at the beginning of the dive, and continue at the same depth throughout the dive. I notice that I must occasionally let a little air out of my BCD to remain neutral during the dive. Why?
 - To compensate for the gas used from my cylinder.
 - To compensate for buoyancy changes due to exposure suit compression.
 - Because as I tire, I breathe deeper and keep my lungs more inflated.
 - Because as I tire, I kick less efficiently.
4. If diving with a steel cylinder, I do not need to account for the air I consume during the dive.
 - True
 - False
5. When I'm neutrally buoyant, I _____ slightly as I inhale and _____ slightly as I exhale.
 - sink; rise
 - sink; move
 - glide; rise
 - rise; sink
6. Besides wearing the correct amount of weight, generally I want to distribute weights so that my natural orientation in the water is as _____ as possible.
 - vertical
 - horizontal
 - negative
 - positive
7. I want to be streamlined when diving because it helps me (choose all that apply):
 - maintain an efficient kicking style.
 - use less gas.
 - stay warmer.
 - avoid damage to gear and aquatic life.

Peak Performance Buoyancy

8. If I'm wearing a lot of weight, such as with a full wet suit or dry suit, using multiple weight systems gives me more options for positioning and managing my weights.
- True
 - False
9. In any environment, when wearing a wet suit or dry suit, I need to adjust my buoyancy as I change depths during the dive. Why does this occur?
- Water density changes with depth.
 - My lung volume changes with depth.
 - Depth changes a suit's water volume.
 - Pressure change affects the gas bubbles in my wet suit and/or the gas volume in my dry suit.

Knowledge Review Answer Key

Search and Recovery

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

1. A friend tells me that he lost his 48-kilogram/105-pound anchor near the harbor entrance in 35-45 metres/115-150 feet of water. He's looking for divers to recover his anchor. Is this a task for a recreational search and recovery diver?
 - Yes
 - No
2. Which of the following are potential hazards for search and recovery diving? (Choose all that apply.)
 - Sharp objects and debris
 - Entanglement
 - Loss of buddy contact
 - Boat traffic
3. The first step in planning a search and recovery dive is generally to
 - choose an appropriate site.
 - select a buddy team.
 - define the objective.
 - collect and analyze information.
4. My buddy and I plan to search for a lost mask at a local dive site that has excellent visibility (18 metres/60 feet). I talk to the diver who lost the mask and determine that much of the search area is no deeper than 10 metres/30 feet over sand bottom. Would it be appropriate to search from the surface snorkeling?
 - Yes
 - No
5. A diver drops a weight belt off the end of a long pier. My buddy and I know the bottom off the pier is about 12 metres/40 feet deep and is covered with large, irregular protruding rocks. I decide to use a/an _____ search pattern.
 - expanding square
 - circular
 - U pattern
6. On shore after a dive, I realize that my fish identification slates are missing. I last saw them when I surfaced by our float before swimming to shore on the surface. The float is still deployed about 20 metres/yards offshore in 9 metres/30 feet of water on a gently sloping sandy bottom. My buddy and I decide to look for the slates on the next dive and choose to use a/an _____ search pattern.
 - expanding square
 - circular
 - U pattern
7. If I have a line available and am looking for a small object in a relatively small area, over a flat bottom, a circular search pattern may be a good choice.
 - True
 - False

Search and Recovery

8. My buddy and I come across two BCD weight pouches on the bottom. After trying to pick them up, we realize they are heavy and probably weigh more than 8 kilograms/20 pounds each. My buddy signals for me to take one pouch and he'll carry the other to the surface. What should I do?
- Agree and inflate my BCD to offset the extra weight so I can ascend.
 - Disagree, mark the location and leave the weights until we can return with a lift bag.
9. What features of a commercially made lift bag make it desirable for recovering underwater objects? (Choose all that apply.)
- Comes with a low-pressure inflator and deflator
 - Is constructed from heavy-duty materials
 - Has exhaust valves to vent air on ascent
 - Has loops or slings for easy rigging
10. Of the knots listed, I will normally use a _____ to form a loop to tie a line to something, and a _____ to tie two lines together.
- sheet bend; bowline
 - sheet bend; two half-hitches
 - two half-hitches; bowline
 - two half-hitches; sheet bend
 - bowline; two half-hitches
 - bowline; sheet bend
11. I should use my primary second stage to inflate a lift bag, and position myself below the bag and object as I control it on the way to the surface.
- True
 - False

Knowledge Review Answer Key

Underwater Naturalist

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

1. The definition of ecology is the study of the interrelationship of living things and their environment.
 - True
 - False
2. A(n) _____ is defined as a complex of living things and their environment functioning as a unit.
 - ecosystem
 - ecology
 - symbiosis
 - parasite
3. Light penetration, oxygen distribution and air versus water density are three physical characteristics that differ significantly between land ecosystems and aquatic ecosystems.
 - True
 - False
4. My buddy and I swim along the edge of a coral reef. A damselfish darts out and tries to bite my buddy's arm. Surprised, we quickly swim away from the little fish. After the dive, my buddy says that the fish "did not like me," which is why it tried to bite. Is this a correct perception?
 - Yes – aquatic creatures can attack out of malice, anger and revenge.
 - No – the fish was probably defending its territory.
5. People often inaccurately perceive aquatic life as (choose all that apply):
 - dangerous and harmful.
 - harmless – much like domestic animals.
 - nonliving, inanimate objects.
 - having human characteristics.
6. To interact passively with aquatic organisms, I should avoid (choose all that apply):
 - touching and handling creatures.
 - gathering aquatic life.
 - chasing aquatic animals.
 - underwater photography.
7. There are no circumstances when I should ride an aquatic animal in the wild.
 - True
 - False

Underwater Naturalist

8. As soon as the dive boat moors at a popular dive site, I notice that many reef fish come up to the back of the boat. The divemaster explains that this is not natural behavior and is caused by people feeding the fish. What are other possible consequences of fish feeding? (Choose all that apply.)
- Divers will see a wider variety of fish.
 - Fish may stop their normal feeding behaviors.
 - Fed species may lose their natural fear of humans.
 - Eating unnatural foods may cause illness.
9. How can I avoid damaging the aquatic environment while diving? (Choose all that apply.)
- Maintain neutral buoyancy and stay well off the bottom.
 - Swim horizontally and be aware of my fin movement.
 - Streamline my equipment so that hoses and gauges don't dangle.
 - Avoid touching or accidentally bumping delicate aquatic creatures.

Knowledge Review Answer Key

Wreck Diving

Answer the following questions by selecting the best choice (or choices) from those provided. Be prepared to discuss the material at your next training session.

1. Removing artifacts from wrecks is _____, because doing so makes wrecks _____.
 - encouraged/safer
 - discouraged/hazardous
 - encouraged/more interesting
 - discouraged/less interesting
2. In many areas and on many wrecks it is illegal to remove artifacts without a permit.
 - True
 - False
3. In some areas you need a permit to dive on wrecks.
 - True
 - False
4. You and your buddy are planning a dive on a wreck. To avoid and manage the risks of sharp objects on the wreck, and entanglement, you (choose all that apply):
 - wear exposure protection.
 - maintain good buoyancy control.
 - avoid swimming through/under net, fishing line or other rope/line.
 - carry a knife or other cutting tool.
5. You're planning a dive to a wreck at 27 metres/90 feet. Which planning/equipment considerations may apply? (Choose all that apply.)
 - PADI Deep Diver training
 - Extra gas supply
 - Narcosis
 - Short time limits
 - PADI Enriched Air Diver training
6. Dive techniques, hazards and points of interest may vary from wreck to wreck, so when diving on one that's unfamiliar to you, it's a good idea to get
 - an extra cutting tool.
 - a local orientation.
 - a still or video camera.
 - its sonar topography.
7. It is extremely hazardous to penetrate a wreck without the special equipment and training required.
 - True
 - False

Wreck

8. When diving a wreck, evaluate (choose all that apply):
- possible hazards.
 - points of interest.
 - cause of sinking.
 - general condition.
9. You and your buddy are navigating on a wreck that's broken apart. You can't really determine its structure, nor are there many obviously different features. The navigation method you'd use is probably
- following the wreck's layout.
 - feature reference.
 - using a base line.