Tec 45

Tec 45 Knowledge Development One

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 10-33, Equipment I, Tec Exercise 1.2, pgs 80-87, Equipment II, Tec Exercise 2.1, pgs 142-145, Equipment III, Tec Exercise 3.1
Watch the *TecRec Equipment Setup and Key Skills* video.

Other Delivery Content, Tec 45-1

Study assignment: Tec 45 Handout 1

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 93-97, Determining Gas Supply and Reserve Requirements for Multiple Depths and Decompression Stops
pgs 146 -161, Gas Planning III, Tec Exercise 3.2

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 167-172, Turn Around Points and Environmental Variables, Tec Exercise 3.4, questions 2-4

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 173-175, Team Diving III, Tec Exercise 3.5

Tec 45 Knowledge Review One

Please complete this review to hand in to your instructor. If there's something you don't understand, review the related material. If you still don't understand, be sure to have your instructor explain it to you.

1. What are the limits of your training as a Tec 45 diver?

2. What are your responsibilities during the Tec 45 course?

3. What is meant by "standardized technical rig" and why do you need to apply it?

4. Describe the proper types, number, location and configuration within your rig of the following equipment components and how your gear will look when worn:

Manifold (if applicable) -

Right regulator and accessories –

Sidemount –

Left regulator and accessories –

BCD and harness -

Instruments –

Compass –

Timing Device & Depth Gauge –

Cutting tools –

Pockets and clips -

5. Describe a suitably rigged stage/deco bottle.

6. List three reasons why tec divers consider a slate standard equipment.

7. List three types of dive computers you can use for technical diving with air and enriched air, along with the advantages and disadvantages of each.

8. Name two buoyancy control devices and explain what is meant by "appropriate back up buoyancy. "

9. How does a technical dive in dry suit differ from a recreational dive? What is the recommended number of recreational dives in a dry suit that you should have before using it on a technical dive?

10. What are four different weighting options for tec diving and list the advantages and disadvantages of each.

11. What is the primary hazard of diving negatively buoyant, and how do you manage this hazard?

12. List the guidelines regarding material and equipment compatibility using enriched air and oxygen. What do you risk if you fail to follow these guidelines?

13. List four reasons why DSMBs are replacing lift bags in tec diving situations.

14. (Metric) If your SAC rate is 24 litres/minute, how much gas volume do you need for 20 minutes at 30 metres? What would your total volume be with a reserve based on the rule of thirds?

14. (Imperial) If you SAC rate is . 8 cfm, how much gas volume do you need for 20 minutes at 90 feet?

15. (Metric) What is your turn pressure for your back gas based on the dive profile information below? Do you have enough back gas to do the dive and return with a one-third reserve?

15. (Imperial) What is your turn pressure for your back gas based on the dive profile information below? Do you have enough back gas to do the dive and return with a one-third reserve?

16. Explain how you determine your required decompression stops using a single gas computer or table, and how to use switches to enriched air or oxygen to make the decompression more conservative.

17. What is a gas-switch, extended no-stop dive?

18. What should you do if you find narcosis affecting your or your team mate's ability to accomplish the mission and/or dive safely?

19. What is your END with enriched air and why?

20. What is the "ideal" oxygen in a gas mix for a dive to 25 metres/83 feet?

21. List your responsibilities as a team member when technical diving.

22. Where is your team mates rank in your chain of back ups? What is the one back up your team mates provide that you cannot provide?

23. What are four guidelines to consider when planning to tec dive in an unfamiliar environment?

24. What is the myth about learning to dive with certain methodologies or in certain environments?

Student Diver statement: I've reviewed the questions I answered incorrectly or incompletely and I now understand what I missed.

Signature _____ Date _____

Tec 45 Knowledge Development Two

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 176-179, Thinking Like a Tec Diver III, Tec Exercise 3.6

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 194-201, Gas Planning IV, Tec Exercise 4.2

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 202-209, Emergencies IV, Tec Exercise 4.3

Other Delivery Content, Tec 45-2

Study assignment: Tec 45 Handout 2

Tec 45 Knowledge Review Two

Please complete this review to hand in to your instructor. If there's something you don't understand, review the related material. If you still don't understand, be sure to have your instructor explain it to you.

1. Define a "trust me dive" and explain why you should not make them.

2. List the six principals for surviving a tec dive.

3. What is run time? How do you use it?

4. Explain what you should do if you cannot switch to your shallower gas blend when making a gas switch extended no-stop dive.

5. Gas matching (optional): You are diving double 18 litre/104 cubic foot (working pressure 2400) cylinders filled to 150 bar/2200 psi. Your team mate will use double 21 litre/120 cubic foot (working pressure 2400) cylinders filled to 160 bar/2350 psi. If you gas match, what pressure should you have remaining at the end of the dive, and at what pressure should you turn the dive?

6. What should you do to ensure you don't lose your decompression cylinders?

7. What do you do if your dive goes deeper and/or longer than planned?

8. What should you do if you miss a decompression stop?

9. What should you do if you have a delay in your ascent to a decompression stop?

10. What should you do if you omit some or all of your decompression?

11. What should you do if you run out of gas?

12. How do you handle a lift bag that spills as it ascends be cannot be pulled back down to be redeployed?

13. What is a drift kit? What items would you have in it, and when would you use it?

Student Diver statement: I've reviewed the questions I answered incorrectly or incompletely and I now understand what I missed.

Signature _____ Date _____

Tec 45 Knowledge Development Three

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 192-194, Equipment IV, Tec Exercise 4.1

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 210-211, Thinking Like a Tec Diver IV, Tec Exercise 4.4

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 222-227, Oxygen Window and Accelerated Decompression, Deep Stops, Tec Exercise 5.1

Other Delivery Content, Tec 45-3

Study assignment: Tec 45 Handout 3

Manual Supported Content

Study assignment: *Tec Deep Diver Manual*, pgs 228-229, Techniques IV, Tec Exercise 5.2

Tec 45 Knowledge Review Three

Please complete this review to hand in to your instructor. If there's something you don't understand, review the related material. If you still don't understand, be sure to have your instructor explain it to you.

1. Explain the difference and give examples of acceptable and unacceptable home-made gear. What is the most common homemade item used by tec divers?

2. List four attitudes that characterize leading tec divers.

3. What is the oxygen window?

4. List three techniques you can use to make accelerated deco dives more conservative.

5. What are two primary options for conducting deep stops?

6. Define a "drift hang," and list four disadvantages of using it.

7. What is the most important resource in a tec diving emergency and what provides this resource?

8. What is an air break and how is it performed?

Student Diver statement: I've reviewed the questions I answered incorrectly or incompletely and I now understand what I missed.

Signature _____ Date _____