



The British Sub-Aqua Club

FIRST CLASS DIVER

DIVING KNOWLEDGE EXAM October 2006

Name:

Please read the following instructions carefully before you begin answering the questions.

- ? **Answer all 30 questions.** Write your answers in the spaces on the question paper. Please remember to put your name on the paper.

- ? Brief answers are possible for most questions. Answer as concisely as possible. Use diagrams where these help your answer or where they are asked for.

- ? There are 2 marks for each question.

- ? The time allowed is 60 minutes.

- ? Write all answers in ink, as clearly as possible.

- ? You may use a calculator but please show all calculations.

- ? You will need your own copy of the complete BS-AC'88 Tables, levels 1-4 and BSAC Nitrox Tables. No other reference material of any kind is allowed.

- ? All questions assume sea water (density 1.025 kg/litre) and the prevailing conditions in the United Kingdom unless otherwise stated.

- ? Please check your work very carefully. A mistake at an early stage of some questions may result in a series of wrong answers and a loss of marks.

<p>Please note that the mark awarded by the examiners for your performance on this paper is final and under no circumstances can the examiners enter into any correspondence or discussion with you regarding this paper.</p>

Medical

1. What is the new recommended rate for Chest compressions & Rescue Breaths and why do the new rescue techniques advocate starting with chest compressions rather than breaths?

2. What is near drowning? How does it happen?

3. How can you treat near drowning?

4. How does Nitrogen cause narcosis? Name three other inert gases, list them with nitrogen in order of increased narcotic effect.

5. How would you recognise whether a diver was suffering from DCI?

6. Name five diving related situations where administering O₂ will be helpful.

Decompression

7. Give 4 advantages of diving with nitrox.

8. Give 4 disadvantages of diving with nitrox.

9. Name the three phases and describe the symptoms of each phase which you would typically expect to see in a diver with a CNS toxicity 'hit'.

10 What does the term 'super saturated' mean in relation to decompression theory?

11. Sketch a simple decompression trapeze; annotate your drawing to explain the purpose of each part.

12. When performing a decompression stop, how would you communicate with the surface to indicate a problem, such as shortage of gas?

Equipment

13. What +/- percentage should a NITROX mix be within? What should you do if it is outside these percentages?

14. Why do freeflows occur in a regulator and what steps can you take to prevent them?

15. A small hole has been found in the diaphragm of the second stage regulator. How would this affect the diver if he/she used it in this condition?

16. What does an Eddy Current test for?

17. 465 bar and 348 bar are test pressures for which items of equipment?

18. A stream of small bubbles is seen coming from your pressure gauge during a dive. Draw a sketch to show what could be causing the problem and explain how it could be rectified.

Dive planning and techniques

19. You are organising a Regional Expedition but have had poor response to your advertisements on the BSAC forums, the regional website and presentation at your regional conference. List some other ways you could try to fill the remaining places.

20. A diver that you do not know applies to join a REDS expedition and says he is an experienced dive leader with 150 UK dives. List three ways you could confirm this prior to the expedition.

21. You are diving from RHIBS on wrecks in 40m, 5 miles offshore and 10 miles from your port. What points do you need to consider when planning your voyage to ensure you comply with SOLAS V?

22. What information would you relay to the coastguard on VHF radio prior to departing port for your dive?

23. You are carrying out a risk assessment for an adventurous drift dive in a narrow channel. You have experienced competent and confident dive leaders and advanced on board each with at least 250 uk dives and experience of pinnacle and slower drift divers. The tide is running at about 3-4knots on the surface and you know seabed is undulating and suspect eddy currents will be encountered in all directions (up, down, left, right). The underwater visibility is 10m. The depth at the end is either 40m if you get pulled to the right and have a slow ascent, or if you head left you have to work your way over a 20m cliff to 6m to continue the drift. List 5 key risks to be considered.

24. List 3 ways you can minimise the risks to an acceptable level.

Weather & Seamanship

25. In the shipping forecast, what is the distance of visibility for the terms “fog”, “poor”, “moderate” and “good”?

26. Describe the shape of cirrus and cumulus clouds. Which type of cloud do you usually find leading a warm front?

27. What are the light sequences for North, East, South and West Cardinal Marks (Buoys)?

28. Outline three of the properties of nylon rope? Would this type of rope make a good mooring line?

29. In way point navigation, what do the following abbreviations mean: XTE, SoG, DTG, TTG?

30. List four types of anchor and what type of seabed they are good for holding in. What would be the typical weight of an anchor for a 5m RIB?