



The British Sub-Aqua Club

# FIRST CLASS DIVER

DIVING KNOWLEDGE EXAM    October 2004

Name:

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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.

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.

Medical

1. List 3 stimuli that might cause a wheezing attack in an asthma sufferer.

Which of these are the most likely to affect a diver unexpectedly?

2. How do you assess the size of the most appropriate Geudel airway to use?
3. What is the advantage of opening the mouth of a casualty after giving a breath of AV?

Should this action be done in water?

4. At what body core temperature do the symptoms of hypothermia become apparent?

What first aid treatment can other divers, in a boat, employ when these symptoms occur?

5. What is often the first sign when administering O<sub>2</sub> to a casualty suffering from a decompression incident?

6. What is the difference between decompression sickness and decompression illness?

## Decompression

You are at the end of a dive Expedition with Transglobal Conservation Projects (TCP) and are due to fly at 0800 tomorrow morning. You have not dived for 24 hours in anticipation and are acting as boat cover for local divers. As the last dive pair is recovered at 1600 your Dive computer is lost over the side. Only you and the Dive guide have any no stop time left and you now only have BSAC '88 tables. The site is formed by a series of ledges at 17, 15 and 8 metres and you know from experience that to cover them fully would require sweeps of 8 minutes each.

7. Can you do this dive and still fly the next day?

8. If so sketch the dive profile?

9. Write out a Run Time Slate for this dive?

10 What would be your maximum descent rate and your final surfacing code?

Explain how your computer might have made this dive easier?

**Equipment**

11 Explain, using two diagrams if needed, how an environmentally sealed regulator differs from a non- environmentally sealed regulator.

12. The propeller on my club RIB has the markings 15" X 18". What does this mean?

13. The 100HP engine on our 7.5M RIB does not reach maximum revs when the RIB is fully loaded. How could we change this for minimum outlay?

14. What is the present and proposed differentiation between air and nitrox cylinders?



18. Your branch has just been left in a will a Proton Magnetometer. What is it and how will you use it?

**Dive planning and techniques**

19. When briefing a group of divers, what information would you expect to be included about the dive site?

20. When briefing a group of divers on the risks associated with their chosen dive site, what would you expect to be included?

21. List the tasks that you might expect a dive marshal to delegate on the day of a dive?

22. Describe a convention of signalling, using DSMBs, by divers underwater for surface cover indicating:

- a) I / we are okay
- b) Problem! Help required
- c) Gas required at stop

23. What would you expect each dive buddy pair to confirm to the dive marshal prior to entry into the water?

24. What would you expect the dive marshal to ask for from buddy pairs on surfacing?

**Weather & Seamanship**

25. Give 4 reasons why a fixed VHF radio is preferable to a mobile phone aboard a dive boat.

26. The Shipping forecast indicates a force 4, what does this mean in terms of wind speed, and what type of sea would we expect?

27. Planning to dive 7 miles offshore, the forecast tells of a depression, to pass just to the North, moving steadily at 15-25 kn. What further information would we require before going diving?

28. At 10.00a.m., when the dive boat sets off, the wind is steady force 3, southerly and the tidal stream is northerly. Shortly after noon, the tidal stream quickly turns southerly. What sea state would be expected at 10.00a.m and how would this sea state change in the afternoon. And why?

29. Your 5m RHIB 'Flossie' has 4 divers aboard. Eddystone light is approximately 1m to the South, and you are heading to shore. The RHIB hits a submerged object, is badly holed and is sinking quickly. What Mayday message are you going to send?

30. What do the following abbreviations stand for;
- a. GMDSS
  - b. DSC
  - c. SOLAS
  - d. VHF