

CERTIFICATES OF COMPETENCY FOR ENGINEERS (YACHT)

EXAMINATIONS ADMINISTERED BY THE
SCOTTISH QUALIFICATIONS AUTHORITY
ON BEHALF OF THE
MARITIME AND COASTGUARD AGENCY

STCW 95 CHIEF ENGINEER (REG. III/3) – “YACHT 4”

**057-02 OPERATIONAL PROCEDURES, BASIC HOTEL SERVICES
AND SHIP CONSTRUCTION**

FRIDAY, 18 APRIL 2008

1400 - 1600 hrs

Examination paper inserts:

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Notes for the guidance of candidates:

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| <ol style="list-style-type: none">1. Non-programmable calculators may be used.2. All formulae used must be stated and the method of working and ALL intermediate steps must be made clear in the answer. |
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Materials to be supplied by examination centres

Candidate's examination workbook

OPERATIONAL PROCEDURES AND BASIC HOTEL SERVICES

Attempt ALL questions

Marks for each question are shown in brackets

1. (a) State the meaning of the term *machinery space*. (2)
(b) State TWO warnings which should be listed on a notice outside an unmanned machinery space. (2)
(c) State, with reasons, the procedure to be followed prior to entry into an unmanned machinery space. (3)
(d) State, with reasons, the precautions to be adopted by a person alone in the space. (3)

2. Describe EACH of the following, stating their purpose:
(a) Merchant Shipping Notices; (4)
(b) Marine Guidance Notes; (3)
(c) Marine Information Notes. (3)

3. With reference to Oily Water Separators and the pumping of bilges, explain EACH of the following:
(a) why some systems situate the bilge pump after the separator, rather than before the separator; (3)
(b) the meaning of *coalescence*; (3)
(c) why some systems incorporate heating elements; (2)
(d) the purpose of a recirculation line. (2)

4. With reference to an engine losing power and misfiring after bunkering marine gas oil for main propulsion purposes:
(a) state the immediate action to be taken; (1)
(b) state THREE possible causes; (3)

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- (c) describe the action to be taken in the event of EACH of the causes stated in Q4(b) being found to be the source of the problem. (6)
5. (a) State THREE advantages of using condition monitoring as part of a planned maintenance system. (3)
- (b) State THREE examples of criteria that could be used as a basis for condition based maintenance. (3)
- (c) State FOUR reasons for keeping records of operating criteria and planned maintenance carried out. (4)
6. The temperature of a vessel's deep freeze is rising. Investigation reveals the compressor is cycling (repeatedly starting and stopping).
- (a) State FOUR possible causes for the fault. (4)
- (b) Explain the procedure to rectify the faults listed in Q8(a). (6)
7. With reference to air conditioning and the use of psychrometric charts:
- (a) sketch a simple psychrometric chart, showing the saturation line and the line of 50% humidity; (6)
- (b) explain how the humidity of air is established using thermometers and the chart. (4)
8. With reference to superchlorination of fresh water tanks:
- (a) state TWO occasions when this should be carried out; (2)
- (b) list the procedure to be followed. (8)
9. Define EACH of the following, stating an example in EACH case where a fire could be caused:
- (a) spontaneous combustion; (4)
- (b) flash point; (3)
- (c) auto ignition temperature; (3)
10. With reference to ocean going vessels, define EACH of the following:
- (a) trim; (1)

- (b) freeboard; (1)
- (c) camber; (1)
- (d) length between perpendiculars; (1)
- (e) length Overall; (1)
- (f) sheer; (1)
- (g) stem; (1)
- (h) draft marks; (1)
- (i) draft; (1)
- (j) depth; (1)