

CERTIFICATES OF COMPETENCY FOR ENGINEERS (YACHT)

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

**SMALL VESSEL CHIEF ENGINEER UNLIMITED
SMALL VESSEL CHIEF ENGINEER LIMITED**

059-01 - CHIEF ENGINEER STATUTORY AND OPERATIONAL REQUIREMENTS

FRIDAY, 28 May 2021

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. Candidates should note that 100 marks are allocated to this paper. To pass candidates must achieve 50 marks.2. Non-programmable calculators may be used3. 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

CHIEF ENGINEER STATUTORY AND OPERATIONAL REQUIREMENTS

Attempt ALL questions

Marks for each part question are shown in brackets

1. With reference to the International Safety Management Code (I.S.M):
 - (a) state the purpose of having a *designated person ashore* (d.p.a.); (6)
 - (b) state the TWO certificates that are required to be carried on a vessel in order to demonstrate compliance with the code. (4)

2. With reference to the International MARPOL Convention Annex V pollution of the sea by garbage:
 - (a) list SIX special areas that apply to the disposal of garbage; (6)
 - (b) state the disposal restrictions that are placed on EACH of the following categories of garbage within the various special areas:
 - (i) operational waste; (1)
 - (ii) ground-up food waste. (3)

3.
 - (a) State FOUR reasons why an Engine Room Log should be completed. (4)
 - (b) List SIX typical Engine Room Log entries. (6)

4. With reference to the International Load Line Convention:
 - (a) sketch and label a typical load line marking for a vessel certificated to operate in all zones; (5)
 - (b) define statutory minimum *freeboard*. (2)
 - (c) explain why there are different load lines for fresh water and sea water. (3)

5.
 - (a) List FOUR aspects upon which a new person joining a vessel for the first time would receive instruction. (4)
 - (b) Detail SIX ways in which personal action can increase the risk of fire on a vessel. (6)

6.
 - (a) Define a Classification Society. (6)
 - (b) State the periods between docking surveys for a vessel less than 15 years old. (4)

7. With reference to plant monitoring as part of a planned maintenance system:
- (a) list the various parts of a single main engine unit (piston, liner etc) that would be calibrated during full overhaul; (6)
 - (b) list the specific parts of the engine that would require examination, if a routine crankcase oil sample report indicated high levels of tin and lead. (4)
8. (a) State the procedures and safety checks that should be undertaken prior to flooding a dry dock. (9)
- (b) State who is responsible for signing the authority for a Flood Certificate. (1)
9. (a) A vessel with two main engines each with a working sump lubricating oil capacity of 750 litres and an average daily consumption each of 3.5 litres at full power, has bunkered 1000 litres of oil.
- Calculate the steaming range of the vessel when the engines are operated at full power delivering a speed of 15 knots to the vessel. (6)
- (b) State the factors that should be considered when determining the fresh water requirements for a voyage. (4)
10. (a) List THREE types of fixed fire suppression installations commonly found on vessels. (3)
- (b) Describe EACH method by which the THREE listed in part (a) extinguish fire. (4)
- (c) State, with reasons, ONE advantage and ONE disadvantage of EACH. (3)