

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, 26 February 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:

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| Candidate's examination workbook |
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CHIEF ENGINEER STATUTORY AND OPERATIONAL REQUIREMENTS

Attempt ALL questions

Marks for each part question are shown in brackets

1. SOLAS requires regular testing of Emergency Sources of Electrical Power.

Describe the recommended routine testing procedure for the emergency generator, in accordance with Maritime & Coastguard Agency (MCA) guidance. (10)

2. With reference to the International MARPOL Convention 73/78 Annex V - Garbage handling:
 - (a) list SIX defined categories of garbage; (6)
 - (b) list FOUR garbage handling procedures that require an entry in the garbage record book. (4)

3. With reference to the STCW '78 as amended, machinery space watchkeeping requirements, state EACH of the following:
 - (a) the purpose of *standing orders*; (3)
 - (b) FOUR examples of *standing orders*; (4)
 - (c) the circumstances under which it would be inappropriate for an officer in charge of an engineering watch to hand over responsibility to a relief watchkeeper. (3)

4. The Marine Accident Investigation Branch (M.A.I.B.) carries out investigations into casualties and accidents involving United Kingdom flagged vessels.
 - (a) List TWO responsibilities of the M.A.I.B. (2)
 - (b) State the Statutory requirements for reporting an accident. (4)
 - (c) List FOUR types of incident that are defined as *reportable accidents*. (4)

5. With reference to the classification of a vessel:
 - (a) list SIX items that would be inspected during a *special hull survey*; (3)
 - (b) describe how a *continuous hull survey* could be applied. (7)

6. With reference to a vessel's maintenance:
- (a) list FOUR reasons why it is desirable for machinery to be covered by a planned maintenance system; (4)
 - (b) state FOUR reasons why unscheduled maintenance may need to be performed; (4)
 - (c) state ONE example of acceptable unscheduled maintenance. (2)
7. With reference to vessel's survey requirements:
- (a) describe FIVE ways in which Government Surveyors will act in maintaining the statutory requirements of a vessel; (5)
 - (b) list FIVE ways in which Classification Surveyors can act to maintain the class and statutory requirements of the vessel. (5)
8. With reference to the periodical dry-docking of a vessel:
- (a) state FIVE items of information that may be obtained from a *docking plan*; (5)
 - (b) state FIVE services that must be made available in order to maintain the safety of the vessel. (5)
9. A vessel has bunkered 250 tonnes of diesel fuel of which 10% is assumed to be unpumpable. The average combined sea load of the vessel is 2800kW with a stated specific consumption of 0.35kg/kWh at a speed of 18 knots.
- Calculate EACH of the following:
- (a) the daily fuel consumption of the vessel; (4)
 - (b) the safe steaming range of the vessel. (6)
10. With reference to transverse watertight bulkheads, state EACH of the following:
- (a) FOUR reasons why these are an important part of the vessel's structure; (4)
 - (b) the positions of each of the FOUR most important watertight bulkheads; (4)
 - (c) the reason why the foremost continuous bulkhead is of a stronger construction. (2)