

CERTIFICATE OF COMPETENCY EXAMINATION

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

SMALL VESSEL CHIEF ENGINEER <3000 GT, UNLIMITED
SMALL VESSEL CHIEF ENGINEER <500 GT, UNLIMITED

059-01 - CHIEF ENGINEER STATUTORY AND OPERATIONAL REQUIREMENTS

FRIDAY, 16 February 2024

1400-1600 hrs

Examination paper inserts:

Notes for the guidance of candidates:

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 used
3. All formulae used must be stated and the method of working and ALL intermediate steps must be made clear in the answer.

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 Maritime Organisation (IMO);
 - (a) state SEVEN of the main matters considered by the Maritime Safety Committee (MSC); ✓ (7)
 - (b) list THREE other main committees of the IMO. ✓ (3)

2. Describe the procedure for using the local, emergency steering position, should the bridge control system become inoperative. ✓ (10)

3. With reference to the MARPOL Convention Annex I - Shipboard Oil Pollution Emergency Plan (SOPEP);
 - (a) outline FOUR minimum requirements that should be included in the plan; ✓ (4)
 - (b) describe the actions that should be taken on discovering an accidental discharge of oil during bunkering. ✓ (6)

4.
 - (a) List SIX items of information that should be conveyed to the relieving officer, prior to taking over the engineering watch at sea. ✓ (6)
 - (b) State FOUR criteria which should be taken into account when deciding on the composition of the engineering watch. ✓ (4)

5. With reference to the International Convention on Load Lines:
 - (a) list SIX different trading areas that are applied to the measurement of the freeboard of a vessel; ✓ (2)
 - (b) outline FOUR circumstances that would cause a vessel to infringe the Load Line regulations if it attempted to proceed to sea. ✓ (8)

6. Describe the role of EACH of the following:
 - (a) the International Maritime Organisation; ✓ (4)
 - (b) the Maritime and Coastguard Agency; ✓ (3)
 - (c) the Marine Accident Investigation Branch. ✓ (3)

7. (a) Describe what is meant by Continuous Class Machinery Surveys. ✓ (4)
- (b) State FOUR reasons why the fuel efficiency of a vessel maybe less than the build sea trials data. (4)
- (c) List FOUR typical defects which may reduce the output of a centrifugal pump. ✓ (2)
8. With reference to the periodical routine dry-docking of a vessel:
- (a) state FOUR reasons for dry-docking; ✓ (4)
- (b) outline THREE methods of testing a hull for watertight integrity. ✓ (6)
9. With reference to dry-docking:
- (a) state what is meant by the *critical period* on settling onto the dock blocks; ✓ (3)
- (b) explain the reasons why this period is considered critical; ✓ (5)
- (c) state how the danger is reduced. ✓ (2)
10. Describe the methods by which a high pressure water-mist fire suppression system extinguishes fire, stating why it is more effective than a low pressure sprinkler system. ✓ (10)