

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, 24 May 2024

1400-1600 hrs

Examination paper inserts:

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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

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CHIEF ENGINEER STATUTORY AND OPERATIONAL REQUIREMENTS

Attempt ALL questions
Marks for each part question are shown in brackets

*Mediteranean + Carib's
Australia
Gulf etc*

1. With reference to the MARPOL Convention:
 - (a) list FIVE *Particularly Sensitive Sea Areas* (P.S.S.A.); (5)
 - (b) outline the general requirements for vessels transiting P.S.S.A. (5)

2. (a) In addition to the Engine Room Log, a general abstract associated with the main and auxiliary machinery should be completed.

List SIX details which are normally recorded in the abstract, in the case of main engines and generators. *avg. l.o. - hrs since over haul
- hrs since injc charge*
- (b) State the main reasons why an abstract is kept. *overall running cond. of engine* (4)

3. With reference to the International Convention on Load Lines:
 - (a) define the terms *freeboard* and *freeboard deck*; (5)
 - (b) list FIVE items that would be inspected by a surveyor before issuing or endorsing a load line certificate. *- free parts
- markings & correct
- water tight integ.* (5)

4. With reference to the Maritime Labour Convention (MLC), each member state shall ensure that ships that fly its flag have "Seafarers Employment Agreements" in place. State the FIVE requirements of these agreements. *- place of Repatriation
- agreed wages
- agreed time off
- social security in case of sickness* (10)

5. (a) List FOUR examples of materials on board a vessel for which a Material Safety Data Sheet (MSDS) should be supplied. *VOC'S, PCB'S, Acetone, Paints, cleaning solutions, solvents* (4)
- (b) List SIX items of information that could be obtained from a MSDS. *health hazard
- first aid
- ingredients & concentrations* (6)

6. With reference to condition monitoring: *engine*
 - (a) explain how vibration analysis can be used as part of a planned maintenance system; *touch ← pumps Motors* (7)
 - (b) list SIX tests that can be carried out on crankcase oil in order to determine its suitability for further service. (3)
 - viscosity
 - flash point
 - TBN
 - suspended particles / wear
 - water con
 - fuel dilution

renewal of stat certs are aligned, special hull survey

7. (a) Define the term *harmonisation system of survey and certification*. (4)
- (b) With reference to a vessel of 500 gross tonnes or more and carrying 12 passengers, list SIX statutory certificates that are required to be carried out in order to demonstrate compliance with the IMO Conventions. (6)
8. (a) State the procedures and safety checks that should be undertaken prior to flooding a dry dock. *All work comp. / Plugs, and grates put back Tanks in similar condition / movable weights in similar cond.* (9)
- (b) State who is responsible for signing the authority for a Flood Certificate. (1)
- MASTER*
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. (6)
- 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)
- Consumption Rate*
- # of people
- watermaking capacity
10. (a) Write standing orders detailing the procedures to be followed in the event of a fire within the machinery spaces. *Inform Raise Alarm Restrict - extinguish PIP all available means* (6)
- (b) List FOUR types of portable fire extinguisher that could be found within the machinery spaces, stating on which class of fire EACH should be used. (4)
- find leak*
- WATER: A*
CO2: B
FOAM: AB
POWDER: ABC

IOPP