

# **CERTIFICATES OF COMPETENCY FOR ENGINEERS (YACHT)**

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

**SMALL VESSEL SECOND ENGINEER**

**060-02 - OPERATIONAL PROCEDURES, BASIC HOTEL SERVICES AND SHIP CONSTRUCTION**

**FRIDAY, 05 March 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"><li>1. Candidates should note that 100 marks are allocated to this paper. To pass candidates must achieve 50 marks.</li><li>2. Non-programmable calculators may be used</li><li>3. All formulae used must be stated and the method of working and ALL intermediate steps must be made clear in the answer.</li></ol> |
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Materials to be supplied by examination centres:

Candidate's examination workbook
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## OPERATIONAL PROCEDURES, BASIC HOTEL SERVICES AND SHIP CONSTRUCTION

Attempt ALL questions

Marks for each part question are shown in brackets

1. With reference to the Code of Safe Working Practices for Merchant Seafarers and entering enclosed or confined spaces, state EACH of the following:
  - (a) the reasons why the atmosphere of any enclosed space is potentially dangerous; (4)
  - (b) the precautions to be taken before a potentially dangerous space is entered. (6)
  
2. With reference to the engine log books, explain the reasons for recording EACH of the following:
  - (a) running hours; (2)
  - (b) lubricating oil consumption; (2)
  - (c) fuel consumption; (2)
  - (d) salinity or chloride content of the engine jacket cooling water; (2)
  - (e) water content of lubricating oil. (2)
  
3.
  - (a) State the SIX MARPOL annexes which are currently in force. (6)
  - (b) With reference to MARPOL Annex VI and Oxides of Nitrogen (NO<sub>x</sub>), state which engines have to comply with the legislation. (2)
  - (c) State TWO other pollutants that Annex VI is designed to limit. (2)
  
4.
  - (a) With reference to MARPOL 73/78 Annex IV, explain what is meant by the term *sewage*. (4)
  - (b) State the current regulations for the discharge of *sewage*. (6)
  
5. With reference to safe storage and handling of refrigerant:
  - (a) state where the refrigerant gas bottles should be stored; (2)
  - (b) state the weakest part of the storage bottle; (1)
  - (c) explain how it can be determined if refrigerant has been leaking from gas bottles; (1)
  - (d) state the TWO methods of recharging a refrigeration system, stating where the connection to the system should be made for EACH method; (4)
  - (e) state how excessive refrigerant should be removed from the system without infringing MARPOL regulations. (2)

6. (a) State THREE types of micro-organisms that may exist in water. (3)
- (b) Describe, with the aid of a sketch, the operation of a *Silver Ion Sterilizer*. (7)
7. Describe, with the aid of a sketch, the construction and operation of an *Active Controlled Tank* roll damping system. (10)
8. With reference to portable fire extinguishers:
- (a) describe the examination and testing of portable fire extinguishers as specified in the UK and International legislation. (6)
- (b) state the classes of fire that Dry powder extinguishers may be safely used; (2)
- (c) describe the operation of a portable CO<sub>2</sub> fire extinguisher. (2)
9. (a) State FIVE monthly checks which should be carried out on fire fighting equipment. (5)
- (b) State FIVE yearly checks which should be carried out on fire fighting equipment. (5)
10. Explain the meaning and purpose of EACH of the following terms:
- (a) flare; (2)
- (b) bulwark; (2)
- (c) coaming; (2)
- (d) freeing port; (2)
- (e) scupper. (2)