

MCA Yacht 3/2 - Chief Engineer Statutory and Operational Requirements - Examination October 2006.

1. With reference to the Code of Safe Working Practices for Merchant Seamen guidance on the use of lifting plant:-
 - a) state FOUR safety requirements that need to be complied with before an item of lifting plant can be safely used; (4)
 - b) state the periodic inspection and testing requirements for an item of lifting plant; (4)
 - c) state where the results of inspections and testing are recorded. (2)

2.
 - a) Define the term **flag state control**. (4)
 - b) Define the term **port state control**. (4)
 - c) State TWO examples of areas of the world that are covered by port state **memoranda of understanding (MOU)**. (2)

3. With reference to machinery planned maintenance:-
 - a) define the term **condition monitoring**; (4)
 - b) state THREE ways in which condition monitoring may be applied to a main propulsion diesel engine. (6)

4. With reference to machinery watch-keeping procedures:-
 - a) state the off-duty time to which a watch-keeper is legally entitled for EACH of the following:-
 - i) in any twenty four hour period; (3)
 - ii) accumulatively over the period of one week; (1)
 - b) state the safety procedures that should be undertaken in EACH of the following circumstances:-
 - i) before entering an unattended machinery space; (2)
 - ii) whilst working within an unattended machinery space; (2)
 - iii) after leaving an unattended machinery space. (2)

5.
 - a) A vessel has no record of past fuel consumptions. Calculate the bunker requirements for a forthcoming voyage, given the following data:- (6)

Displacement	1500 tonnes
Range	2000 nautical miles
Speed	15 knots
Fuel coefficient	52,000

Note:- An appropriate fuel reserve allowance should be made.

- b) State TWO actions that could be taken if it is found that, during the subsequent voyage, there is insufficient fuel remaining. (4)
6. With reference to the classification of vessels:-
- a) list FOUR classification societies that are members of the International Association of Classification Societies; (4)
- b) state what is meant by the term **condition of class**; (4)
- c) state a typical time period over which a condition of class may be imposed. (2)
7. With reference to the International MARPOL Convention 73/78 Annex IV - Sewage Pollution (as amended August 2005):-
- a) define the term **sewage**; (2)
- b) state the limitations that are imposed on the discharge of sewage within 3 miles from land; (2)
- c) state the THREE sewage handling options that will allow compliance with the convention. (6)
8. a) Using Worksheet Q8, sketch the changes in oxygen and hydrocarbon content of a flammable mixture, indicating EACH of the following:-
- i) the point at which the mixture becomes inert; (2)
- ii) the variation in the upper explosive limit of the mixture; (2)
- iii) the variation in the lower explosive limit of the mixture. (2)
- b) State FOUR examples of the use of **flame arrestors** on a vessel. (4)
9. With reference to the watertight integrity of a vessel's hull:-
- a) state FOUR reasons for fitting watertight bulkheads; (4)
- b) state what is meant by EACH of the following terms:-

- i) weather deck; (2)
- ii) margin line; (2)
- iii) permeability. (2)

10. With reference to the dry-docking of a large motor yacht:-
- a) state FIVE services that must be made available in order to maintain the safety of the vessel; (5)
 - b) state FIVE essential checks that must be carried out prior to the flooding of the dock on completion of repairs. (5)

WORKSHEET Q8

