

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

1. With reference to the International MARPOL Convention 73/78 Annex V pollution of the sea by garbage:-
 - a) list EIGHT **special areas** that apply to the disposal of garbage; (8)
 - b) state the disposal restriction that is placed on EACH of the following categories of garbage outside of a **special area**:-
 - i) timber and packaging materials; (2)
 - ii) plastics; (2)
 - iii) ground up food waste; (2)
 - c) outline the additional restrictions placed on the disposal of garbage within the **special areas**. (6)

2. a) With reference to safe working practices within machinery spaces:-
 - i) state the maximum noise level in decibels (dB) that can be tolerated safely for an unlimited period of time without ear protection; (2)
 - ii) state THREE possible effects of high noise levels; (6)
 - iii) describe FOUR ways in which the harmful effects of high noise levels can be reduced; (8)
- b) list FOUR items of **personal protective equipment** that should be made available to personnel working within machinery spaces. (4)

3. With reference to fires:-
 - a)
 - i) state the THREE elements necessary for combustion to occur; (3)
 - ii) state the fourth component necessary for sustained combustion; (2)
 - b) describe how a high pressure jet of lubricating oil escaping from a leaking pipe flange could self-ignite and cause a sustainable fire; (7)
 - c) state EIGHT possible sources of ignitable material that could be found within the machinery spaces of a large motor yacht. (8)

4. With reference to a classification society's periodical underwater hull inspection of a large motor yacht:-
- a) state the maximum period that may elapse between inspections;(2)
 - b) list the requirements that must be fulfilled for this inspection to take place with the vessel still afloat; (8)
 - c) describe a hull inspection with the vessel in dry-dock, listing the external equipment that would require special attention. (10)
5. With reference to the ongoing machinery maintenance of a large motor yacht:-
- a) state why reliance on breakdown maintenance is generally unacceptable; (4)
 - b) describe the operation of a typical planned maintenance system; (6)
 - c)
 - i) state the advantages of using condition monitoring as part of a planned maintenance system; (4)
 - ii) describe THREE examples of condition monitoring. (6)