

# EXAMINATION OF MARINE ENGINEER OFFICER

*Function: Marine Engineering at Management Level*

## ENGINEERING MANAGEMENT

India	M.E.O. Class I (June 2023)	(Time allowed - 3hours) Total Marks 100
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**NB: (1) Answer any SIX Questions**

**(2) All questions carry equal marks**

**(3) Neatness in handwriting and clarity in expression carries weightage**

**(4) Illustration of an Answer with clear sketches / diagrams carries weightage.**

**(5) Start answering from the backside of the front cover page**

**(6) Blank pages if any, to be struck off by (X) at the end of each question.**

**Q1. A. One of the objectives of UNCLOS is protection of marine environment and prevention of pollution. Define pollution as per UNCLOS and discuss the key features of obligations of coastal states in this regard.**

**B. State the 3 main tiers of the oil pollution damage compensation conventions of the IMO. In each case elaborate one who is responsible for payment of compensation. Also, state the source of funds as well as certification required by ship under each tier.**

**2015/AUG 2015/NOV 2017/OCT 2021/APR/Q2 2022/OCT 2023/MAR 2023/JUNE**

**Q2. a) Trace in brief the origin of IMO and elaborate on authority vested in IMO. Explain briefly the ratification process.**

**B. Write short notes on Casualty Investigation Code and IMO Member state audit scheme.**

**2023/JUNE**

**Q3. a) What is "Running Down Clause" and "General Average Expenses"? How are the claims under these clauses treated by H&M as well as P&I Insurers? (8)**

**b) A vessel in your fleet has sustained damage due to an insured peril. The damage was identified only during drydocking one year after the incident. Will it be admissible under a hull policy? However, as the damage has not affected the Class status of the vessel, you decide not to carry out the repair. Can you file a claim against your policy? If yes, how can the value of such claim be ascertained? (8)**

**2023/JUNE**

**Q4. The safety management system requires that the Company should provide for measures ensuring that the Company's organization can respond at any time to hazards, accidents and emergency situations involving ships. Underline the Importance of "communication" in "emergency preparedness" and what measures are required for the following (i) contact between ship and the office (ii) communication equipment (iii) dealing with the media (iv) dealing with the next of kin. (16)**

**2023/JUNE**

**Q5. Discuss various alternatives to tin-based antifouling paints, with specific reference to the following types: - (i) Controlled Depletion Polymer (CDP) paint; (ii) Self-Polishing Copolymer (SPC) paint; (III) Hybrid TBT free paint; (iv) Fouling Release paint.**  
**2023/JAN/Q2 2023/JUNE**

**Q6. With respect to key issue in ship repair contracts, illustrate: A. payment terms; B. ambit of the specification and additional work; C. contract period, liquidated damages and force majeure; D. guarantees and insurance; E. Termination events**

**Q7. The Ship Energy Efficiency Management Plan (SEEMP) seeks to improve a ship's energy efficiency through four steps: planning, implementation, monitoring, and self-evaluation and improvement. Describe with suitable examples, the critical role of each of these components in improving energy efficiency of ships. (16)**

**Q8. a) The duration of responsibilities of the maritime carrier are different under different conventions regarding carriage of goods by sea. Explain this statement with examples. (8)**

**b) A bulk carrier discharged the cargo of grain in a port. The consignee received some cargo in damaged condition. He claimed from the ship owner for the damage to the cargo. What defense is available to the ship owner? (8)**

**Q9. Viscous (frictional) resistance is a major component of overall resistance and hence an important area of attention for energy efficiency improvement of ships. Explain various skin friction reduction methods currently under consideration, with special mention on the following:**

**a) Hull Air Cavity Systems**

**b) Hull Surface Texturing**

**c) Micro bubbles**