

# EXAMINATION OF MARINE ENGINEER OFFICER

*Function: Marine Engineering at Management Level*

## ENGINEERING MANAGEMENT

India	M.E.O. Class I (MAR 2024)	(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.** Improvements in Rudder efficiency can considerably contribute to improving propulsion effectiveness. Discuss common rudder-efficiency improvements devices/ techniques currently in use, referring to the following:

- (a) Rudder Thrust Fins
- (b) Asymmetric Rudders
- (c) Rudder Bulbs
- (d) Grim Vane Wheels

2022/JAN, 2022/SEP, 2023/JAN.

**Q2.** a) Briefly discuss Anti fouling convention and state all Documents and records to be maintained on a ship to demonstrate Anti fouling convention compliance.  
c) 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

**Q3.** State the different types of marine insurance policies that could be taken by owners, shippers or other related parties. Explain the salient liabilities and exclusions related with each case for an insurer.

Name the various agencies in India which deal with marine insurance policies.

2017/AUG 2017/SEP 2023/JAN

**Q4.** a) What is SCOPIC? How does It solve the difficulties of salvors?  
b) In case of a collision between two ships on high seas, which state has the right & responsibility for following with justification and briefly describe the salient points of the applicable convention.  
i) To take disciplinary action against the crew member or master?  
ii) To cancel COC of crew members.  
iii) for payment of compensation.

2023/JAN

**Q5.** a) What is LLMC and what is its purpose? Which are the two heads of claims for which limitation is stated in this Convention? Who can limit liability under this convention?

b) Explain the terms: Plaintiff, Defendant, Privity and Unlimited liability.

**Q6.** a) "General average is based on certain essential features" -Discuss the statement.

b) A large vessel ran aground. Main engine was used in ahead and astern directions to shake the vessel loose from the ground. Due to excessive load some bearings of the main engine got burnt. Can this damage be Included in the general average? Give justification to your answer.

**Q7.** A. State the applicable regulation of SOLAS and MARPOL under which it is mandatory for a flag state to conduct an investigation into any casualty;

B. Write briefly the salient points of casualty investigation code and the recommended practices for a safety investigation into a marine casualty or marine incident;

C. What do you understand by the term very serious marine casualty?

2013/FEB 2014/SEP 2014/DEC 2015/JUN 2016/JUL 2016/DEC 2017/JAN  
2017/MAR 2018/DEC 2023/JAN

**Q8).** A). How is Human Element issue addressed in STCW code.

B). Discuss the IMO guidance on fatigue mitigation and management on board ships

2016/JUL 2020/DEC 2023/JAN

**Q9.** What is the aim and function of GISIS? (Global Integrated Shipping Information System of the IMO). Recently GISIS updated its module on fuel oil to help compliance with Annex VI.

Discuss the usefulness of this module for reporting and analysing information on compliant fuel oil