Sr. No. EM-21X26-1

India (2026)

EXAMINATION OF MARINE ENGINEER OFFICER

Grade: MEO – Class-I

Function: Marine Engineering at Management Level

Subject: ENGINEERING MANAGEMENT

(Time allowed – 3Hours) Total Marks: 100

Note:

1) Answer **SIX** Questions only.
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 strike off by (**X**) at the end of each question.

1	(a)	What is the primary difference in how the EU ETS (Emissions Trading System) and the FuelEU Maritime regulation approach decarbonization?	[6]
	(b)	Define "Green Shipping Corridors" and explain their primary function in maritime decarbonization.	[4]
	(c)	Analyze why shipping lines face a severe "high cost of transition" when trying to comply with EEXI (Existing Vessel Energy Efficiency Index), CII (Carbon Intensity Indicator), and regional laws like the EU ETS.	[6]
2		Describe the general structure of a Ballast Water Treatment (BWT) System, highlighting the following methods of treatment: - a) UV Treatment method b) Gas Treatment method c) Electrolysis method d) Magnetic Separation method.	[4x4]
3		A grounded ship has been refloated and towed by a professional salvor to a place of safety. As per the Salvage Convention the salvor has a right to award.	
	(a)	List the various criteria which are considered under Article 13 of the Convention for determining the amount of award.	[6]
	(b)	State the duties of the salvor and the shipowner/master as per this Convention.	[4]
	(c)	Assuming LOF-2000 was agreed between the parties, discuss when is the Convention applicable and when the LOF if any dispute arises	[6]
4	(a)	What are the key functions and component of GISIS? (Global Integrated Shipping Information System of the IMO) and how does it facilitate data sharing among member states.	[8]
	(b)	Briefly discuss the usefulness of this module for reporting and analysing information on compliant fuel oil and reporting of inadequacy of port reception facilities in port.	[8]

5 While the vessel is which you are the Chief Engineer, is on full-ahead, there is a sudden blackout. Explain in detail the following:-

(a) Immediate actions you must take subsequent to the blackout for restoring power, keeping safety issues as of prime importance; [6]

(b) Shipboard systemic actions that you would like to take such that: [2x5]
(i) the possibility of sudden blackouts reduce;
(ii) such eventualities can be swiftly and effectively addressed as a well-trained team.

6 (a) General average is based on certain essential features.Discuss the statement. [8]

(b) A large vessel ran aground. Main engine was used in ahead and astern directions to move the vessel 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. [8]

7 Referring to the Maritime Labour Convention (MLC) 2006, discuss: -

(a) Flag State & Port State responsibilities.
(b) On-board & On-shore Complaint Procedures.
(c) Detainable deficiencies under Flag State and Port State intervention.
(d) Grievance Redressal Mechanisms for Indian seafarers. [4x4]

8 (a) Define a Bill of Lading and explain its three primary legal functions in maritime commerce. [7]

(b) Distinguish clearly between a 'Straight Bill of Lading', an 'Order Bill of Lading', and a 'Bearer Bill of Lading', highlighting how delivery is effected under each. [9]

9 (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 under the convention. [8]

(b) State the 3 main tiers of the oil pollution damage compensation conventions of the IMO. In each case elaborate on who is responsible for payment of compensation. Also state the source of funds as well as certification required by ship under each tier. [8]