



# **MEO CLASS 2**

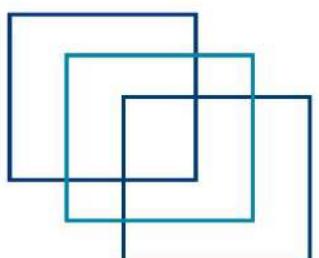
# **WRITTEN: SSEP**

**(SHIP SAFETY & ENVIRONMENTAL PROTECTION)**

## **FOR INDIAN COMPETENCY EXAM**



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## JAN-2024

Q1. A) How is Human Element issue addressed in STCW code. (10)  
Discuss the IMO guidance on fatigue mitigation and management on board ships. (10)

**2024/JAN/Q1**

[Click Here to See the Answer](#)

Q2. A) With reference to SOLAS 74 amendments 2000, maintenance plan is to be kept on-board ship for firefighting system, Enumerate the list of fire protection system and fire-fighting systems and appliances, which will be required to be included in the maintenance plan. (10)  
B) Training manual as required by SOLAS 74 amendments 2000, Chapter II-2 contains instructions and information with respect to firefighting. List the same and their significance. (10)

**2015/SR7**

**2015/SR11**

**2024/JAN/Q2**

[Click Here to See the Answer](#)

Q3.A) With reference to Maritime Labor Convention (MLC) answer the following:

B) Explain the structure of the convention with titles. (10)  
Briefly, discuss DMLC Part I and II covering welfare measures for seafarers. (10)

**2024/JAN/03 – 2024/OCT/05**

[Click Here to See the Answer](#)

Q4. a) Briefly discuss the cybersecurity threats and vulnerabilities present in ship systems that could be exploited. Discuss the protective measures and best practices employed to secure ships against cyber threats. (10)



b) Discuss international regulations or guidelines that mandate cybersecurity practices for ships and evaluate their effectiveness in ensuring maritime cybersecurity. (10)

**2024/JAN/Q4**

[Click Here to See the Answer](#)

Q5. a) What is NOx & SOx limitations as per Annex VI of MARPOL. (10)  
b) Briefly discuss the technical and operational measures taken by ships to reduce NOx & SOx emission. (10)

**2024/JAN/Q5**

[Click Here to See the Answer](#)

Q6. With reference to “ISM Code” discuss the following

- A) Responsibility of “Company” (5)
- B) Impact of ISM code on Maritime Safety and Environment protection (5)
- C) Requirement of Internal audit and Management Review (5)
- D) Functional requirements and objective of a Safety Management System (5)

**2024/JAN/Q6**

[Click Here to See the Answer](#)

Q7. a) Sketch and describe a total flooding CO<sub>2</sub> gas system suitable for the protection of machinery spaces. (10)  
b) State, with reasons, which valve should be operated first in the system shown in (a). (5)  
c) Explain the procedure of entry into the compartment after discharge of CO<sub>2</sub>. (5)

**2024/JAN/Q7**

[Click Here to See the Answer](#)

Q8. If a small amount of oil is spilled during bunkering and causes a sheen upon the water, state what should be the procedure adopted for



pollution control, information to authorities and subsequent bunkering procedures. (20)

**2024/JAN/Q8**

[Click Here to See the Answer](#)

Q9. With respect to MARPOL 73/78, Annex - II, Noxious liquid chemicals are divided into categories.

a) State the number of categories, and what does each category signify.

(10)

b) Discuss, the requirement of Procedures and Arrangements Manual, and what information is available. (10)

**2022/SEP/Q4 2024/JAN/Q9**

[Click Here to See the Answer](#)

## FEB-2024

Q1. With reference to fire smothering agents explain as to why:

Effectiveness of foam is directly related to its degree of effervescence and surface tension? (7)

Low expansion foam is best suited for use against localized fire, whilst high expansion foam is most effective in major conflagrations? (7)

In the absence of foam appliances, water jets can be effectively used against oil fires? (6)

**2022/SEP/Q7 2024/FEB/Q1**

[Click Here to See the Answer](#)

Q2. With reference to the 1974/1978 SOLAS protocol, which outlines mandatory requirements for steering gear tests and drills?

A.) Describe the test procedure to be carried out within the, 12 hours before departure on a sea-voyage; (7)

B.) Describe the emergency steering drills that must take place at least once every, 3 months; (7)



C.) State how often the test in (A) and the drill in (B) should be carried out for ships which regularly engage on voyages of short duration. (6)

**2021/JUL/Q8 | 2021/OCT/Q5 | 2022/JAN/Q7 | 2023/JUL/Q1 | 2024/FEB/Q2**

[Click Here to See the Answer](#)

Q3. State the regular routines carried out on the following system:

- a) Self-contained Breathing apparatus (SCBA). (5)
- b) Accommodation Fixed Fire detection system. (5)
- c) Emergency Escape Breathing Device (5)
- d) immersion Suits (5)

**2024/FEB/03**

[Click Here to See the Answer](#)

Q4. Prepare a proposal for safe manning requirements for a ship of your choice taking into account the IMO guidelines on the issue, also considering frequent port calls, rest hour management and high-risk areas. (20)

**22/FEB/Q4 | 22/APR/Q4 | 23/JUNE/Q5 | 23/AUG/Q2 | 23/DEC/Q8 | 24/FEB/Q4**

[Click Here to See the Answer](#)

Q5. a) Briefly discuss crude oil washing (COW) and its environmental benefits compared to traditional tank cleaning methods, highlighting its role in reducing the discharge of oily residues into the marine environment. (10)

b) Explain the safety considerations associated with crude oil washing procedures, including potential risks to personnel, equipment, and the vessel's structural integrity. (10)

**2024/FEB/Q5**

[Click Here to See the Answer](#)

Q6. During unit overhauling of Main engine, sudden rough weather caused accident in engine room. State what all checks and precaution taken up prior to carry out such operation. (20)

**2019/FEB/Q6 | 2024/FEB/Q6**



[Click Here to See the Answer](#)

Q7. With reference to MARPOL Annex IV

- a) Draw a biological sewage treatment plant and explain the principal of operation. (10)
- b) Periodical maintenance and checks and tests required to be done to verify the effectiveness of the above system. (10)

**2023/SEP/Q7 2024/FEB/ 2021/JUL/Q8(M)**

[Click Here to See the Answer](#)

Q8. a) Discuss the key provisions of the Hazardous and Noxious Substances (HNS) Convention, including, its objectives and scope. (10)

b) Discuss the types of hazardous and noxious substances covered by the convention and their potential impact on marine ecosystems and compensation mechanisms established by the HNS Convention for incidents involving the transportation of hazardous and noxious substances by sea. (10)

**2024/FEB/Q8**

[Click Here to See the Answer](#)

Q9. Explain the following terms/statements: -

- a) Categories of Noxious liquid substance (5)
- b) Special Areas as defined in MARPOL 73/78 (5)
- c) Particularly Sensitive Sea Areas (5)
- d) Designated fuel oil sampling points (5)

**2024/FEB/Q9**

[Click Here to See the Answer](#)



## MAR-2024

Q1. With reference to MLC answer the following,

- a) Briefly discuss DMLC Part I and Part II covering the welfare points for seafarers. (10)
- b) Briefly discuss the grievance redressal mechanism for seafarers of Indian flagged vessel. (10)

**2022/SEP/Q2**

**2023/NOV/Q8**

**2024/MAR/Q1**

[Click Here to See the Answer](#)

Q2) Illustrating differences between major nonconformity, nonconformity, hazardous occurrence and near miss situations, show with examples steps taken by you as Second Engineer in each case for successful handling of the situations. (20)

**2023/FEB/Q7** **2024/MAR/Q2**

[Click Here to See the Answer](#)

Q3. Explain the following terms used by the classification societies. (20)

- a) Anniversary date
- b) Condition of class
- c) Window period for survey
- d) Memoranda
- e) Addition note
- f) Statutory recommendation.

**2023/FEB/Q1** **2024/MAR/Q3**

[Click Here to See the Answer](#)

Q4. With reference to the pumping of cargo tanks of chemical tankers-

- a) Sketch and describe an arrangement used with the cargo pump or independently of the pump, to facilitate tank drainage; (10)



b) State significant regulation which will assist in reducing pollution of sea by chemical cargoes. (10)

<b>2023/MAR/Q3</b>	<b>2024/MAR/Q4</b>
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[Click Here to See the Answer](#)

Q5. Name various statutory Certificates and Documents to be carried on board Chemical Tankers giving reference to the conventions and justify for their requirement. (20)

<b>2023/APR</b>	<b>2024/MAR/Q</b>
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[Click Here to See the Answer](#)

Q6. Briefly describe the following with reference to additional safety measures for bulk carriers, discuss the following with reference to structure of ships.

- A. Damage stability requirements for bulk carriers (7)
- B. Structural requirements for bulk carriers; (7)
- C. Water ingress alarms. (6)

<b>2020/NOV/Q8</b>	<b>2021/FEB/Q9</b>	<b>2021/JUL/Q9</b>	<b>2021/JUL/Q5</b>
<b>2022/JAN/Q6</b>	<b>2022/JUL/Q3</b>	<b>2022/SEP/Q5</b>	<b>2024/MAR/Q6</b>

[Click Here to See the Answer](#)

Q7. a) C0<sub>2</sub> is to be released in engine room in case of fire. Briefly describe steps taken before it can be released. What means are provided to prevent inadvertent release of C0<sub>2</sub> in engine room? (12)

Briefly discuss the procedure for re-entering the engine room after the release of CO<sub>2</sub>. (8)

<b>2024/MAR/07</b>
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[Click Here to See the Answer](#)

Q8. What preparations will you carry out for the following surveys? (20)

- A. IOPP survey.
- B. SEQ survey.

Restrict your answer to engine room only.



**2024/MAR/Q8**

[Click Here to See the Answer](#)

Q9. a) Identify and explain the primary causes of VOC emissions in oil tankers. Discuss how these emissions occur during various stages of the shipping process, including loading, transportation, and unloading. (7)  
b) Discuss the health risks associated with VOC emissions for both humans and marine life and its impact on air quality, climate change, and marine ecosystems. (6)

Describe various methods and technologies used to prevent VOC emissions in oil tankers and discuss the effectiveness of these prevention measures. (7)

**2024/MAR/Q8**

[Click Here to See the Answer](#)

## APR-2024

Q1. A. Draw a plan to deal with fire in accommodation:  
Including co-ordination with shore facilities in port, taking account of the ship's fire control plan; (10)  
B. Explain how drills and practices should be-organized with reference to the above. (10)

**2023/APR/Q3 2023/NOV/Q9 2024/APR/Q1**

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Q2. With respect to the hazardous areas of tankers,  
A. Explain the term *flameproof* (Ex d) for electrical equipment (7)  
B. State the type of electrical equipment that would be protected in this way. (7)  
C. List likely defects of flameproof equipment. (6)

**21/APR/Q6 21/JUL/Q9 22/APR/Q6 23/APR/Q4 24/APR/2**

[Click Here to See the Answer](#)



3.(a)With reference to “ISM Code” write short notes on;  
(b)Management Review (5)  
(c)Designated Person Ashore (DPA) (5)  
(d)Functional requirements for a Safety Management System. (5)

**2020/DEC/Q7 2024/APR/Q3**

[Click Here to See the Answer](#)

Q4. With reference to entry into enclosed spaces onboard:

A. Define “Enclosed space” and give example of enclosed spaces onboard. (7)  
B. Describe the procedure for testing the atmosphere inside such enclosed spaces. (7)  
C. Explain safety precautions taken prior to entry into enclosed spaces onboard vessel. (6)

**2019/DEC 2021/JUL/Q7 2024/APR/Q4**

[Click Here to See the Answer](#)

Q5. With reference to the Maritime Labour Convention (MLC) 2006, discuss the requirements for seafarers regarding: -

A. Minimum age to work onboard vessels, (7)  
B. Seafarer's Employment agreements (7)  
C. Hours of work and hours of rest. (6)

**2020/MAR/Q5 2020/DEC/Q5 2021/APR/Q5 2023/APR/Q9 2024/APR/Q5**

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Q6. a) State the various documents pertaining to a ship that a port state control inspector would ask for during port state control inspection.  
b. If your vessel-gets detained by the PSC owing to a deficiency, what would be your action for redressal. (20)

**2020/MAR/Q6 2023/AUG/Q1 2024/APR/Q6**

[Click Here to See the Answer](#)

Q7. With reference to free fall lifeboat of an ocean-going ship:



A. Periodical maintenance, tests and checks on lifeboat and releasing gear.  
(7)

B. Secondary means of lowering. (6)

C. Lifeboat Drills. (7)

**21/OCT/Q4 21/DEC/Q3 22/FEB/Q2 22/APR/Q2 23/AUG/Q6 24/APR/Q7**

[Click Here to See the Answer](#)

Q8. As a second engineer how will you plan to reduce the Energy Efficiency Operating Index of your ship? (20)

**2020/MAR/Q2 2021/FEB/Q7 2021/MAR/Q7 2024/APR/Q8**

[Click Here to See the Answer](#)

Q9. Briefly discuss the following with respect to safety of navigation:

- Bridge Navigation Watchkeeping Alarm System (BNWAS) (5)
- Long Range Identification and Tracking of ships (LRIT) (5)
- Voyage Simplified Voyage Recorder (VDR/S-VDR) (5)
- NAVTEX (5)

**2024/APR/Q9**

[Click Here to See the Answer](#)

## JUNE-2024

Q1. Name various Statutory Certificates and Documents to be carried on board **container ships** giving reference to the conventions and justify for their requirement. (20)

**2024/JUN/Q1**

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Q2. India, one of the world's five major ship recycling countries, has acceded to the **IMO Hong Kong Convention**, the treaty that will set global standards for safe and environmentally sound



hip recycling. Discuss the key features of "The Hong Kong International convention for the safe and environmentally sound Recycling of Ships". (20)

**2021/FEB/Q2 2021/NOV/Q8 2022/JAN/Q5 2023/JUNE/Q3 2024/JUN/Q2**

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Q3. Explain the following with reference to **MARPOL Annex-VI**

- a. Ozone depleting substances and its emissions control. (5)
- b. Volatile Organic and its emissions control. (5)
- c. NOx emissions and its control from ships. (5)
- d. NOx technical file. (5)

**2024/JUN/Q3**

[Click Here to See the Answer](#)

Q4. Explain the following

- a. SEEMP I, II, III (5)
- b. PSSA (5)
- c. EEXI & CII (5)
- d. SOPEP (5)

**2024/JUN/Q4**

[Click Here to See the Answer](#)

Q5. With Reference to the **Maritime Labour Convention (MLC) 2006**, discuss the requirements for seafarers regarding:

- A. Entitlement to leave (7)
- B. On-board and on-shore complaint procedures (7)
- C. Safety and health education of young seafarers (6)

**2024/JUN/Q5**

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Q6. As **Second Engineer** of a new ship,

- A. Prepare standing orders for all future bunkering operations onboard. (7)



B. State why it is very important to obtain a representative sample of heavy fuel bunkers taken. (7)

C. Briefly discuss Marpol sample, In-use sample and on-board Sample. (6)

**2024/JUN/Q6**

[Click Here to See the Answer](#)

Q7. With reference to Regulation 12 of **SOLAS Chapter XII**, dealing with Water Level Detection and Alarm System to spaces.

A. Type of ships water level detection and alarm system is required to be installed. (7)

B. Brief description of such installation. (6)

C. Requirements with respect to detection system. (4)

D. Requirements with respect to an alarm system. (3)

**2022/OCT/Q7 | 2023/MAR/Q4 | 2023/JUNE/Q8 | 2024/JUN/Q7**

[Click Here to See the Answer](#)

Q8. A. **Steering system failure** has caused shipping casualties and oil pollution. Discuss

a) The causes of such failure (8)

b) The precaution necessary in design, operation, and maintenance of these systems. (6)

c) Requirements on tankers, which was made mandatory after the shipping casualty. (6)

**2023/JUN/Q6 | 2023/SEP/Q3**

[Click Here to See the Answer](#)

Q9. (a) Discuss International Maritime Organization (IMO) Data Collection System (DCS) for fuel oil consumption of ships covering following: (10)

i) Applicability of ship size (GT)

ii) When the requirement of Data Collection System (DCS) entered into force

iii) What data required to collect ship



iv) The aggregated data is submitted to who and when (frequency) to submit  
v) Relevance of SEEMP pertaining to Data Collection System (DCS)  
(b) List out the main differences between the EU Monitoring, Reporting and Verification (MRV) regulation and International Maritime Organization (IMO) Data Collection System (DCS). (10)

2021/JAN/Q5	2021/MAR/Q8	2022/FEB/Q9	2024/JUN/Q9
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[Click Here to See the Answer](#)

## JULY-2024

Q1. Name various **statutory Certificates and Documents** to be carried on board Gas Tanker giving reference to the conventions and justify for their requirement. (20)

2020/JAN	2021/JAN/Q3	2021/MAR/Q3	2024/JUL/Q1
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[Click Here to See the Answer](#)

Q2. a) **C0<sub>2</sub>** is to be released in engine room in case of fire. Briefly describe steps taken before it can be released. (7)  
b) What means are provided to prevent inadvertent release of C0<sub>2</sub> in engine room? (7)  
c) How the number of CO<sub>2</sub> bottles required for a ship is calculated? (6)

2024/JUL/Q2
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[Click Here to See the Answer](#)

Q3.a) Discuss the purpose and key provisions of **SOLAS Chapter XI-1** and the special measures established to enhance maritime safety. (10)  
b) Discuss the requirements for ship identification numbers, continuous synopsis records, and port state control. How do these measures contribute to the overall safety and security of maritime operations. (10)

2024/JUL/03
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**Q4.** A vessel is due for **International Oil Pollution Prevention Certificate** renewal survey and company instructed to offer this vessel for survey at next port of call.

a.) As a 2<sup>nd</sup> Engineer officer of above-mentioned vessel, what all checks you carry out and how you prepare for the IOPP renewal survey. (10)  
b.) What records, procedures, certificates etc., you will keep ready for attending surveyor verification. (10)

2021/JUL(M)/Q1	2021/AUG/Q2	2021/SEP/Q2	2022/JUN/Q3	2024/JUL/Q4
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[Click Here to See the Answer](#)

**Q5.** Briefly discuss the following with respect to **safety of navigation**:

A. Bridge Navigation Watchkeeping Alarm System (BNWAS) (5)  
B. Long Range Identification and Tracking of ships (LRIT) (5)  
C. Voyage Simplified Voyage Recorder (VDR/S-VDR) (5)  
D. AIS-SART (5)

2024/JUL/Q5
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**Q6.** What are the core features of the FSS Code? (International fire safety systems code). Elaborate on any one test prescribed by the Code. (20)

2022/DEC/Q8	2023/OCT/Q8	2024/JUL/Q6
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[Click Here to See the Answer](#)

**Q7. a)** What is the **NOx Technical File** on board ships, and why it is important? Describe the information contained within this file and its role in ensuring compliance with MARPOL Annex VI regulations regarding nitrogen oxide (NOx) emissions. (12)

**b)** Discuss the procedures for maintaining and updating the NOx Technical File and the potential consequences of non-compliance. (8)

2024/JUL/Q7
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[Click Here to See the Answer](#)



**Q8. Petroleum vapours** are dangerous substances and when mixed with air can be ignited.

A i) Sketch an explosimeter or combustion gas indicator which can be used to check the atmosphere of a tank or pumproom. (5)  
ii) Describe the explosimeter and its operation (5)  
iii) State one reason that may cause the explosimeter to give a false reading (5)

B) For flammable mixtures, explain the meaning of the terms lower and upper flammable limits. (5)

**2022/DEC/Q1    2023/OCT/Q1    2024/JUL/Q8**

[Click Here to See the Answer](#)

Q9.a) Briefly discuss the types of records that can be maintained electronically under MARPOL and the approval process for ERBs. (10)  
b) Highlight the advantages of using ERBs compared to traditional paper-based record books and state the measures required to ensure data integrity and security. (10)

**2024/JUL/Q9**

[Click Here to See the Answer](#)

## AUG-2024

Q1. Name various **statutory Certificates and Documents** to be carried on board Special Trade Passenger ship trading in Indian coast giving reference to the conventions and justify for their requirement. (20)

**2024/AUG/Q1**

[Click Here to See the Answer](#)

Q2. a) Briefly Describe The Cargo Hold Fire Detection System on a bulk carrier, and how does the system function to detect and alert the crew to the presence of a fire? (10)



b.) Give reasons why fire detectors in cargo holds differ from those in machinery spaces. (5)

c.) Describe how to verify that each is in working order. (5)

**2024/AUG/Q2**

[Click Here to See the Answer](#)

Q3. a) What is the purpose of the **International Maritime Dangerous Goods (IMDG)** Code, and how does it ensure the safe transportation of dangerous goods by sea? Discuss the structure and classification system used in the IMDG Code. (10)

b) How does the IMDG Code address the packaging, labelling, and documentation requirements for dangerous goods? Explain the responsibilities of ship operators and crew members in complying with the IMDG Code during cargo handling and transport. (10)

**2024/AUG/Q3**

[Click Here to See the Answer](#)

Q4. A vessel is due for **SEQ renewal survey** and company instructed to offer this vessel for survey at next port of call.

a.) As a 2nd Engineer officer of above-mentioned vessel, what all checks you carry out and how you prepare for the renewal survey. (10)

b.) What records, procedures, certificates etc., you will keep ready for attending surveyor verification. (10)

**2024/AUG/Q4**

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Q5. a) According to Article 2 of the **Maritime Labour Convention (MLC) 2006**, what are the essential elements that must be included in a Seafarers' Employment Agreement (SEA)? How does the SEA ensure the protection of seafarers' rights? (10)

b) Explain how CBAs are used to negotiate and establish the terms and conditions of employment for seafarers under the MLC 2006. How do



CBAs contribute to ensuring fair wages, working conditions, and dispute resolution for seafarers? (10)

**2024/AUG/Q5**

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Q6. a) What is a Particularly Sensitive Sea Area (PSSA) as defined by the International Maritime Organization (IMO), and how does it differ from a Special Area under the MARPOL Convention? (7)

b.) What are the six special areas designated by MARPOL, where stricter regulations apply to prevent pollution from ships, and what are the specific requirements for each area. (7)

c.) Discuss the criteria for designating a PSSA and a Special Area. What additional protective measures are typically implemented in these regions to safeguard the marine environment. (6)

**2024/AUG/Q6**

[Click Here to See the Answer](#)

Q7. Discuss on the following with respect to MARPOL Annex-V. (20)

- a. Domestic waste and operational waste.
- b. Garbage Management plan and record keeping.
- c. Discharge of Garbage outside special areas.
- d. Discharge of Garbage within special areas.

**2024/AUG/Q7**

[Click Here to See the Answer](#)

Q8. a) What is the Crude Oil Washing (COW) procedure on oil tankers, and how does it enhance the efficiency of cargo operations? Outline the steps involved in the COW process. (12)

b) Discuss the safety precautions that must be observed during Crude Oil Washing to prevent accidents and environmental hazards. Additionally, explain the regulatory requirements governing COW operations as per MARPOL and other relevant guidelines. (8)



**2024/AUG/Q8**

[Click Here to See the Answer](#)

Q9. a) What is the Carbon Intensity Indicator (CII) and how is it calculated under IMO regulations? Explain its significance in reducing the carbon footprint of ships. (10)

b.) What role does the Second Engineer play in ensuring compliance with CII requirements on a ship? Discuss the operational strategies and maintenance practices that the Second Engineer can implement to improve a ship's CII rating. (10)

**2024/AUG/Q9**

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## SEP-2024

Q1. Name various Statutory Certificates and Documents to be carried on board **container ships** giving reference to the conventions and justify for their requirement. (20)

**2024/JUN/Q1**

**2024/SEP/Q1**

[Click Here to See the Answer](#)

Q2. (A) Explain the purpose of **NOx Technical Code** and its applicability to Marine diesel engines. (7)

(B) Explain certification requirements under NOx Technical Code. (7)

(C) Explain the purpose of NOx technical file and its importance (6)

**2023/FEB/Q3**

**2023/AUG/Q9**

**2024/SEP/Q2**

[Click Here to See the Answer](#)

Q3. a) Explain the key components and objectives of **SEEMP Part 3**. How does it differ from SEEMP Parts 1 and 2? (10)

b) Briefly discuss the specific tasks and procedures that the Second Engineer must follow to ensure



compliance with the energy efficiency measures outlined in SEEMP Part 3. (10)

**2024/SEP/Q3**

[Click Here to See the Answer](#)

Q4. A vessel is due **for SMC renewal audit** and company instructed to offer this vessel for survey at next port of call.

- a.) As a 2<sup>nd</sup> Engineer officer of above-mentioned vessel, what all checks you carry out and how you prepare for the renewal SMC audit. (10)
- b.) What records, procedures, certificates etc., you will keep ready for attending surveyor verification. (10)

**2024/SEP/Q4**

[Click Here to See the Answer](#)

Q5. Referring to the **Maritime labour Convention (MLC) 2006**, discuss:-

- a.) Flag State & Port State responsibilities. (5)
- b.) On-board & On-shore Complaint Procedures. (5)
- c.) Collective Bargaining agreement. (5)
- d.) Grievance Redressal Mechanisms for Indian seafarers. (5)

**2023/JULY/Q5**

**2024/SEP/Q5**

[Click Here to See the Answer](#)

Q6. With reference to **survey and certification of ship**, briefly discuss the following

- a.) Harmonization of survey and certification (5)
- b.) Enhanced survey programme (ESP) surveys for bulk carriers and oil tankers (5)
- c.) Condition monitoring of tail shaft propeller shaft (5)
- d.) CAP and CAS (5)

**2024/SEP/Q6**

[Click Here to See the Answer](#)



Q7. What are the various stages of fire in the **exhaust gas boiler**? Discuss the factors responsible for ignition and development of ignition of soot, small soot fires and high temperature fires. (20)

**2024/SEP/Q7**

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Q8. What do you understand by the terms **Protocol, Amendments and convention**? Describe the procedure for amendments to the regulation? (20)

**2020/OCT/Q7**

**2024/SEP/Q8**

[Click Here to See the Answer](#)

Q9. Regulation 13F Annex I of **MARPOL73/78** deals with prevention of oil pollution in the event of collision or stranding. Describe a double hull type of construction and state if any other type of construction provides equivalent protection (20)

**2023/MAR/Q7**

**2024/SEP/Q9**

[Click Here to See the Answer](#)

**OCT-2024**

Q1. Name various **statutory Certificates and Documents** to be carried on board general cargo ship giving reference to the conventions and justify for their requirement. (20)

**2024/OCT/Q1**

[Click Here to See the Answer](#)

Q2. A. Sketch a line diagram of an **automatic water sprinkler** fire detection/alarm and firefighting system fitted in accommodation and service spaces of passenger vessels. (7)

B. Describe the system sketched above and its mode of operation. (7)

C. State the action that should be taken after the use of sea water in the firefighting system. (6)



**2021/APR/Q3    2024/OCT/Q2**

[Click Here to See the Answer](#)

Q3. A. Describe information which is available in the record which is attached as a supplement to the

**IOPP Certificate**, for a bulk carriers and oil tanker. (7)

B. What are the provisions for engine room under MARPOL 73/78

Annex -1, for large ocean-going vessels? (7)

C. What is IBC Code and what Certificates are issued under the Code and to which ship? (6)

**2023/FEB/Q5    2024/OCT/Q3**

[Click Here to See the Answer](#)

Q4. Define a Non-Conformity (NC) and a Major Non-Conformity (MNC) with examples according to the **International Safety Management (ISM) Code**. Explain the steps that should be taken by a vessel's management when a Major Non-Conformity is identified. (20)

**2024/OCT/Q4**

[Click Here to See the Answer](#)

Q5. With reference to **Maritime Labour Convention (MLC)** answer the following:

(A) Explain the structure of the convention with titles. (10)

(B) Briefly, discuss DMLC Part I and II covering welfare measures for seafarers. (10)

**2024/JAN/Q3    2024/OCT/Q5**

[Click Here to See the Answer](#)

Q6. The HNS Convention is expected shortly to come into force. Explain the following in respect of this convention.

A.) List and give examples of substances covered under this convention  
B.) Types of pollution and subsequent losses or damages which can come under this convention.



C.) Why would an oil products tanker probably require to have certificates under all 3 conventions i.e., CLC, Bunker and HNS. (20)

**2024/OCT/Q6**

[Click Here to See the Answer](#)

Q7. a) Describe the periodic maintenance procedures that must be carried out on a **lifeboat, its equipment and its davit** system to ensure proper operation. (10)

b) Explain the procedure for conducting a dynamic load test on a lifeboat davit and the criteria for evaluating the test results. Why is this test critical for ensuring the safety of the davit system? (10)

**2024/OCT/Q7**

[Click Here to See the Answer](#)

Q8. A) How is **Human Element** issue addressed in STCW code. (10)  
Discuss the IMO guidance on fatigue mitigation and management on board ships. (10)

**2024/JAN/Q1**

**2024/OCT/Q8**

[Click Here to See the Answer](#)

Q9. With reference to port State control

A. List the certificates which a Port State Control Officer (PSCO) may like to see during inspection. (10)

B. List the Life Saving Appliances and Fire Fighting Equipment's which are likely to be inspected by PSCO. (10)

**2024/OCT/Q9**

[Click Here to See the Answer](#)

**NOV-2024**

Q1. a) State the difference between **Flag State control and port State control** (PSC). Under which International Conventions Port State Control be exercised. (10)



b.) What do you understand by Memorandum of Understanding in respect of PSC. (10)

**2024/NOV/Q1**

[Click Here to See the Answer](#)

Q2. Regulation 13F Annex I of **MARPOL73/78** deals with prevention of oil pollution in the event of collision or stranding. Describe a double hull type of construction and state if any other type of construction provides equivalent protection (20)

**2023/MAR/Q7 | 2024/SEP/Q9 | 2024/NOV/Q2**

[Click Here to See the Answer](#)

Q3. India, one of the world's five major ship recycling countries, has acceded to the **IMO Hong Kong Convention**, the treaty that will set global standards for safe and environmentally sound ship recycling.

Discuss the key features of "The Hong Kong International convention for the safe and environmentally sound Recycling of Ships". (20)

**21/FEB/Q2 | 21/NOV/Q8 | 22/JAN/Q5 | 23/JUNE/Q3 | 24/JUN/Q2 | 24/NOV/Q3**

[Click Here to See the Answer](#)

Q4. a) For an ISM certification, explain the key clauses, which are required to be complied with obtaining Interim DOC. (10)

b) Describe the frequency and purpose of management reviews under the ISM code. How often should management reviews be conducted, and what key elements should be addressed during these reviews to maintain and improve the effectiveness of the SMS? (10)

**2024/NOV/Q4**

[Click Here to See the Answer](#)

Q5. a) List the precautions that must be taken before **releasing CO<sub>2</sub>** into the engine room in the event of a fire. Why is it critical to ensure these steps are followed to safeguard crew and equipment? (7)



b.) Describe the actions that should be taken immediately after CO<sub>2</sub> release to manage the fire and prevent re-ignition. (6)

c.) Explain the factors that determine the quality of CO<sub>2</sub> required for effective fire suppression in ship's engine room. Outline the formula and method used to calculate the number of CO<sub>2</sub> bottles needed on board. (7)

**2024/NOV/Q5**

[Click Here to See the Answer](#)

Q6. a) Explain the concept of **survey harmonization** in the context of ship inspections. What is the primary objective of harmonizing surveys under international regulations, and how does it benefit ship operators and regulatory bodies? (10)

b) Describe the types of surveys that can be harmonized and outline the challenges involved in implementing a harmonized survey schedule. How does harmonization impact the scheduling, documentation, and efficiency of inspection processes for ships? (10)

**2024/NOV/Q5**

[Click Here to See the Answer](#)

Q7. a) Describe the purpose of type approval for **oily water separators (OWS)** on ships. What criteria must an OWS meet to receive type approval, and why is this important for marine environmental compliance? (10)

b) Explain the main difference between the MEPC 60(33) and MEPC 107(49) standards for oily water separators. How did the updates in MEPC 107(49) enhance the performance requirements and monitoring capabilities for oily water separation, and what additional compliance measures were introduced? (10)

**2024/NOV/Q5**

[Click Here to See the Answer](#)



Q8. a) Explain the purpose of the **IMO Noise Code** and its significance in protecting crew members' health and safety on board ships. What are the primary noise level limits established by the Noise Code? (10)  
b.) Explain the purpose and contents of the Noise Survey Report and the Noise Attenuation Plan, Where applicable. How do these documents support safe noise levels on board, and what role do they play during inspections and audits? (10)

**2024/NOV/Q5**

[Click Here to See the Answer](#)

Q9. a) List the documents that must be prepared and kept ready for a **SEQ renewal survey**. (6)  
b.) Briefly discuss the equipment that should be checked and made ready for inspection during a SEQ renewal survey? (7)  
c.) Explain the purpose and contents of the SEQ Certificate Form E and the Approved Record of Safety Equipment. How does each document contribute to verifying compliance with safety equipment regulations on board? (7)

**2024/NOV/09**

[Click Here to See the Answer](#)

**DEC-2024**

Q1. **Petroleum vapours** are dangerous substances and when mixed with air can be ignited.

a. i) Sketch an explosimeter or combustion gas indicator which can be used to check the atmosphere of a tank or pumproom. (8)  
ii) Describe the explosimeter and its operation (3)  
iii) State one reason that may cause the explosimeter to give a false reading (3)

b.) For flammable mixtures, explain the meaning of the terms lower and upper flammable limits.

**2022/DEC/Q1**

**2023/OCT/Q1**

**2024/JUL/Q8**

**2024/DEC/Q1**



[Click Here to See the Answer](#)

Q2. With respect to **MARPOL 73/78, Annex - II**, Noxious liquid chemicals are divided into categories.

- A. State the number of categories, and what does each category signify. (7)
- B. State the requirement of Procedures and Arrangements Manual, and what information is available. (7)
- C. What are the latest amendments in IBC code. (6)

<b>2022/DEC/Q2</b>	<b>2023/OCT/Q2</b>	<b>2024/DEC/Q2</b>
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[Click Here to See the Answer](#)

Q3. With reference to **Annex VI of MARPOL**, what are the salient features of

- A. EEDI (Energy efficiency design index) (5)
- B. EEOI (Energy Efficiency Operational Indicator) (5)
- C. Enhanced SEEMP (Ship Energy Efficiency Management Plan) (5)
- D. CII (Carbon Intensity Indicator) (5)

<b>2022/DEC/Q3</b>	<b>2023/OCT/Q3</b>	<b>2024/DEC/Q3</b>
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[Click Here to See the Answer](#)

4. Explain how PSC is different from **FSC/FSI**? Discuss Clear Grounds under SOLAS, MARPOL and the STCW with examples. (20)

<b>2022/DEC/Q4</b>	<b>2023/OCT/Q4</b>	<b>2024/DEC/Q4</b>
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[Click Here to See the Answer](#)

Q5. Discuss the following with respect to **International Safety Management (ISM) code**:

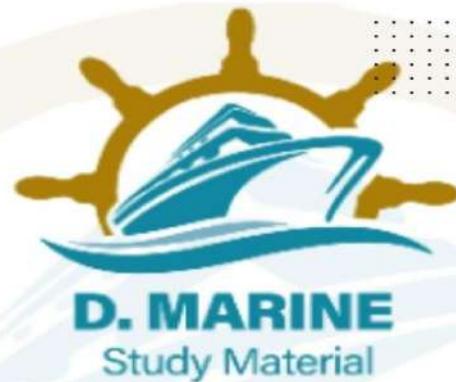
- A. Emergency preparedness, drills and training. (7)
- B. Reporting of near miss, non-conformities, accidents/incidents and hazardous occurrences. (7)
- C. Risk assessment Identification of critical equipment, tests and minimum spares requirement. (6)

<b>2022/DEC/Q5</b>	<b>2023/OCT/Q5</b>	<b>2024/DEC/Q5</b>
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**Q6. Discuss on the following with respect AFS Convention:**

- A. Salient features and benefits of AFS Convention (5)
- B. Benefits of new generation TBT free paints (5)
- C. Survey and certification requirements for vessels GT 400 and above. (5)
- D. Survey and certification requirements for vessels GT less than 400. (5)

**2022/DEC/Q6**

**2023/OCT/Q6**

**2024/DEC/Q6**

[\*\*Click Here to See the Answer\*\*](#)

**Q7. a) State where information can be obtained with regard to the safe carriage of **hazardous substances** as cargo. (8)**

- B. For a hazardous cargo of your choice discuss the following. (12)
  - i) Storage and transport.
  - ii) Hazardous properties.
  - iii) Firefighting and suppression techniques.
  - iv) Medical effects and treatment after physical contact with the cargo.

**2022/DEC/07**

**2023/OCT/07**

**2024/DEC/07**

[\*\*Click Here to See the Answer\*\*](#)

**Q8. What are the core features of the **FSS Code**? (International fire safety systems code). Elaborate on any one test prescribed by the Code. (20)**

**2022/DEC/Q8**

**2023/OCT/Q8**

**2024/JUL/Q6**

**2024/DEC/Q8**

[\*\*Click Here to See the Answer\*\*](#)

**Q9. With reference to a recent ILO notice on the health hazards from **asbestos**.**

- A. State where asbestos may be found on board ship. (6)
- B. State the health risks from asbestos. (7)
- C. Outline the precautions necessary to minimize exposure to asbestos during an emergency repair. (7)

**2022/D C/Q9**

**2023/OCT/Q9**

**2024/DEC/Q9**

[\*\*Click Here to See the Answer\*\*](#)



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