

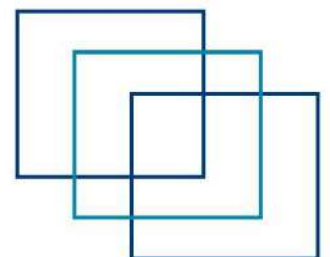


MEO CLASS-1 WRITTEN

FOR INDIAN COMPETENCY EXAM

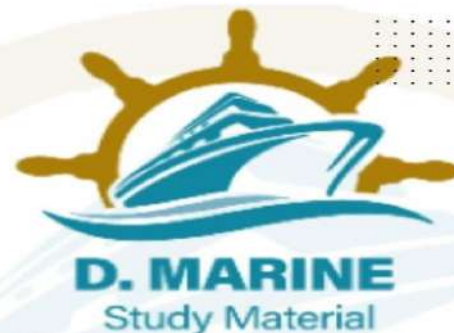


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JAN - 2021

Q1. Stress is one of the factors affecting the performance of an individual. What are the primary strategies that may be employed for coping with stress affected personnel? How these elements can be best implemented in ships personnel motivating them for better team work?

2021/JAN/Q1

[Click Here to See the Answer](#)

Q2. UNCLOS requires the member states to exercise administrative, technical and social control on ships to ensure safety operations and control of marine pollution. In recent times the intervention of port states has increased in supplementing the work of flag states. Discuss objective and responsibilities of flag and port state administrations towards achieving their objectives of eliminating substandard ships.

2021/JAN/Q2

[Click Here to See the Answer](#)

Q3. Write short notes on any THREE:

- A. Lloyd's Open Form;
- B. General Average and Particular Average.
- C. Bill of Lading.
- D. Treaty, Convention and Protocol.

2021/JAN/Q3

[Click Here to See the Answer](#)

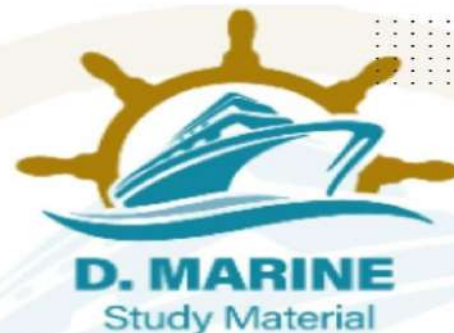
Q4. The vessel in which you are the Chief Engineer is about to be laid up for 3 months for commercial reasons. All equipment and machinery on board require to be preserved during the lay-up period for recommissioning when required. Describe the actions you will take as Chief Engineer to prepare the Main Propulsion diesel engine for preserving during the lay-up period.

2020/OCT/Q9 2021/JAN/Q4

[Click Here to See the Answer](#)



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Q5. Discuss the additional risks of bulk carriers and tankers which have necessitated the enhanced survey programme for these ship types. State the major requirements of inspections under this programme.

2021/JAN/Q5

[Click Here to See the Answer](#)

Q6. The European Union (EU) Monitoring, Reporting and Verification (MRV) regulation requires ship owners and operators to annually monitor, report and verify CO₂ emissions for vessels larger than 5000 GT and which call at any EU port is already in force. Against this background.

(a) Explain the salient differences between MRV mandated by EU and the Data Collection and Reporting under MARPOL.

(b) Draft a fleet circular to the vessels under your management, describing the care and procedures to be practiced by the vessels for the compliance of EU MRV regulations and IMO Data Collection & Reporting Respectively.

2021/JAN/Q6

[Click Here to See the Answer](#)

Q7. Describe the general structure of a Ballast Water Treatment (BWT) System, highlighting the following methods of treatment: -

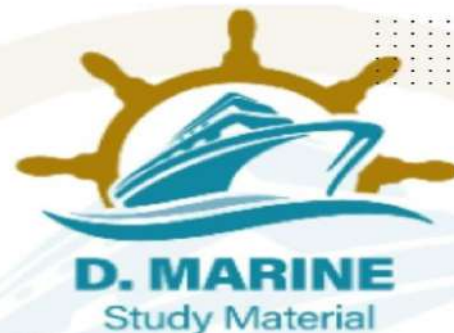
- a) UV Treatment method
- b) Gas Treatment method
- c) Electrolysis method
- d) Magnetic Separation method.

2020/JAN/Q6 **2021/JAN/Q7**

[Click Here to See the Answer](#)



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Q8. With reference to surveying of large starting air receivers:

(a) Explain where corrosion is likely to occur and state why it occurs in these regions;

(b) State how the incidence of corrosion in air receivers might be minimized:

(c) If serious corrosion is detected in a starting air receiver and that receiver must be used explain how you, as Chief Engineer, would determine the maximum pressure to which the receiver should be subjected;

(d) State the further action a Chief Engineer must take upon discovering such air receiver corrosion.

2021/JAN/Q8

[Click Here to See the Answer](#)

Q9. Describe the background and relevance of the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001. Define the following under Bunker Convention and explain how they differ from other similar Convention such as CLC'92. (a) Pollution damage; (b) Bunker oil; (c) Time limits for claims; (d) Exclusions.

2020/OCT/Q3 2021/JAN/Q9

[Click Here to See the Answer](#)

FEB – 2021

Q1. Discuss the capital, voyage and operating costs of ship operation and explain Chief Engineer's role in optimizing them. What are the modern management principles used in Inventory control?

2021/FEB/Q1

[Click Here to See the Answer](#)

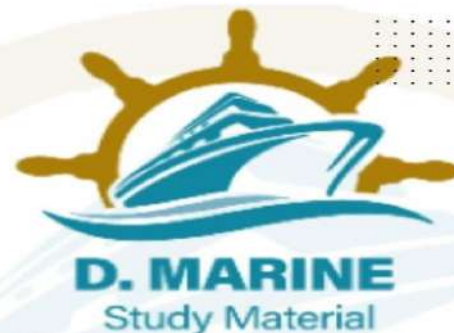
Q2. (a) Describe the structure of IMO.

(b) Specify the responsibilities and work done by the Assembly, the Council and various main committees. What role do the sub committees perform in supporting the main committees?

(c) State and explain the two methods used to amend IMO conventions and discuss which method is quicker and why. Give an illustration of



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amendments to either SOLAS or MARPOL stating the nature and topic of amendments.

2021/FEB/Q2

[Click Here to See the Answer](#)

Q3. Assume a collision occurs between an oil tanker and a bulk carrier in an Indian port.

(a) Discuss the convention under which the ship owners can be liable for shore clean-up and compensation costs assuming oil is spilt from both ships.

(b) Explain whether the liability is "strict" and also exemptions available to both ship owners.

2021/FEB/Q3

[Click Here to See the Answer](#)

Q4. 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".

2021/FEB/Q4

[Click Here to See the Answer](#)

Q5. Differentiate between annual, intermediate, renewal, damage and repair surveys. What are the purposes of each survey onboard? Also, enlist all statutory certificates carried onboard, their issuing authority, and the IMO Convention under which they are issued.

2021/FEB/Q5

[Click Here to See the Answer](#)

Q6. A. What are the principles of modern salvage law?

B. What is General Average,

C. Explain with context to General Average,

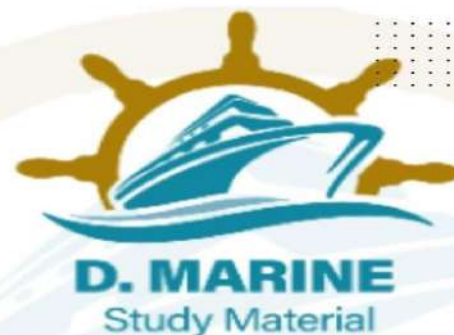
i. Entitlement;

ii. Artificial;

iii. Adjustment;



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iv. Contestation

2021/FEB/Q6

[Click Here to See the Answer](#)

Q7. Socio cultural differences have been an accepted fact in major merchant ships around the globe. Explain how such differences generate inter personnel conflicts and effective safety management, how they can be resolved on board.

2021/FEB/Q7

[Click Here to See the Answer](#)

Q8. How many types of warranties are there in Marine Insurance? Give an example of each type with reference to a hull and machinery policy of insurance.

2021/FEB/Q8

[Click Here to See the Answer](#)

Q9. Referring generally to a general Ballast Water Treatment (BWT) System, explain; a. Requirements related to construction and technical performance. b. Requirements related to onboard installation of the system. c. Special requirements for tankers and ships carrying dangerous chemicals.

2021/FEB/Q9

[Click Here to See the Answer](#)

MAR – 2021

Q1. (a) As a Chief Engineer officer of a tanker vessel, how do you ensure protection of the environment by compliance with the various regulation of MARPOL Annex 1 for prevention and control of pollution at sea?

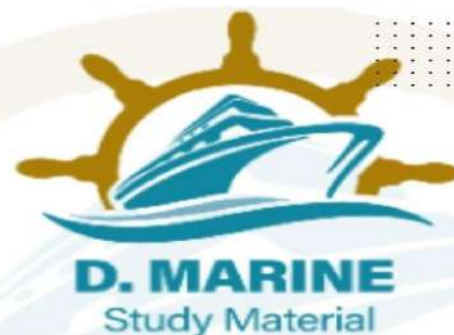
(b) What are the different pollutants mentioned in Annex VI of MARPOL; State various requirements of compliance under Annex VI of MARPOL.

2021/MAR/Q1

[Click Here to See the Answer](#)



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Q2. (a) What are the key features of UNCLOS with respects to environment protection?

(b) Briefly explain following:

- (i) Territorial Sea,
- (ii) Internal waters,
- (iii) Contiguous Zone,
- (iv) Exclusive Economic Zone,
- (V) Continental Shelf,
- (Vi) High Seas.

2021/MAR/Q2

[Click Here to See the Answer](#)

Q3. With respect to Energy Efficiency Design Index(EEDI) explain in detail the following;

A. Required Energy Efficiency Design Index;

B. Attained Energy Efficiency Design Index;

2020/NOV/Q2 **2020/DEC/Q3** **2021/MAR/Q3**

[Click Here to See the Answer](#)

Q4. Explain the following maritime terms: - A. Charter Party;

B. Freight;

C. Bare Boat charter;

D. Bill of Lading;

E. Lay time;

F. Demurrage and Off-hire.

2020/NOV/Q7 **2021/MAR/Q4**

[Click Here to See the Answer](#)

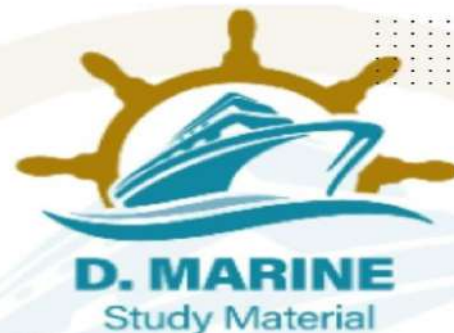
Q5. Illustrate the salient factors for “onboard training’ and standard of competence as laid out in STCW 95 Chapter III. Underline the specific roles a Chief Engineer needs to perform towards satisfactory training of engine room personnel under the existing and new Regulation. What will be the criteria for evaluating competence for onboard training by a Chief Engineer?

2021/MAR/Q5 **2021/MAR/Q1** **2021/MAR/Q1**

[Click Here to See the Answer](#)



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Q6. Discuss the principles of Marine Insurance. Explain each of the principle with suitable examples.

2021/MAR/Q6

[Click Here to See the Answer](#)

Q7. Explain Abraham Maslow's theory of motivation. As chief engineer onboard, stress the issues you will address for lack of motivation, differences in attitude and to increase sense of competitiveness for better management and effective control?

2021/MAR/Q7

[Click Here to See the Answer](#)

Q8. Discuss the additional risks of bulk carriers and tankers which have necessitated the enhanced survey programme (ESP) for these ship types. State the major requirements of inspections under the enhanced survey programme.

2021/JAN/Q5 **2021/MAR/Q8**

[Click Here to See the Answer](#)

Q9. (a) Describe the background and relevance of the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001.

(b) Define the following under Bunker Convention and explain how they differ from other similar Convention such as CLC'92.

(i) Pollution damage

(ii) Bunker oil

(iii) Time limits for claims

(iv) Exclusions.

2020/OCT/Q3 **2021/JAN/Q9**

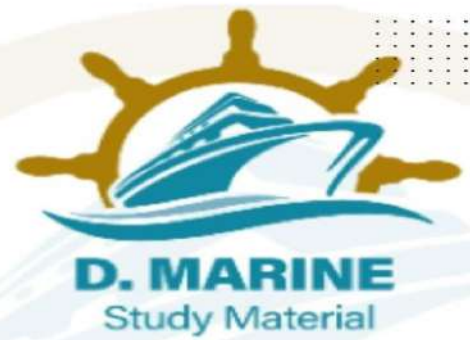
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APR – 2021

Q1. On a ship where you are employed as Chief Engineer, the vessel has UMS system for controlling engine room and a central scanning and data logging system for monitoring. Explain the special attention you will pay to



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the specific data and formulate a chart for condition monitoring. Highlight the tools in computer application you will use for making graphical representation of the salient points, which will enable trend analysis.

2021/APR/Q1

[Click Here to See the Answer](#)

Q2. 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

2021/APR/Q2

[Click Here to See the Answer](#)

Q3. Explain the significance of propeller curves. Enumerate the safety margins in relation to the propeller operations.

2021/APR/Q3

[Click Here to See the Answer](#)

Q4. The initial IMO strategy for GHG reduction adopted at MEPC 72 is the first milestone set out in the roadmap for developing a comprehensive IMO strategy on reduction of GHG emissions from ships:

(a) Define the objectives of this Initial Strategy.

(b) State the levels of ambition identified in the Initial Strategy.

(c) List out the small term, mid-term and long term candidate measures with possible timelines as discussed in the IMO Strategy for reduction of GHG emissions.

2020/MAR/Q6 **2020/OCT/Q5** **2020/NOV/Q6** **2021/APR/Q4**

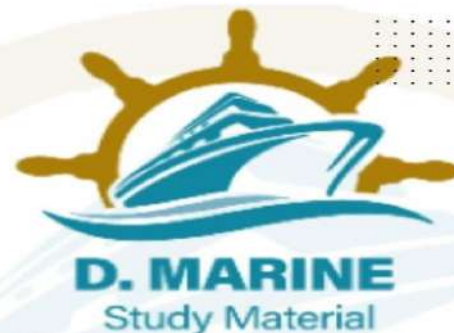
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Q5. A. What are P&I clubs? Describe how P&I clubs collect fund from ship-owners;

B. What are the risks that are covered under the term “protection” and “indemnity?”



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C. State briefly what are the advantages of the formation of a P&I club in India?

2021/APR/Q5

[Click Here to See the Answer](#)

Q6. During inspection of propeller in the dry dock, a surface crack has been noticed on one of the blades. State the steps taking by you as chief engineer for successful handling of the situation. Also, if some surface cracks are noticed on the keyway of a tail-end shaft, state the steps taken by you for tackling the problem. Explain the effects in case the cracks, as stated, are not dealt with at the proper time.

2021/APR/Q6

[Click Here to See the Answer](#)

Q7. (A). Explain Fault Tree Analysis (FTA) with relevant examples.
(B). Construct the Fault tree for “Engine Starting Failure” i.e. the engine speed goes down and finally stops.

2021/APR/Q7

[Click Here to See the Answer](#)

Q8. To operate engines in compliance with the new IMO 2020 Sulphur limits and to prepare the engine and auxiliaries for the changes in fuel characteristics, is a challenge for owners, operators and crews.

From the Chief engineer’s perspective, explain the following briefly:

- (a) Cylinder lubrication strategies;
- (b) Compatibility issues between fuel bunkered at differed ports.
- (c) Procedures employed for preparing fuel oil tanks onboard.

2020/MAR/Q3 2020/NOV/Q5 2021/APR/Q8

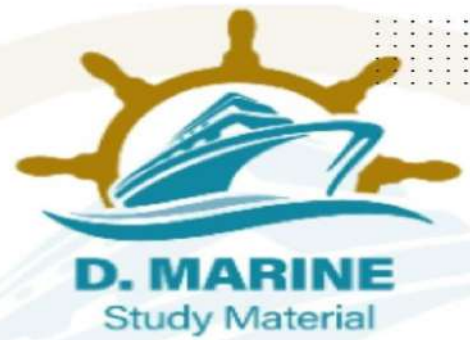
[Click Here to See the Answer](#)

Q9. An Indian flag ship has grounded off the coast of India and the owners have abandoned the property. In accordance with the provisions under the merchant Shipping Act, what steps should be initiated and who should initiate such steps for the safety of the marine property and environment.

2021/APR/Q9



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JULY – 2021

Q1. The vessel in which you are the Chief Engineer is about to be laid up for 3 months for commercial reasons. All equipment and machinery on board require to be preserved during the lay-up period for re-commissioning when required. Describe the actions you will take as Chief Engineer to prepare the Main Propulsion diesel engine for preserving during the lay-up period.

2020/OCT/Q9 **2021/JAN/Q4** **2021/JULY/Q1**

[Click Here to See the Answer](#)

Q2. A. What are the various statutory Certificates carried on board oil tanker, and their validity? Mention the Conventions, under which they are issued, giving the reference of their Conventions.

B. Explain Harmonization of Statutory Certificates under the SOLAS 74/88 Convention. If a period of a statutory Certificate has just expired and a port is having inadequate survey facility, state the actions you will take in compliance with the provisions of SOLAS.

2021/JULY/Q2

[Click Here to See the Answer](#)

Q3. What are the principal reasons responsible for compounding of machinery vibration in connection with operation of a long stroke diesel engines and associated machinery arrangements? What are the key factors for excitations generated by the engines?

2021/JULY/Q3

[Click Here to See the Answer](#)

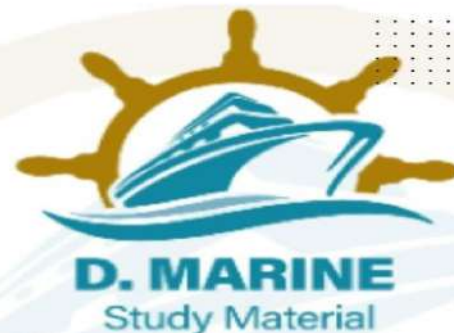
Q4. The initial IMO strategy for GHG reduction adopted at MEPC 72 is the first milestone set out in the roadmap for developing a comprehensive IMO strategy on reduction of GHG emissions from ships:

(a) Define the objectives of this Initial Strategy.

(b) State the levels of ambition identified in the Initial Strategy.



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(c) List out the small term, mid-term and long term candidate measures with possible timelines as discussed in the IMO Strategy for reduction of GHG emissions.

2020/MAR/Q6 **2020/OCT/Q5** **2020/NOV/Q6** **2021/APR/Q4**
2021/JULY/Q4

[Click Here to See the Answer](#)

Q5. (a) Discuss, in detail, the main function of a Bill of Lading and explain the reasons for a Bill of lading being made out 'to order' instead of to a named consignee.

(b) A Bill of Lading is said to be evidence of the contract of carriage of goods. Discuss any circumstances when a Bill of Lading may become the actual contract of carriage.

2021/JULY/Q5

[Click Here to See the Answer](#)

Q6. Name the present ISO standards for Marine Fuel and explain the silent features of it. With reference to fuel oil analysis report, explain the relevant corrective action which can be initiated against various adverse observations in it.

2020/OCT/Q8 **2021/JULY/Q6**

[Click Here to See the Answer](#)

Q7. Elaborate the influence of a charter on operation of propulsion and other ship board machineries during a voyage. After taking over ship as C/E you have been informed that ship is on time charter and has a history of unforeseen auxiliary machinery breakdown at sea. State the different options you have and actions you would take as C/E prior to the commencement of voyage.

2020/DEC/Q2 **2021/JULY/Q7**

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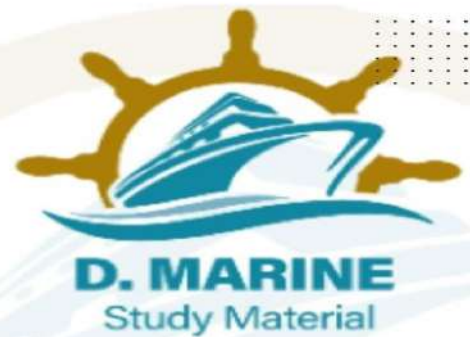
Q8. Discuss a generic model of Formal Safety Assessment (FSA) promulgated by the IMO, with brief explanation on the following terms:

(a) Cost effective indices

(b) Human Reliability Analysis (HRA)



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- (c) Extended Task Analysis (XTA)
- (d) Technique for Human Error rate Prediction (THERP)
- (e) Fault & Event Tree Analysis
- (f) Failure Mode and Effect Analysis (FMEA).

2021/JULY/Q8

[Click Here to See the Answer](#)

Q9. List the objectives of an ISM code. How an internal audit helps in External Audit of a vessel? You have been asked to carry out an internal audit of the deck department on board your vessel, explain how you will proceed in carrying out effective internal audit.

2021/JULY/Q9

[Click Here to See the Answer](#)

JULY - 2021

Q1. Periodical Lubricating Oil Analysis, its correct interpretation and corrective measures are of critical significance for the maintenance of marine machineries. With reference to the modern analysis techniques employed for the condition of L.O, discuss the following:

- A). Elemental (Spectrometric) Analysis
- B). Fourier Transform Infrared (FTIR) Spectroscopy
- C). Particle Count
- D). Base Number Vs Acid Number

2021/JUL/Q1(M)

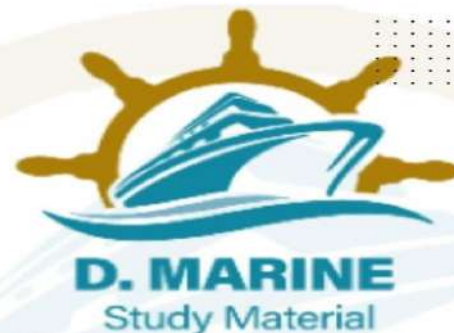
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Q2. (a) The STCW convention was amended in Manila in 25 June 2010. What major changes and amendments were made for the engine department?

(b). Illustrate the salient factors for "Onboard Training" and standard of competence as laid out in the existing chapter III of the STCW 95 and the amended chapter III of STCW (Manila amendments). Underline the specific roles a chief engineer needs to perform towards satisfactory training of engine room personnel under the existing and new regulation. What will be



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the criteria for evaluating competence for onboard training by a chief engineer?

2021/JUL/Q2(M)

[Click Here to See the Answer](#)

Q3. With reference to port State control inspection;

(A) What are "clear grounds" and "ISM related deficiencies" for a Port State Control Officer to conduct An more detailed inspection of the ship?

(B) List out five deficiencies, which may lead to detention of the vessel.

Also, enumerate the cause of such deficiency and preventive action you, as Chief Engineer, will take to avoid re-occurrence of such detainable deficiencies.

2021/JUL/Q3(M)

[Click Here to See the Answer](#)

Q4. (A) Discuss what you understand by directional stability and manoeuvring. How are these attributes provided in a ship?

(B) Using typical engine power versus engine speed diagram and propeller demand curves, discuss the relation between the maximum rated output of the propulsion plant and the power for which the propeller is designed.

2021/JUL/Q3(M)

[Click Here to See the Answer](#)

Q5. A. What are P&I clubs? Describe how P&I clubs collect fund from ship-owners;

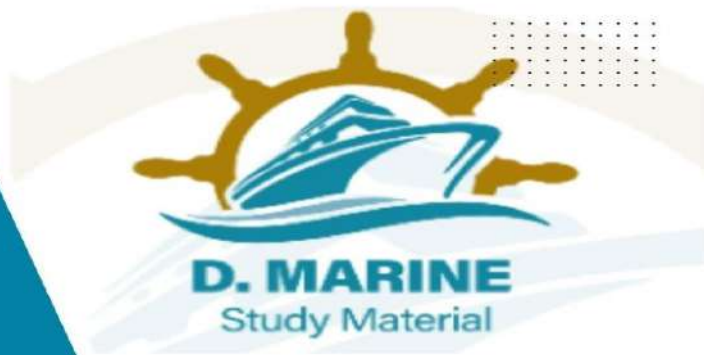
B. What are the risks that are covered under the term "protection" and "indemnity?"

2021/APR/Q5 2021/JUL/Q5(M)

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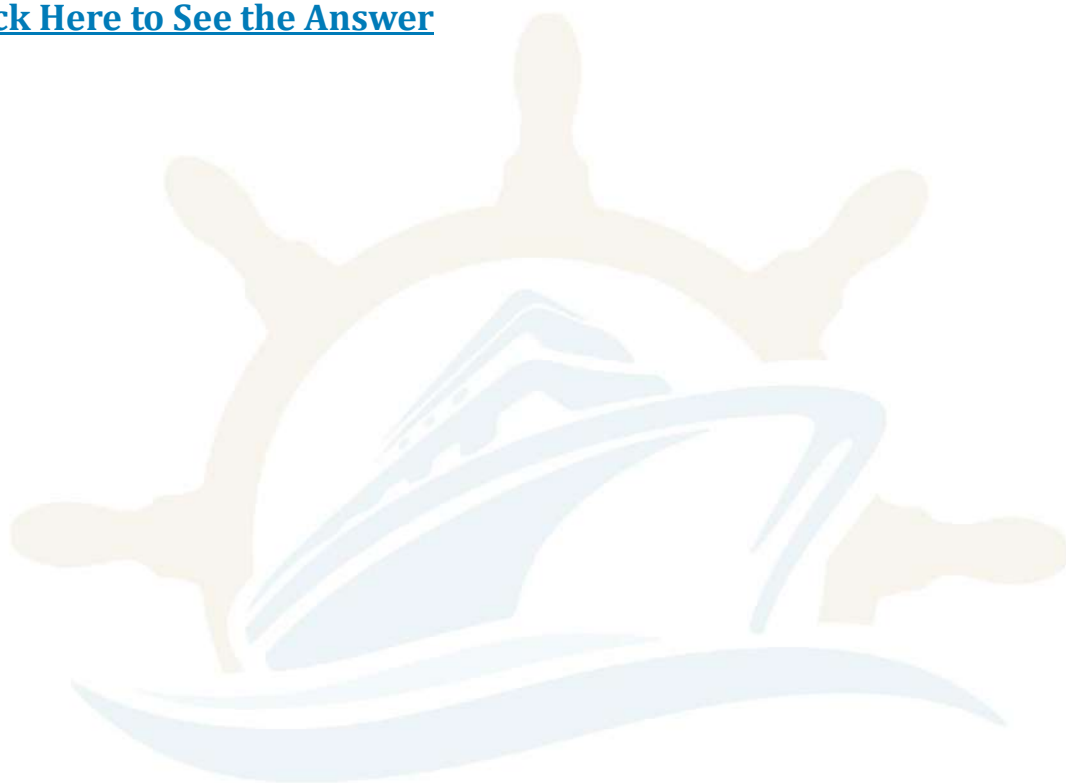
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Q6. Elaborate the influence of a charter on operation of propulsion and other ship board machineries during a voyage. After taking over ship as Chief Engineer you have been informed that ship is on time charter and has a history of unforeseen auxiliary machinery breakdown at sea. State the different options you have and actions you would take as Chief Engineer prior to the commencement of voyage.

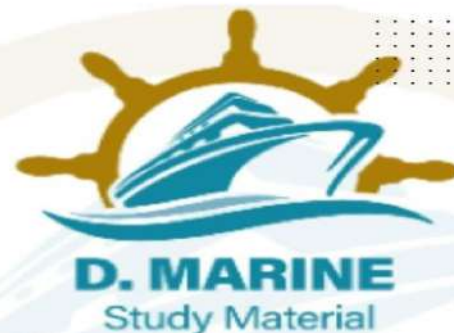
2020/DEC/Q2 | 2021/JULY/Q7 | 2021/JULY/Q6(M)

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Q7). With the introduction of new generation of super-long stroke engines and changed process parameters triggered by environmental compliance rules, “Cold Corrosion” of cylinder liners has grown to become a major issue for the latest generation of two-stroke engines. Discuss the causes and mitigation measures, stressing on the following:

- A. Increased Jacket Cooling Water Temperatures Systems;
- B. New Cylinder Liner designs;
- C. New Cylinder Lubricators.

2021/JULY/Q7(M)

[Click Here to See the Answer](#)

Q8. Elaborate the influence of a charter on operation of propulsion and other ship board machineries during a voyage. After taking over ship as Chief Engineer you have been informed that ship is on time charter and has a history of unforeseen auxiliary machinery breakdown at sea. State the different options you have and actions you would take as Chief Engineer prior to the commencement of voyage.

2021/JULY/Q8(M)

[Click Here to See the Answer](#)

Q9 A. What are the principles of modern salvage law?

B. What is General Average,

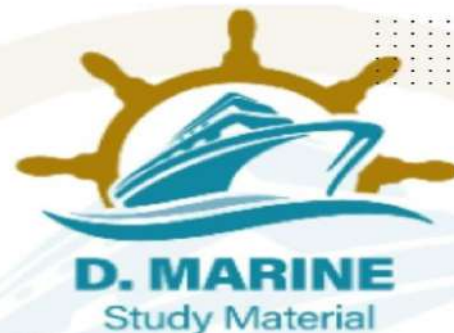
C. Explain with context to General Average, i. Entitlement; ii. Artificial; iii. Adjustment; iv. Contestation

2021/FEB/Q6 **2021/JUL/Q9(M)**

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AUG – 2021

Q1. Write short notes on Casualty Investigation Code and IMO Member state audit scheme.

2020/DEC/Q1 **2021/AUG/Q1**

[Click Here to See the Answer](#)

Q2. Periodical Lubricating Oil Analysis, its correct interpretation and corrective measures are of critical significance for the maintenance of marine machineries. With reference to the modern analysis techniques employed for the condition of L.O, discuss the following:

A). Elemental (Spectrometric) Analysis

B). Fourier Transform Infrared (FTIR) Spectroscopy

C). Particle Count

D). Base Number Vs Acid Number

2021/AUG/Q2 **2021/JUL/Q1**

[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".

2021/FEB/Q4 **2021/AUG/Q3**

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Q4. (A) Discuss what you understand by directional stability and manoeuvring. How are these attributes provided in a ship?

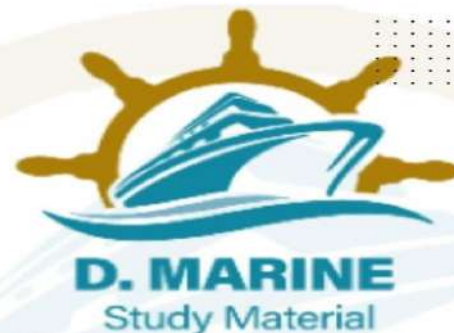
(B) Using typical engine power versus engine speed diagram and propeller demand curves, discuss the relation between the maximum rated output of the propulsion plant and the power for which the propeller is designed.

2021/JUL/Q4 **2021/AUG/Q4**

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Q5. A. What are P&I clubs? Describe how P&I clubs collect fund from ship-owners;

B. What are the risks that are covered under the term “protection” and “indemnity?”

2021/APR/Q5 **2021/JUL/Q5** **2021/AUG/Q5**

[Click Here to See the Answer](#)

Q6. (a) Describe the background and relevance of the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001.

(b) Define the following under Bunker Convention and explain how they differ from other similar Convention such as CLC'92.

(i) Pollution damage

(ii) Bunker oil

(iii) Time limits for claims

(iv) Exclusions.

2020/OCT/Q3 **2021/JAN/Q9** **2021/AUG/Q6**

[Click Here to See the Answer](#)

Q7. A ship sustained damages on hull while berthing. As a chief engineer officer of this ship, write a dry dock specification for the repair of the following damage that has occurred, stating what factors has to be considered when casting the repairs. Your inspection revealed that on port side there is a damage to shell plating. You observed a deep dent on shell plating of 20 mm thick for approximately 2 square meter. This shell plating has to be removed and replacing along with the relevant damaged stiffeners which have been setup.

2021/AUG/Q7

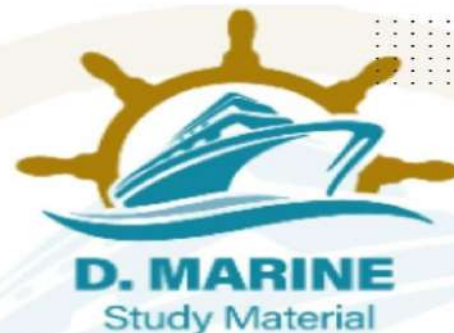
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Q8. Elaborate the influence of a charter on operation of propulsion and other ship board machineries during a voyage. After taking over ship as Chief Engineer you have been informed that ship is on time charter and has a history of unforeseen auxiliary machinery breakdown at sea. State the different options you have and actions you would take as Chief Engineer prior to the commencement of voyage.

2020/DEC/Q2 **2021/JULY/Q7** **2021/JULY/Q6(M)** **2021/AUG/Q8**



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Q9. A) What is meant by Strategic Management? Explain the significance of strategic management in working of an organization.

B). Define strategy and tactics. Differentiate between strategy and tactic giving examples

2020/DEC/Q5 **2021/AUG/Q9**

[Click Here to See the Answer](#)

SEP – 2021

Q1. The vessel in which you are the Chief Engineer is about to be laid up for 3 months for commercial reasons. All equipment and machinery on board require to be preserved during the lay-up period for recommissioning when required. Describe the actions you will take as Chief Engineer to prepare the Main Propulsion diesel engine for preserving during the lay-up period.

2020/OCT/Q9 **2021/JAN/Q4** **2021/JULY/Q1** **2021/SEP/Q1**

[Click Here to See the Answer](#)

Q2. (a) Describe the structure of IMO.

(b) Specify the responsibilities and work done by the Assembly, the Council and various main committees. What role do the sub committees perform in supporting the main committees?

(c) State and explain the two methods used to amend IMO conventions and discuss which method is quicker and why. Give an illustration of amendments to either SOLAS or MARPOL stating the nature and topic of amendments.

2021/FEB/Q2 **2021/SEP/Q2**

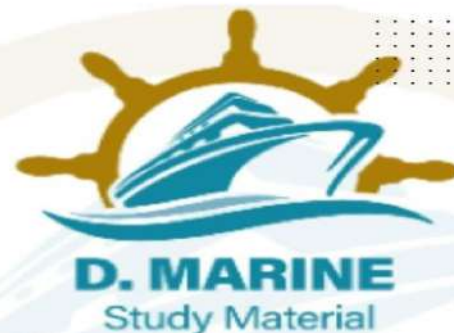
[Click Here to See the Answer](#)

Q3. (a) As chief engineer officer, explain how you will prepare vessel for dry docking. Your answer should also include all the required items that you will ensure/procure when vessel is planned for dry docking. (b) Outline the essential information to be supplied to the dry dock management prior to dry docking a vessel.

2021/SEP/Q3



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Q4. Name the present ISO standards for Marine Fuel and explain the salient features of it. With reference to fuel oil analysis report, explain the relevant corrective action which can be initiated against various adverse observations in it.

(b) explain the salient features and importance of Bunker Delivery Note.

2020/OCT/Q8 2021/JULY/Q6 2021/SEP/Q4

[Click Here to See the Answer](#)

Q5. The initial IMO strategy for GHG reduction adopted at MEPC 72 is the first milestone set out in the roadmap for developing a comprehensive IMO strategy on reduction of GHG emissions from ships:

(a) Define the objectives of this Initial Strategy.

(b) State the levels of ambition identified in the Initial Strategy.

(c) List out the small term, mid-term and long term candidate measures with possible timelines as discussed in the IMO Strategy for reduction of GHG emissions.

2020/MAR/Q6 2020/OCT/Q5 2020/NOV/Q6 2021/APR/Q4

2021/JULY/Q4 2021/SEP/Q5

[Click Here to See the Answer](#)

Q6. (A) Describe the salient features of latest IOPP equipment compared with the earlier versions. Discuss the latest guidelines for the mandatory entries to be made in Oil Record Book.

(B) Your ship is fitted with an approved comminuted and disinfected sewage system. State the criteria to be followed for discharge of sewage from such a system and what are the parameters to be considered for deciding the moderate rate of discharge for a particular ship.

2021/SEP/Q6

[Click Here to See the Answer](#)

Q7. With reference to Marine Insurance, write short notes on following:

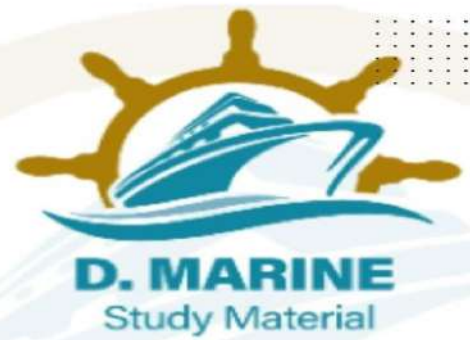
(a) Port of Refuge

(b) Particular Average and General Average

(c) Total Loss and Constructive Loss.



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2020/MAR/Q8 **2020/OCT/Q7** **2021/SEP/Q7**

[Click Here to See the Answer](#)

Q8. An Indian flag ship has grounded off the coast of India and the owners have abandoned the property. In accordance with the provisions under the merchant Shipping Act, what steps should be initiated and who should initiate such steps for the safety of the marine property and environment.

2021/APR/Q9 **2021/SEP/Q8**

[Click Here to See the Answer](#)

Q9. (a) The STCW 95 convention was amended in manila on 25th June 2010. What major changes and amendments were made for the engine department?

(b). Illustrate the salient factors for "Onboard Training" and standard of competence as laid but in the existing chapter III of the STCW 95 and the amended chapter III of STCW (Manila amendments). Underline the specific roles a chief engineer needs to perform towards satisfactory training of engine room personnel under the existing and new regulation. What will be the criteria for evaluating competence for onboard training by a chief engineer?

2021/JUL/Q2 **2021/SEP/Q9**

[Click Here to See the Answer](#)

OCT - 2021

Q1. While taking over a new ship in shipyard, as a chief engineer elaborate your inspections/ checks and significance of following:

(a) Governing factors for having optimum stability in both the static and dynamic categories.

(b) Intact stability criteria that the new ship required to fulfil

(c) Effect of draft on Righting Arm

(d) Cross curves of stability

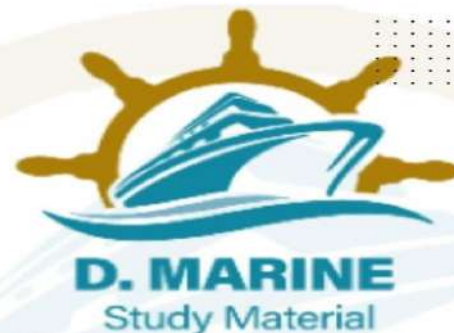
(e) Free communication Effect (Stability changes that occur when an off-center compartments is in free communication with the sea)

2021/OCT/Q1

[Click Here to See the Answer](#)



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Q2. (a) Develop generic framework of a shipboard energy efficiency Management plan (SEEMP) for an existing ship and justify that it is an effective tool for improving commercial viability of ship operations than a more regulatory measure.

(b) Describe the process for calculating 'required EEDI' and 'attained EEDI' of a new container ship (c) Explain how the 'attained EEDI' can be validated and suggest ways to improve the attained EEDI should the need arise.

2021/OCT/Q2

[Click Here to See the Answer](#)

Q3. (a) What are human related factors taken into account at potential risk factors in a risk assessment on ships? Name three such human risks and possible risk mitigation measures that could be taken for each of them.

(b) You are a chief engineer on a 60,000 DWT bulk carrier. Your ship had a major breakdown of the main engine turbocharger, Your vessel is unable to make more than 4 Knots speed. In consultation with the master, you are contemplating diverting to the port of Durban just 40nm away. Explain you would do a risk assessment to evaluate the risk of engine failure during the approach

2021/OCT/Q3

[Click Here to See the Answer](#)

Q4. Elaborate the objectives and requirements of Hong Kong international convention for the safe and environmentally Sound Recycling of ships.2009

2021/OCT/Q4

[Click Here to See the Answer](#)

Q5. The vessel in which you are the Chief Engineer is about to be laid up for 3 months for commercial reasons. All equipment and machinery on board require to be preserved during the lay-up period for recommissioning when required. Describe the actions you will take as Chief Engineer to prepare the Main Propulsion diesel engine for preserving during the lay-up period

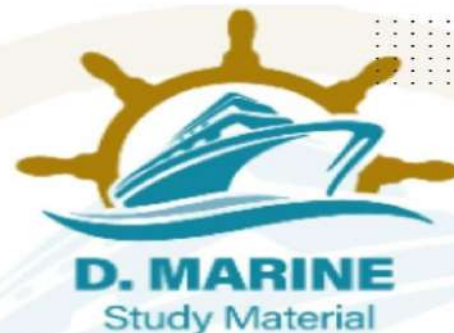
2020/OCT/Q9 **2021/JAN/Q4** **2021/JULY/Q1** **2021/SEP/Q1**

2021/OCT/Q4

[Click Here to See the Answer](#)



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Q6. Regarding Ballast Water Management Convention explain

- (a) Ballast Water Exchange Standard
- (b) Ballast Water Performance Standard
- (c) Treatment methods for ballast water
- (d) Approved methods for treatment system using active and non-active substances.
- (e) What are the marine pollution problems related to port development such as ballast water , dredging and spills front ships.

2021/OCT/Q6

[Click Here to See the Answer](#)

Q7. Explain the following maritime terms: - A. Charter Party;

- B. Freight;
- C. Bare Boat charter;
- D. Bill of Lading;
- E. Lay time;
- F. Demurrage and Off-hire.

2020/NOV/Q7 2021/MAR/Q4 2021/OCT/Q7

[Click Here to See the Answer](#)

Q8. (a) Onerous Tax Regimes , Multiplicity of Regulations, Quality Manpower Shortage , High Port Calling Costs. Congestion in ports and lack of connectivity with Hinterland etc., are protected as the impediments for the growth of Coastal shipping in India. Discuss (b) The 'Sagar Mala Performance' is an initiative by the government of India to enhance the performance of the country's logistics sector and is aimed to boost the development of coastal shipping in India. Discuss

2021/OCT/Q8

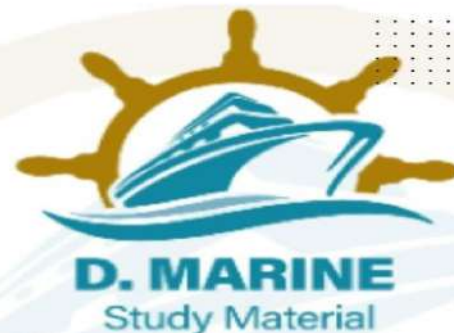
[Click Here to See the Answer](#)

Q9. (a) As chief engineer officer, explain how you will prepare vessel for dry docking. Your answer should also include all the required items that you will ensure/procure when vessel is planned for dry docking. (b) Outline the essential information to be supplied to the dry dock management prior to dry docking a vessel.

2021/SEP/Q3 2021/OCT/Q9



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NOV – 2021

Q1. Discuss the additional risks of bulk carriers and tankers which have necessitated the enhanced survey programme (ESP) for these ship types. State the major requirements of inspections under this programme.

2021/JAN/Q5 **2021/MAR/Q8** **2021/NOV/Q1**

[Click Here to See the Answer](#)

Q2. (a) A ship owner is exposed to many liabilities during the operation of the ship. Identify five such liabilities and explain how these are insured. Explain liability and the limitation of liability. Specify when the benefit of limiting the liability may not be available.

(b) Multimodal transportation involves the transfer of a container by different modes of transportation. Many entities involved in this transportation can be exposed to liabilities for loss/damage to the container. Identify these entities and discuss how such liabilities are insured.

2021/NOV/Q2

[Click Here to See the Answer](#)

Q3. Discuss on some of the latest innovations incorporated by the engine manufacturers to enhance the performance monitoring, diagnostic sensors to increase the Time between overhauls.

2021/NOV/Q3

[Click Here to See the Answer](#)

Q4. Write short notes on any THREE: A. Lloyd's Open Form; B. General Average and Particular Average. C. Bill of Lading. D. Treaty, Convention and Protocol.

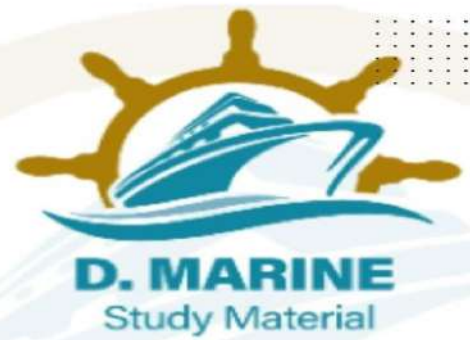
2021/JAN/Q3 **2021/NOV/Q4**

[Click Here to See the Answer](#)

Q5. The vessel in which you are the Chief Engineer is about to be laid up for 3 months for commercial reasons. All equipment and machinery on board



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require to be preserved during the lay-up period for recommissioning when required. Describe the actions you will take as Chief Engineer to prepare the Main Propulsion diesel engine for preserving during the lay-up period

2020/OCT/Q9 **2021/JAN/Q4** **2021/JULY/Q1** **2021/SEP/Q1**

2021/OCT/Q5 **2021/NOV/Q5**

[Click Here to See the Answer](#)

Q6. (a) What is the purpose of FAL convention and list the main contents of the FAL convention. (b) What are the documents that a ship is expected to be in possession as per FAL convention? What are the pros and cons of electronic exchange of documents?

2021/NOV/Q6

[Click Here to See the Answer](#)

Q7. The European Union (EU) Monitoring, Reporting and Verification (MRV) regulation requires ship owners and operators to annually monitor, report and verify CO₂ emissions for vessels larger than 5000 GT and which call at any EU port is already in force. Against this background.

(a) Explain the salient differences between MRV mandated by EU and the Data Collection and Reporting under MARPOL.

(b) Draft a fleet circular to the vessels under your management, describing the care and procedures to be practiced by the vessels for the compliance of EU MRV regulations and IMO Data Collection & Reporting Respectively.

2021/JAN/Q6 **2021/NOV/Q7**

[Click Here to See the Answer](#)

Q8. Regarding Ballast Water Management Convention explain

(a) Ballast Water Exchange Standard

(b) Ballast Water Performance Standard

(c) Treatment methods for ballast water

(d) Approved methods for treatment system using active and non-active substances.

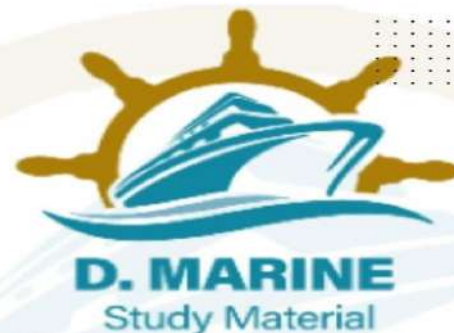
(e) What are the marine pollution problems related to port development such as ballast water, dredging and spills from ships.

2021/OCT/Q6 **2021/NOV/Q8**

[Click Here to See the Answer](#)



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Q9. With reference to surveying of large starting air receivers:

- (a) Explain where corrosion is likely to occur and state why it occurs in these regions;
- (b) State how the incidence of corrosion in air receivers might be minimized;
- (c) If serious corrosion is detected in a starting air receiver and that receiver must be used explain how you, as Chief Engineer, would determine the maximum pressure to which the receiver should be subjected;
- (d) State the further action a Chief Engineer must take upon discovering such air receiver corrosion.

DEC – 2021

Q1. (a) What is the purpose of FAL convention and list the main contents of the FAL convention.

(b) What are the documents that a ship is expected to be in possession as per FAL convention? What are the pros and cons of electronic exchange of documents?

2021/NOV/Q6 **2021/DEC/Q1**

[Click Here to See the Answer](#)

Q2. With reference to PSC inspections, explain various codes used to represent 'action to be taken' by the vessel against the deficiencies reported. Your IOPP equipment is not operational for want of spares awaited in the next port of call. How will you present your case to a PSCO for voyage permission till next port?

2020/NOV/Q1 **2021/DEC/Q2**

[Click Here to See the Answer](#)

Q3. (a) Elaborate some of the technological innovations adopted / developed to improve plant efficiency of ships propulsion engine?

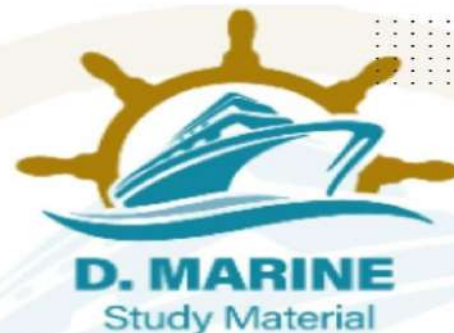
(b) Describe fuel injection system in the cam shaft less engines of any one of the two major slow speed engine makers. Highlight the improvements possible when compared with the traditional systems. 2

2021/DEC/Q3

[Click Here to See the Answer](#)



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Q4. Guidelines on Maritime Cyber Risk Management are laid down in MSC. FAL.1/Circ.3, Considering these guidelines elaborate following:

- (a) Name all the onboard systems which are prone of cyber risks due to vulnerabilities created by accessing, interconnecting or networking of such systems,
- (b) Explain the Elements of Cyber risk management.
- (c) With regard to resolution MSC. 428(98) on cyber risk management, what requirement is made mandatory for shipping companies (Company holding Document of compliance). Specify since when this requirement is enforced.

2021/DEC/Q4

[Click Here to See the Answer](#)

Q5. Explain the following maritime terms: -

- A. Charter Party;
- B. Freight;
- C. Bare Boat charter;
- D. Bill of Lading;
- E. Lay time, Demurrage and Off-hire.

2020/NOV/Q7 **2021/MAR/Q4** **2021/OCT/Q7** **2021/DEC/Q5**

[Click Here to See the Answer](#)

Q6. (a) The advent of multimodal transportation has entirely changed the legal obligations of the carrier. Enumerate these in lights of existing national/ international rules.

(b) Multimodal operator takes the responsibility of carrying the container from door to door by different modes of transportation. Briefly explain the responsibilities and liabilities of the multimodal transport operator under the UNCTAD-ICC Rules.

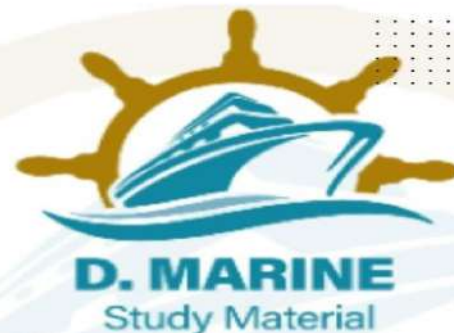
2021/DEC/Q6

[Click Here to See the Answer](#)

Q7. With reference to IMO Strategy on reduction of GHG emissions from ships:



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(a) List out the small term, mid-term and Long term candidate measures with possible timelines as discussed in the IMO strategy for reduction of GHG emissions.

(b) With the advent of stricter norms NO_x , SO_x and carbon emissions. Evaluate the various fuel options which would be able to satisfy the propulsion requirements for future & existing ships?

2021/DEC/Q7

[Click Here to See the Answer](#)

Q8. Discuss the additional risks of bulk carriers and tankers which have necessitated the enhanced survey programme (ESP) for these ship types. State the major requirements of inspections under this programme.

2021/JAN/Q5 **2021/MAR/Q8** **2021/NOV/Q1** **2021/DEC/Q8**

[Click Here to See the Answer](#)

Q9. A. What are P&I clubs? Describe how P&I clubs collect fund from ship-owners;

B. What are the risks that are covered under the term “protection” and “indemnity?”

2021/APR/Q5 **2021/JUL/Q5** **2021/AUG/Q5** **2021/DEC/Q9**

[Click Here to See the Answer](#)



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