

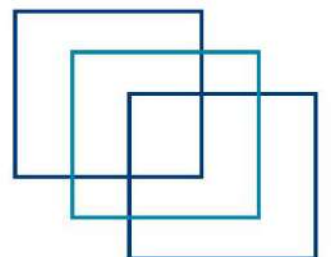


MEO CLASS 2

WRITTEN: SSEP

(SHIP SAFETY & ENVIROMENTAL PROTECTION)

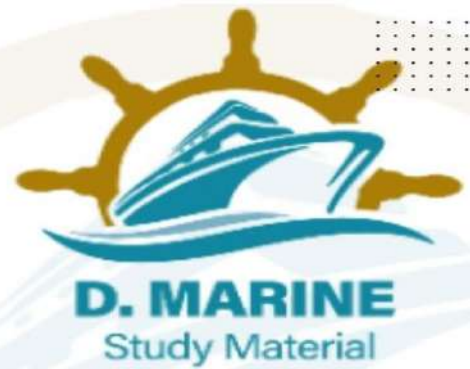
FOR INDIAN COMPETENCY EXAM



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JAN-2021

Q1. With reference to an automatic water sprinkler, fire detecting alarm and extinguishing system for accommodation spaces: -

- A. (i) Sketch a typical system;
- (ii) Describe the operation of this system;
- B. State the sources of water available;
- C. Describe the sprinkler head and its operation;
- D. State how the temperature rating of the sprinkler head is determined.

2020/OCT/Q1 **2021/JAN/Q1**

[Click Here to See the Answer](#)

Q2. Explain the following terms/statements: -

- A. Categories of Noxious liquid substance;
- B. Special Areas as defined in MARPOL 73/78;
- C. Water Ingress Detection and Alarm System in Bulk Carriers;

2021/JAN/Q2

[Click Here to See the Answer](#)

Q3. Name various statutory Certificates and Documents to be carried on board Gas Tankers giving reference to the conventions and justify for their requirement.

2021/JAN/Q3

[Click Here to See the Answer](#)

Q4. Fire protection for the accommodation spaces of passenger vessels incorporates means of detection, fighting and containment to reduce the spread of any fire.

- A. Describe the means of detection and firefighting commonly installed;
- B. State how the spread of fire is prevented and how the containment is used with the firefighting and detection arrangement to locate the fire.

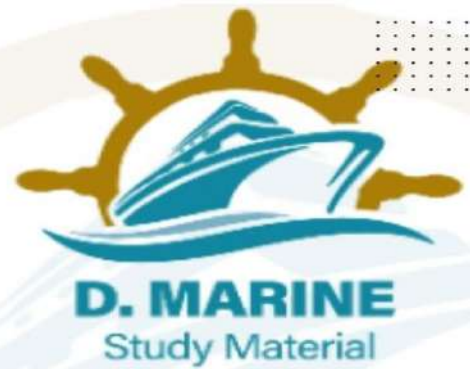
2021/JAN/Q4

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Q5. (a) Discuss International Maritime Organization (IMO) Data Collection System (DCS) for fuel oil consumption of ships covering following:



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- (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).

2021/JAN/Q5

[Click Here to See the Answer](#)

Q6. Give a pragmatic approach to dealing with a sea water leakage, which is flooding the engine room and which has the potential of causing a serious impairment to a vessel's stability.

2020/OCT/Q5 **2021/JAN/Q5** **2021/JAN/Q6**

[Click Here to See the Answer](#)

- Q7. A. Explain the principles underlying the STCW Convention;
B. Explain how as a senior engineer you would implement the regulation for controlling and monitoring of minimum hours of rest for watch keepers;
C. What type of specific shipboard familiarization is required to be given to a seafarer new to a particular type of vessel?

2020/NOV/Q5 **2021/JAN/Q7**

[Click Here to See the Answer](#)

Q8. With reference to a periodically unattended machinery space of a dry cargo vessel discuss the requirements for.

- A. Protection against flooding.
- B. Control of propulsion machinery from the navigating bridge.

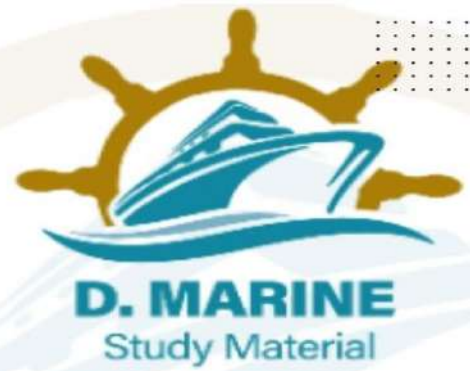
2020/FEB/Q5 **2021/JAN/Q8**

[Click Here to See the Answer](#)

- Q9. With reference to activated fin stabilizers give reasons why:
(a) For large vessels such units are preferred to passive tanks; (6)



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(b) These units are preferred for passenger and fast cargo ships; (6)
(c) Partial rather than maximum damping of ship movement in heavy weather is advisable for reasons other than overstressing of fin stocks and activating gear. (8)

2020/FEB/Q6 **2021/JAN/Q9**

FEB-2021

Q1. A. Explain the principles underlying the STCW Convention;
B. Explain how as a senior engineer you would implement the regulation for controlling and monitoring of minimum hours of rest for watch keepers;
C. What type of specific shipboard familiarization is required to be given to a seafarer new to a particular type of vessel?

2020/NOV/Q5 **2021/JAN/Q7** **2021/FEB/Q1**

[Click Here to See the Answer](#)

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 ship recycling.

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

2021/FEB/Q2

[Click Here to See the Answer](#)

Q3. Explain the principle of port State control and give in detail the verification the Port State Control Officer may carry out with particular reference to the following;

A. Emergency generator; B. Auxiliary steering gear; C. Lifeboat engine; D. Bilge pumps; E. SOPEP.

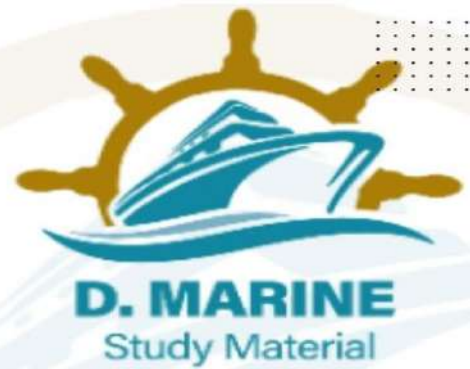
2021/FEB/Q3

[Click Here to See the Answer](#)

Q4. Fire protection for the accommodation spaces of passenger vessels incorporates means of detection, fighting and containment to reduce the spread of any fire.



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- A. Describe the means of detection and firefighting commonly installed;
B. State how the spread of fire is prevented and how the containment is used with the firefighting and detection arrangement to locate the fire.

2021/JAN/Q4 **2021/FEB/Q4**

[Click Here to See the Answer](#)

- Q5. With respect to the hazardous areas of tankers,
A. Explain the term flameproof (Ex d) for electrical equipment;
B. State the type of electrical equipment that would be protected in this way.
C. List likely defects of flameproof equipment.

2020/DEC/Q6 **2021/FEB/Q5**

[Click Here to See the Answer](#)

- Q6. Explain in detail a fixed gas fire extinguisher system, indicating the quantity of the fire-extinguishing medium, the controls required for the system, installation requirements and training required to bring the system to be readily operated. (20)

2020/FEB/Q1 **2020/DEC/Q8** **2021/FEB/Q6**

[Click Here to See the Answer](#)

- Q7. As a second engineer how will you plan to reduce the Energy Efficiency Operating Index of your ship?

2020/MAR/Q2 **2021/FEB/Q7**

[Click Here to See the Answer](#)

- Q8. With reference to a periodically unattended machinery space of a dry cargo vessel discuss the requirements for.

- A. Protection against flooding.
B. Control of propulsion machinery from the navigating bridge.

2020/FEB/Q5 **2021/JAN/Q8** **2021/FEB/Q8**

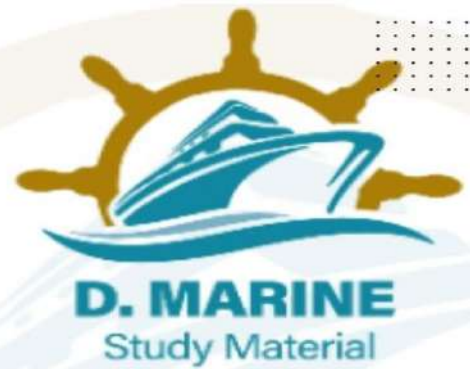
[Click Here to See the Answer](#)

- Q9. With reference to SOLAS Ch-XII (Additional safety measures for bulk carriers);

- A. Damage stability requirements for bulk carriers;



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- B. Structural requirements for bulk carriers;
- C. Water ingress alarm systems.

2020/NOV/Q8 **2021/FEB/Q9**

[Click Here to See the Answer](#)

MARCH-2021

Q1. With reference to a periodically unattended machinery space of a dry cargo vessel discuss the requirements for.

- A. Protection against flooding.
- B. Control of propulsion machinery from the navigating bridge.

2020/FEB/Q5 **2021/JAN/Q8** **2021/FEB/Q8** **2021/MAR/Q1**

[Click Here to See the Answer](#)

Q2. A. State the instructions you as Second Engineer will give to watch keepers with respect to boiler uptake fire;

B. State how the incidence of uptake fires may be minimized.

C. State the reasons for blow-back from the furnace of an auxiliary boiler.

D. State the standing instructions you might have received from your Chief Engineer With respect to the avoidance of boiler furnace blow-back.

2020/OCT/Q3 **2020/DEC/Q9** **2021/MAR/Q2**

[Click Here to See the Answer](#)

Q3. Name various statutory Certificates and Documents to be carried on board Gas Tankers giving reference to the conventions and justify for their requirement.

2021/JAN/Q3 **2021/MAR/Q3**

[Click Here to See the Answer](#)

Q4. (a) Sketch a line diagram of a mechanical low expansion foam fixed firefighting system suitable for machinery spaces.

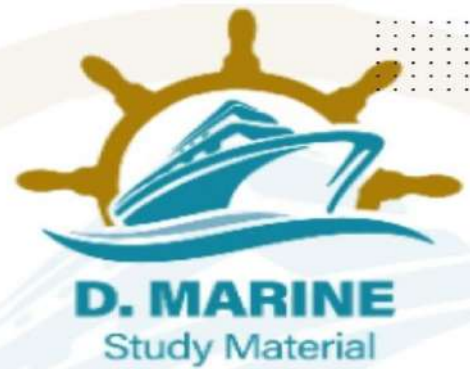
(b) Describe the operation of the system sketched.

(c) Explain how a mixture of foam making compound and sea water are converted into foam.

2021/MAR/Q4



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Q5. Describe the background, relevance, and key features of the international convention on civil liability for Bunker Oil Pollution Damage, 2001.

2021/MAR/Q5

[Click Here to See the Answer](#)

Q6. Explain the following terms/statements: -

A. Categories of Noxious liquid substance;

B. Special Areas as defined in MARPOL 73/78;

C. Water Ingress Detection and Alarm System in Bulk Carriers;

2021/JAN/Q2 **2021/MAR/Q6**

[Click Here to See the Answer](#)

Q7. As a second engineer how will you plan to reduce the Energy Efficiency Operating Index of your ship?

2020/MAR/Q2 **2021/FEB/Q7** **2021/MAR/Q7**

[Click Here to See the Answer](#)

Q8. (a) Discuss International Maritime Organization (IMO) Data Collection System (DCS) for fuel oil consumption of ships covering following:

(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).

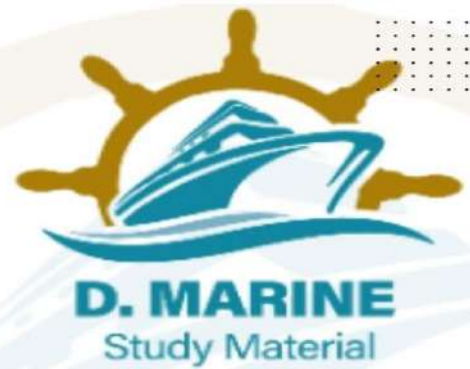
2021/JAN/Q5 **2021/MAR/Q8**

[Click Here to See the Answer](#)

Q9. Under the new global limit, Ships using fuel oil on board with a sulphur content of no more than 0.50% m/m.



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(a). List the challenges likely to be faced onboard in using fuel with a Sulphur content of no more than 0.50% m/m.

(b). What are the options in case a vessel is unable to get compliant fuel.

2021/MAR/Q9

[Click Here to See the Answer](#)

APRIL-2021

Q1. Explain the following terms/statement:

A. SEEMP.

B. Special Areas as defines in MARPOL 73/78.

C. EEDI

D.EEOI

2021/APR/Q1

[Click Here to See the Answer](#)

Q2. With reference to an automatic water sprinkler, fire detecting alarm and extinguishing system for accommodation spaces: -

A. (i) Sketch a typical system;

(ii) Describe the operation of this system;

B. State the sources of water available;

C. Describe the sprinkler head and its operation;

D. State how the temperature rating of the sprinkler head is determined.

2020/OCT/Q1 **2021/JAN/Q1** **2021/APR/Q2**

[Click Here to See the Answer](#)

Q3. With reference to the Maritime Labour Convention (MLC) 2006, discuss the requirements for seafarers regarding: -

A. Minimum age to work onboard vessels,

B. Seafarer's Employment agreements

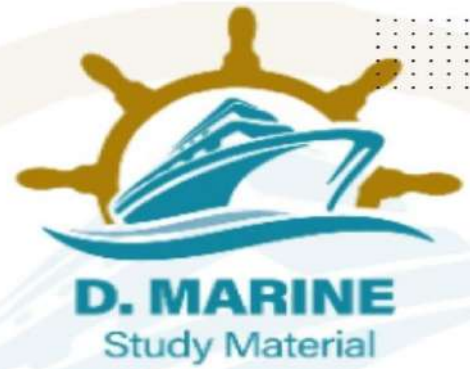
C. Hours of work and hours of rest.

2020/MAR/Q5 **2020/DEC/Q5** **2021/APR/Q3**

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Q4. With reference to free fall life boat of an ocean-going ships, explain following:

- A. Periodical maintenance, tests and checks on life boat and releasing gear.
- B. Secondary means of lowering.
- C. Lifeboat Drills.

2020/OCT/Q8 **2020/DEC/Q2** **2021/APR/Q4**

[Click Here to See the Answer](#)

Q5. Give a pragmatic approach to dealing with a sea water leakage, which is flooding the engine room and which has the potential of causing a serious impairment to a vessels stability.

2020/OCT/Q5 **2021/JAN/Q5** **2021/JAN/Q6** **2021/APR/Q5**

[Click Here to See the Answer](#)

Q6. With reference to a bank of emergency lead acid batteries:

- A. State the conditions of the battery bank if the specific gravity of a number of cells in the bank is in the region of 1.11 with an ambient temperature of 160Celcius;
- B. Describe a systematic procedure for checking the conditions of the battery bank if it is divided into section for charging;
- C. Describe the necessary routine maintenance;
- D. Describe how capacity test carried out on bank of Batteries.

2021/APR/Q6

[Click Here to See the Answer](#)

Q7. With respect to the hazardous areas of tankers,

- A. Explain the term flameproof (Ex d) for electrical equipment;
- B. State the type of electrical equipment that would be protected in this way.
- C. List likely defects of flameproof equipment.

2020/DEC/Q6 **2021/FEB/Q5** **2021/APR/Q7**

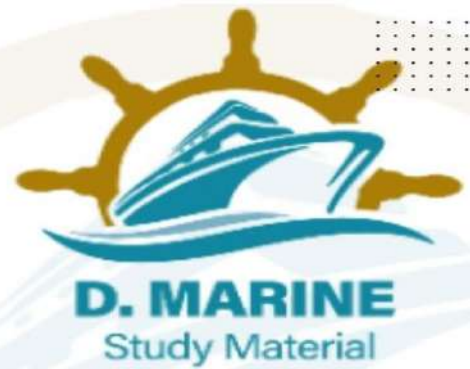
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Q8. Briefly discuss the following with respect to safety of navigation:

- A. Bridge Navigation Watchkeeping Alarm System (BNWAS)
- B. Long Range Identification and Tracking of ships (LRIT)



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C. Voyage Simplified Voyage Recorder (VDR/S-VDR)

2021/APR/Q8

[Click Here to See the Answer](#)

Q9. As Second Engineer of a new ship:

A. Prepare standing orders for all future bunkering operations;

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

C. State how a representative sample is obtained.

2020/NOV/Q9 **2021/APR/Q9**

[Click Here to See the Answer](#)

JULY-2021

Q1. A vessel 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 2nd Engineer officer of above mentioned vessel, what all checks you carry out and how you prepare for the IOPP renewal survey.

B. What records, procedures, certificates etc., you will keep ready for attending surveyor verification.

2021/JUL/Q1(M)

[Click Here to See the Answer](#)

Q2. With reference to free fall life boat of an ocean-going ships, explain following:

A. Periodical maintenance, tests and checks on life boat and releasing gear.

B. Secondary means of lowering.

C. Lifeboat Drills.

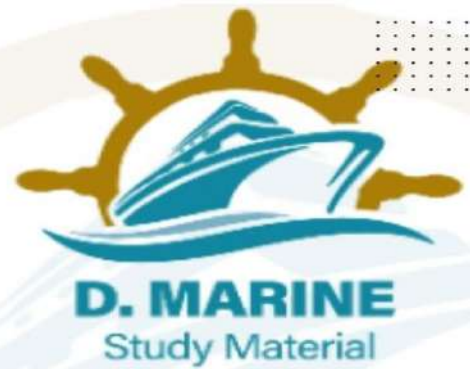
2020/OCT/Q8 **2020/DEC/Q2** **2021/APR/Q4** **2021/APR/Q2**

2021/JUL/Q2(M)

[Click Here to See the Answer](#)



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Q3. Give a pragmatic approach to dealing with a sea water leakage, which is flooding the engine room and which has the potential of causing a serious impairment to a vessels stability.

2020/OCT/Q5 2021/JAN/Q5 2021/JAN/Q6 2021/APR/Q5
2021/JULY/Q4 2021/JUL/Q3(M)

[Click Here to See the Answer](#)

Q4. In engine rooms that are operated under UMS conditions describe with the aid of sketches how the following are monitored:

- A. The perforation of a high-pressure fuel pipe;
- B. The imminence or possibility of a scavenge fire;
- C. Condition that may be conducive to a crankcase explosion

2021/JUL/Q4(M)

[Click Here to See the Answer](#)

Q5. With reference to SOLAS Ch-XII (Additional safety measures for bulk carriers);

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

2020/NOV/Q8 2021/FEB/Q9 2021/JUL/Q9 2021/JUL/Q5(M)

[Click Here to See the Answer](#)

Q6. With reference to an automatic water sprinkler, fire detecting alarm and extinguishing system for accommodation spaces: -

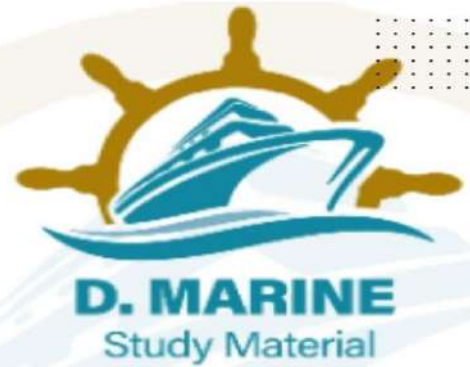
- A. (i) Sketch a typical system;
- (ii) Describe the operation of this system;
- B. State the sources of water available;
- C. Describe the sprinkler head and its operation;
- D. State how the temperature rating of the sprinkler head is determined.

2020/OCT/Q1 2021/JAN/Q1 2021/APR/Q2 2021/JUL/Q2
2021/JUL/Q6(M)

[Click Here to See the Answer](#)



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Q7. Your ship entering SECA zone, you have changed over from high sulphur to low sulphur fuel oil. On arrival Port State authority boarded your vessel and took sample and proved you have violated the relevant regulations of MARPOL regarding sulphur limits as prescribed. Write a statement, stating what are the possibilities of in correct change over process or incorrect sampling process.

2021/JUL/Q7(M)

[Click Here to See the Answer](#)

Q8. With reference to MARPOL Annex IV

A. Draw a biological sewage treatment plant and explain the principal of operation

B. Periodical maintenance and checks and tests required to be done to verify the effectiveness of the above system

2021/JUL/Q8(M)

[Click Here to See the Answer](#)

Q9. With respect to the hazardous areas of tankers,

A. Explain the term flameproof (Ex d) for electrical equipment;

B. State the type of electrical equipment that would be protected in this way.

C. List likely defects of flameproof equipment.

2020/DEC/Q6 **2021/FEB/Q5** **2021/APR/Q7** **2021/APR/Q6**

2021/JUL/Q9(M)

[Click Here to See the Answer](#)

AUG-2021

Q1. A. A hydraulically operated ballast tank valve situated in the duct keel has failed to close. State as Second Engineer your procedure for directing safe entry by engine room staff to the duct keel to ascertain the cause and possibility to carry out a repair.

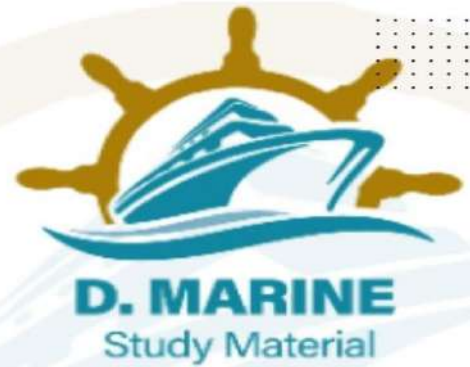
B. State if any procedure is to be followed before making an entry, and the relevant IMO code under which such procedure is required

2021/AUG/Q1

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Q2. A vessel 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 2nd Engineer officer of above mentioned vessel, what all checks you carry out and how you prepare for the IOPP renewal survey.

B. What records, procedures, certificates etc., you will keep ready for attending surveyor verification.

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

[Click Here to See the Answer](#)

Q3. A. Sketch and describe a vacuum sewage system;

B. List the advantages of the system described in Q3(a).

C. State why untreated sewage should not be allowed to stagnate.

2021/AUG/Q3

[Click Here to See the Answer](#)

Q4. Give a pragmatic approach to dealing with a sea water leakage, which is flooding the engine room and which has the potential of causing a serious impairment to a vessels stability.

2020/OCT/Q5 **2021/JAN/Q5** **2021/JAN/Q6** **2021/APR/Q5**

2021/JULY/Q4 **2021/JUL/Q3(M)** **2021/AUG/Q4**

[Click Here to See the Answer](#)

Q5. A. Briefly describe the environmental impact of NO_x and SO_x and allowable limitations are per Annex VI of MARPOL in emission control areas and outside emission control areas.

B. Briefly describe methods to control NO_x emission.

2021/APR/Q7 **2021/AUG/Q5**

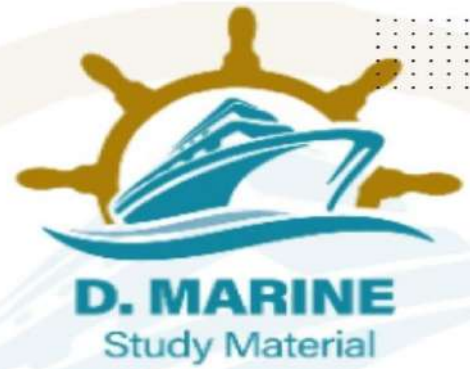
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Q6. With reference to structural fire protection in passenger ship accommodation spaces:

(a) Define the meaning of class A bulkheads, stating requirements:



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(b) discuss the design of ventilation systems to prevent the spread of smoke and fire;

(c) explain how the integrity of the bulkhead is retained with respect to ventilation trunkings, where A class bulkheads have to be penetrated.

2021/AUG/Q6

[Click Here to See the Answer](#)

Q7. A. (i) discuss the various hazards and problems which are associated with electric cable insulation in the event of fire;

(ii) Suggest remedies for these problems.

B. State how the spread of fire may be reduced by the method used for installing electric cables.

2020/DEC/Q1 2021/APR/Q1 2021/AUG/Q7

[Click Here to See the Answer](#)

Q8. With reference to oil discharge monitoring of bilges and slopes from an oil tanker:

(a) Describe with the aid of a sketch, the general arrangement of an oil discharge monitoring and control system,

(b) State the inputs that are recorded,

(c) Explain the difficulties encountered with the efficient operation of the oil monitoring system.

2021/AUG/Q8

[Click Here to See the Answer](#)

Q9. Under the new global limit, Ships using fuel oil on board with a sulphur content of no more than 0.50% m/m.

(a). List the challenges likely to be faced onboard in using fuel with a Sulphur content of no more than 0.50% m/m.

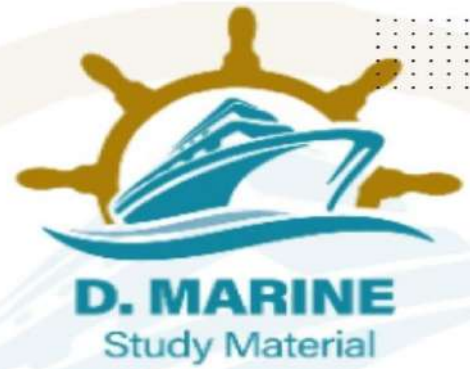
(b). What are the options in case a vessel is unable to get compliant fuel.

2021/MAR/Q9 2021/AUG/Q9

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SEP-2021

Q1. 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.

2020/MAR/Q7 2020/OCT/Q4 2020/DEC/Q4 2021/APR/Q4
2021/JUL/Q5 2021/SEP/Q1

[Click Here to See the Answer](#)

Q2. 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 2nd Engineer officer of above-mentioned vessel, what all checks you carry out and how you prepare for the IOPP renewal survey.

B. What records, procedures, certificates etc., you will keep ready for attending surveyor verification.

2021/JUL(M)/Q1 2021/AUG/Q2 2021/SEP/Q2

[Click Here to See the Answer](#)

Q3. With respect to Exhaust Gas Boiler and Auxiliary boiler on-board ships answer the following:

A. State the instructions you as Second Engineer will give to watch keepers with respect to boiler uptake fire;

B. State how the incidence of uptake fires may be minimized.

C. State the reasons for blow-back from the furnace of an auxiliary boiler.

D. State the standing instructions you might have received from your Chief Engineer With respect to the avoidance of boiler furnace blow-back.

2020/OCT/Q3 2020/DEC/Q9 2021/MAR/Q2 2021/APR/Q9
2021/SEP/Q3

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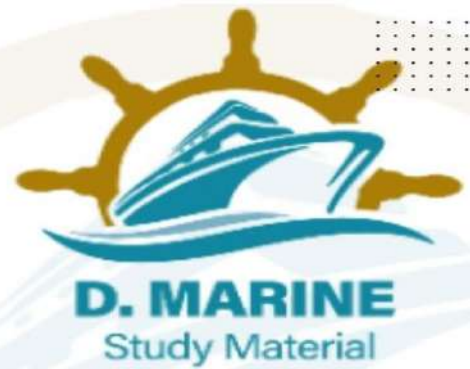
Q4. In engine rooms that are operated under UMS conditions describe with the aid of sketches how the following are monitored:

A. The perforation of a high-pressure fuel pipe;

B. The imminence or possibility of a scavenge fire;



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C. Condition that may be conducive to a crankcase explosion

2021/JUL/Q4 **2021/SEP/Q4**

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Q5. With reference to automatic sprinkler systems for fire fighting purpose:

(a) Explain, with the aid of a Heat Release versus Time diagram, the difference between fire control and fire suppression;

(b) State the limitations of using glass bulbs to activate sprinkler heads and suggest with reasons, an alternative mechanism.

2021/SEP/Q5

[Click Here to See the Answer](#)

Q6. With reference to SOLAS Ch-XII (Additional safety measures for bulk carriers);

A. Damage stability requirements for bulk carriers;

B. Structural requirements for bulk carriers;

C. Water ingress alarms.

2020/NOV/Q8 **2021/FEB/Q9** **2021/JUL/Q9** **2021/JUL/Q5(M)**

2021/SEP/Q6

[Click Here to See the Answer](#)

Q7. Explain in detail a fixed gas fire extinguisher system, indicating the quantity of the fire-extinguishing medium, the controls required for the system, installation requirements and training required to bring the system to be readily operated.

2020/FEB/Q1 **2020/DEC/Q8** **2021/FEB/Q6** **2021/SEP/Q7**

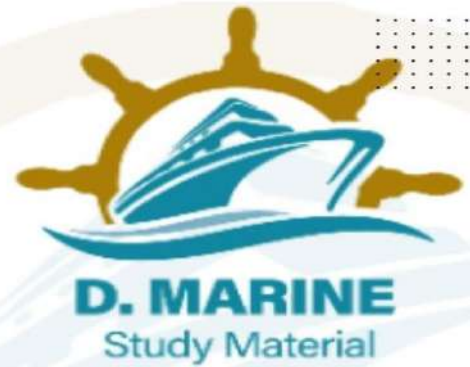
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Q8. Your ship entering SECA zone, you have changed over from high sulphur to low sulphur fuel oil. On arrival Port State authority boarded your vessel and took sample and proved you have violated the relevant regulations of MARPOL regarding sulphur limits as prescribed. Write a statement, stating what the possibilities of are in correct change over process or incorrect sampling process.

2021/JUL/Q7 **2021/SEP/Q8**



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[Click Here to See the Answer](#)

- Q9. A. Sketch and describe a vacuum sewage system;
B. List the advantages of the system described in Q9(a).
C. State why untreated sewage should not be allowed to stagnate.

2021/AUG/Q1 2021/SEP/Q9

[Click Here to See the Answer](#)

OCT-2021

- Q1. 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.

2020/MAR/Q7 2020/OCT/Q4 2020/DEC/Q4 2021/APR/Q4

2021/JUL/Q5 2021/SEP/Q1 2021/OCT/Q1

[Click Here to See the Answer](#)

- Q2. (a) Describe with the aid of sketch the release arrangement for a machinery space fixed firefighting installation using CO₂. State in your answer any special need for rapid delivery of the gas and the time permitted for discharge.

(b) Explain precaution to be taken prior release of CO₂.

(c) Explain the reason for securing the CO₂ bottles, and what checks are carried out with respect to securing for smooth operation of the system.

2020/NOV/Q1 2021/JUL/Q3 2021/OCT/Q2

[Click Here to See the Answer](#)

- Q3. (a) Describe the operating mechanism for a watertight door, which has provision for remote closure from the bridge and local operation.

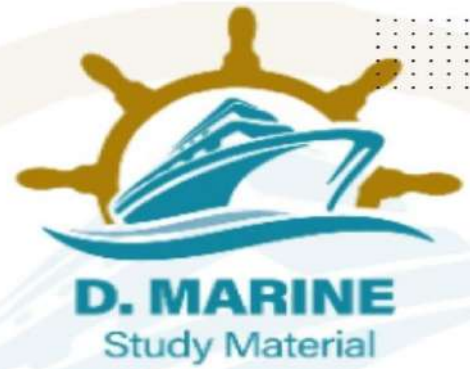
(b) State the source of power for closure of electrical and the source of power for alarm and indicator.

2020/NOV/Q3 2021/OCT/Q3

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Q4. With reference to free fall life boat of an ocean-going ships, explain following:

- A. Periodical maintenance, tests and checks on life boat and releasing gear.
- B. Secondary means of lowering.
- C. Drills.

2020/OCT/Q8 2020/DEC/Q2 2021/APR/Q4 2021/APR/Q2
2021/JUL/Q2 2021/OCT/Q4

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Q5. With reference to the SOLAS 1974 Convention as amended, 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;
- B. Describe the emergency steering drills that must take place at least once every, 3 months;
- 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.

2020/NOV/Q6 2021/JUL/Q8 2021/OCT/Q5

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Q6. A. Sketch a circuit that may be incorporated in a control panel for an array of fire detectors. Describe, Audible fire alarm circuits, Identification, of zone of fire and Automatic change over from normal power supply.

2020/OCT/Q6 2021/JUL/Q6 2021/OCT/Q6

[Click Here to See the Answer](#)

Q7. With regard to ballast water Management Convention, Explain following :

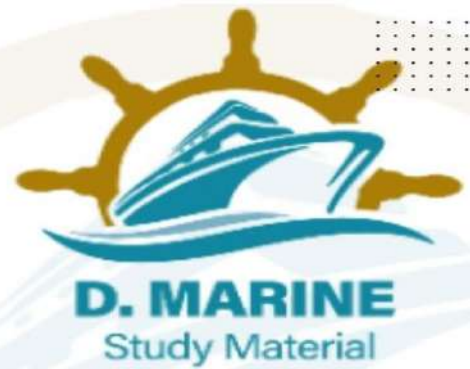
- (a) Ballast water exchange standard
- (b) Ballast water Performance standard
- (c) Treatment methods for ballast water
- (d) Approval methods for treatment system using active and non-active substances

2021/OCT/Q7

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Q8. With reference to SOLAS Ch-XII (Additional safety measures for bulk carriers);

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

2020/NOV/Q8 2021/FEB/Q9 2021/JUL/Q9 2021/JUL/Q5(M)

2021/SEP/Q6 2021/OCT/Q8

[Click Here to See the Answer](#)

Q9. A) As Second Engineer of a new ship, prepare standing orders for all future bunkering operations;

- B. State why it is very important to obtain a representative sample of heavy fuel bunkers taken and explain how a representative sample is obtained

C. What information is provided in bunker Delivery note (BDN).

2020/NOV/Q9 2021/APR/Q9 2021/OCT/Q9

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NOV-2021

Q1. Explain in detail a fixed gas fire extinguisher system, indicating the quantity of the fire-extinguishing medium, the controls required for the system, installation requirements and training required to bring the system to be readily operated.

2020/FEB/Q1 2020/DEC/Q8 2021/FEB/Q6 2021/SEP/Q7

2021/NOV/Q1

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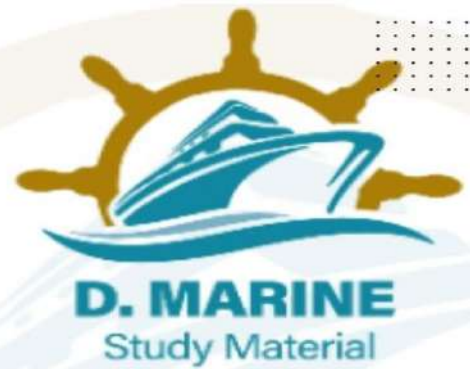
Q2. A. Briefly describe the environmental impact of NO_x and SO_x and allowable limitations are per Annex VI of MARPOL in emission control areas and outside emission control areas.

B. Briefly describe methods to control NO_x emission.

2021/APR/Q7 2021/AUG/Q5 2021/NOV/Q2



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Q3. With reference to oil discharge monitoring of bilges and slopes from an oil tanker:

- (a) Describe with the aid of a sketch, the general arrangement of an oil discharge monitoring and control system,
- (b) State the inputs that are recorded,
- (c) Explain the difficulties encountered with the efficient operation of the oil monitoring system.

2021/AUG/Q8 **2021/NOV/Q3**

[Click Here to See the Answer](#)

Q4. Describe the background, relevance, and key features of the International convention on civil liability for Bunker Oil Pollution Damage, 2001.

2021/MAR/Q5 **2021/NOV/Q4**

[Click Here to See the Answer](#)

Q5. With reference to a periodically unattended machinery space of a dry cargo vessel discuss the requirements for.

A. Protection against flooding.

B. Control of propulsion machinery from the navigating bridge.

2020/FEB/Q5 **2021/JAN/Q8** **2021/FEB/Q8** **2021/MAR/Q1**

2021/NOV/Q5

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Q6. With reference to activated fin stabilizers give reasons why:

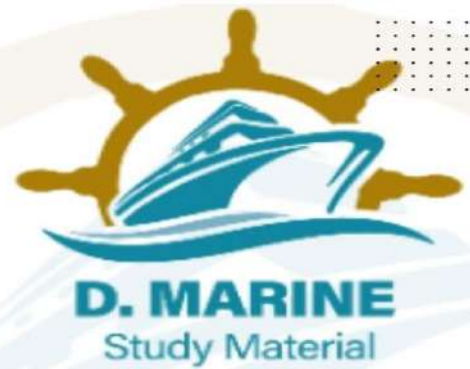
- (a) For large vessels such units are preferred to passive tanks; (6)
- (b) These units are preferred for passenger and fast cargo ships; (6)
- (c) Partial rather than maximum damping of ship movement in heavy weather is advisable for reasons other than overstressing of fin stocks and activating gear. (8)

2020/FEB/Q6 **2021/JAN/Q9** **2021/NOV/Q6**

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Q7. Explain the principle of port State control and give in detail the verification the State control Officer may carry out with particular reference to the following:

- A. Emergency generator;
- B. Main switchboard;
- C. Lifeboat;
- D. Oily water separator;
- E. Navigational lighting.

2020/FEB/Q7 **2021/NOV/Q7**

[Click Here to See the Answer](#)

Q8. 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/Q2 **2021/NOV/Q8**

[Click Here to See the Answer](#)

Q9. With reference to structural fire protection in passenger ship accommodation spaces:

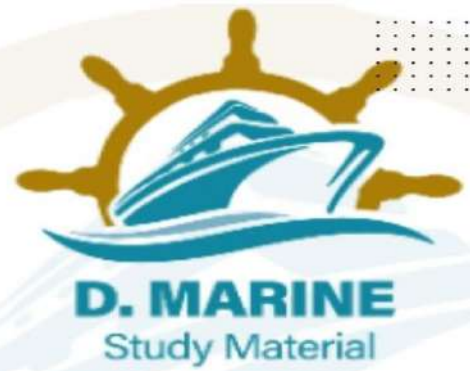
- (a) Define the meaning of class A bulkheads, stating requirements;
- (b) discuss the design of ventilation systems to prevent the spread of smoke and fire;
- (c) explain how the integrity of the bulkhead is retained with respect to ventilation trunkings, where A class bulkheads have to be penetrated.

2021/AUG/Q6 **2021/NOV/Q9**

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DEC-2021

Q1. A vessel is due for Safety Equipment (SEQ) Certificate 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 Safety Equipment (SEQ) Certificate renewal survey.

(b) What equipment, records, certificate etc., you will keep ready for attending surveyor verification

2021/DEC/Q1

[Click Here to See the Answer](#)

Q2. (a) Describe the immediate action that the Engineer Officer of the watch should take in the event of the engine room bilge rising faster than can be contained by the bilge pump.

(b) State the features provided in the engine room pumping systems to deal with the situation in Q2(a)

2021/DEC/Q2

[Click Here to See the Answer](#)

Q3. With reference to free fall life boat of an ocean-going ships, explain following:

A. Periodical maintenance, tests and checks on life boat and releasing gear.

B. Secondary means of lowering.

C. Lifeboat Drills.

2020/OCT/Q8 **2020/DEC/Q2** **2021/APR/Q4** **2021/APR/Q2**

2021/JUL/Q2 **2021/OCT/Q4** **2021/DEC/Q3**

[Click Here to See the Answer](#)

Q4. In engine rooms that are operated under UMS conditions describe with the aid of sketches how the following are monitored:

A. The perforation of a high-pressure fuel pipe;

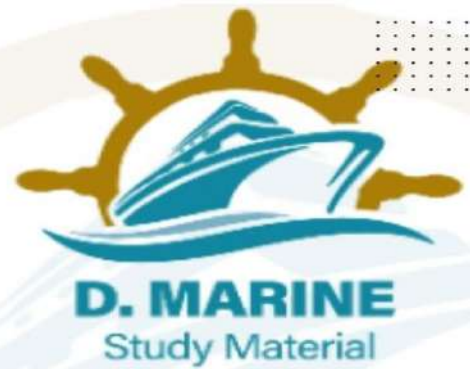
B. The imminence or possibility of a scavenge fire;

C. Condition that may be conducive to a crankcase explosion

2021/JUL/Q4 **2021/SEP/Q4** **2021/DEC/Q4**



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Q5. With reference to SOLAS Ch-XII (Additional safety measures for bulk carriers);

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

2020/NOV/Q8 2021/FEB/Q9 2021/JUL/Q9 2021/JUL/Q5(M)
2021/SEP/Q6 2021/OCT/Q8 2021/DEC/Q5

[Click Here to See the Answer](#)

Q6. With reference to an automatic water sprinkler, fire detecting alarm and extinguishing system for accommodation spaces: -

- A. (i) Sketch a typical system;
- (ii) Describe the operation of this system;
- B. State the sources of water available;
- C. Describe the sprinkler head and its operation;
- D. State how the temperature rating of the sprinkler head is determined.

2020/OCT/Q1 2021/JAN/Q1 2021/APR/Q2 2021/JUL/Q2
2021/JUL/Q6(M) 2021/DEC/Q6

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Q7. Under the new global limit, Ships using fuel oil on board with a sulphur content of no more than 0.50% m/m.

- (a). List the challenges likely to be faced onboard in using fuel with a Sulphur content of no more than 0.50% m/m.
- (b). What are the options in case a vessel is unable to get compliant fuel.

2021/MAR/Q9 2021/AUG/Q9 2021/DEC/Q7

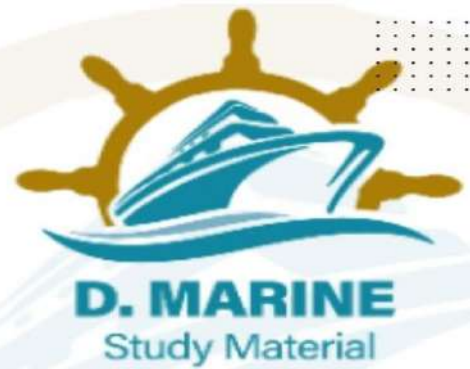
[Click Here to See the Answer](#)

Q8. A. State the instructions you as Second Engineer will give to watch keepers with respect to boiler uptake fire;

- B. State how the incidence of uptake fires may be minimized.
- C. State the reasons for blow-back from the furnace of an auxiliary boiler.



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D. State the standing instructions you might have received from your Chief Engineer With respect to the avoidance of boiler furnace blow-back.

2020/OCT/Q3 2020/DEC/Q9 2021/MAR/Q2 2021/APR/Q9

2021/SEP/Q3 2021/DEC/Q8

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Q9. With reference to structural fire protection in passenger ship accommodation spaces:

- (a) Define the meaning of class A bulkheads, stating requirements:
- (b) discuss the design of ventilation systems to prevent the spread of smoke and fire;
- (c) explain how the integrity of the bulkhead is retained with respect to ventilation trunkings, where A class bulkheads have to be penetrated.

2021/AUG/Q6 2021/NOV/Q9 2021/DEC/Q9

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