

Question Bank MEO CL-I

Sr. No	Questions
1	During bunkering of a ship at a foreign port, a substantial amount of oil spillage in water has taken place. Draw an emergency preparedness plan for such incidents and how best it could be encountered under the situation.
2	With reference to “emergency preparedness”, discuss (i) Search and Rescue (ii) Evacuation of critically injured personnel (iii) Helicopter operations (iv) Rescue from enclosed spaces (v) Abandon ship.
3	The vessel where you are posted as Chief Engineer is undergoing dry-docking and a serious fire occurs on the deck because of welding work. Illustrate the documented procedures to deal with such emergency and its advantage over non documented actions ? Explain the different ship related contingencies against which document procedures are maintained under emergency preparedness of ISM Codes. In case of a major pollution of oil from a ship how best the contingency plans in emergency preparedness help over other actions.(Oct-05)
4	Explain “Port State Control” (PSC) Inspection. Underline its authority for exercising and the basis of such inspections. Enumerate the relevant regulations article and annexes of SOLAS 74, LOAD LINES 66, MARPOL 73/78, STCW 78 and TONNAGE 69, which forms the provisions for PSC.
5	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 Regulation. What will be the criteria for evaluating competence for onboard training by a Chief Engineer ?
6	Detail the inspection that you as the new Chief Engineer of a passenger ship, would make on joining the ship with regard to (i) Stability (ii) Damage control (iii) Fire fighting (iv) Critical Machinery.
7	Stress is one of the factor effecting the performance of an individual. What are the primary strategies for coping with stress affected personnel ? How these elements can be best implemented in ships personnel motivating them for better team work ?
8	Socio- Cultural differences have been an accepted fact in major merchant ships around the globe. Explain how such differences generate inter personal conflict and affect safety management. How they can be resolved on board?
9	Give a brief background of ILO, its inception and its fields of mandate for Maritime Labour Development. Name three-conventions/ protocol of ILO concerning maritime labour, which has come in force in 1996.
10	List the amendments to the existing Conventions of IMO to come into force in the year 2005. Briefly describe the amendments. What changes are likely to be foreseen on ship operation worldwide on implementation of these amendments?

11	List the methods and aids to prevent pollution of the environment by ships under IMO Conventions and steps you can take for its successful implementation on a ship prior its voyage, where you have joined as Chief Engineer.
12	What is a general average act? Name the essential features of a general average act.
13	Differentiate between official logbook, deck and engine room log books. Highlight their salient features and difference. Also enlist the number of documents, which are handed over by relieved Chief Engineer during signing off from a vessel.
14	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.
15	A ship on which you have joined as Chief Engineer is scheduled to be put in active service after major lay-up and necessary repairs. State, the preparation and trials you would conduct prior offering the ship to the surveying authorities for survey and inspection.
16	Discuss the contribution of the following factors on ship in identification of proper training for a specific task performed (i) Internal Audits (ii) Emergency drills (iii) Previous training and experience (iv) Familiarization with new equipment.
17	A successful voyage for Chief Engineer is a combination of trouble free run of machineries, optimum use of fuel, minimum interpersonal conflicts and less intervention from shore authorities, Considering the ship as an Organization, give in detail how can this be best achieved.
18	Your vessel where you are posted as Chief Engineer is about to enter a dry dock. State the coordination and exchange of information necessary with the Master of the vessel for entering the dock. Also, list the necessary preparations required along with the delegation of responsibilities to the engineers of the vessel. Enlist the inspections and co-operations you will make with the dry dock authorities for undocking of the vessel.
19	For an ISM certification, explain the key clauses, which are needed to be complied with? State the factors and commitment from a Chief Engineer and company to have SMS implemented successfully on board ship.
20	Explain the key features of the United Nations Convention On The Law of The Sea? Enumerate the various areas covered under this convention?
21	State the elements of strategies needed for improving performance from a team of engine room personnel looked upon as an Organization? Underline the steps taken to reduce mutual conflict and clarify their role / responsibility?
22	Illustrate ship repair management and its objectives. List the services under ship repair management and highlight the same with (i) Assessment of ship repair quotations (ii) Supervision during repairs (Coordination with classification society and flag Administration (iv) Necessary trials and testing (v) Full report on actual repairs effected for record purposes.
23	State the action, which will be taken by the Administration / Classification society towards handling of an ISM certificate in case; (a) When a major non-conformity is observed. (b) When corrective action has been taken to the non-conformities raised during external audit, within the time period. (c) What circumstances may lead to withdrawal of SMC / DOC (d) When a newly formed shipping company requests for interim DOC certificate.

24	Piracy and terrorism is a fearsome situation for shipboard personnel and frequent in present shipping activities. As a Chief Engineer onboard and as a member of SMS implementation team, draw an emergency preparedness plan to encounter such situations involving ships personnel. What measures shipboard personnel can take under contingency plan while the vessel is (i) in a port (ii) at sea?
25	(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, as per the provision stated in the Protocol of 1998 relating to the International Convention for the Safety of Life at Sea, 1974.
26	Classification societies are Recognised Institutions (RO) and play an important role in implementation of national and international regulations. State the limitations of the RO highlighting them with reasons. List the statutory services undertaken by a classification body on behalf of Administration
27	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 the specific data and formulate a chart for condition monitoring. Highlight the tools in computer application you will use for making graphical representation, salient points and trend analysis.
28	Explain the associated key factors and activities to ensure successful Planned Maintenance programme onboard ships under ISM Codes with the following terms (i) Corrective action process (ii) Developing and improving maintenance procedures (iii) Systematic approach to maintenance (iv) Maintenance intervals (v) Inspections
29	With reference to record keeping onboard, discuss (i) the necessity of proper filing (ii) efficient control of follow up and verification activities (iii) accident/incident investigation. Describe a situation onboard, which will highlight the importance of record keeping of above three cases.
30	STCW 95 has laid down minimum requirements for familiarization, basic safety training and instruction to all seafarers. Underline the importance of the role of Chief Engineer of a ship in enforcing these elements of STCW training.
31	As per MARPOL Annex VI 73/78, which came into force from 19 May, 2005, all bunker suppliers are required to be registered with the Administration and bunker supply is to be received from the registered bunker supplier only. Enumerate the salient features and the requirements set out in Regulation 14 and 18 of MARPOL Annex VI and the responsibilities of Chief Engineer with respect to retaining of bunker sample.

32	<p>Explain the following maritime term:</p> <p>(a) Charter Party (b) Freight (c) Bare Boat Charter (d) Bill of Lading (e) Lay Time, Demurrage and Off-Hire.</p>
33	<p>What are the essential features of the ISPS Code? What are the duties and responsibilities of a Chief Engineer with respect to the Code and particularly what action you will take to familiarise newly inducted crew of different nationality employed on board ship.</p>
34	<p>You are required to send a Voyage abstract to the head office containing all salient data as per regulatory feature. For making the spreadsheet, underline the specific computer application tools you will use and formulate a format for the abstract, which will show the salient data within available format of software to the best advantage. Use realistic data.</p>
35	<p>You are to formulate a Quality Inventory Management Plan for old ship's stores / spares, where you have joined as Chief Engineer. Describe the procedure you will adopt and the key issues you will address for successful completion of the assignment within a targeted date.</p>
36	<p>"If Flag State Implementation is carried out effectively; Port State Control may not be required". Give your comments on the above statement.</p>
37	<p>(a) What are the essential elements of preventive maintenance on board ships? (b) Analyze the link between statutory and classification survey of ship machinery and equipment with respect to routine maintenance and how it is effectively merged in ship's safety management system under the ISM Code.</p>
38	<p>(a) For the safety, welfare and working condition of seafarer on board ship, enumerate the various ILO/ IMO regulations. (b) As Chief Engineer Officer how will you motivate good inter personnel relationships and team work</p>
39	<p>An Indian flag vessel collided with another vessel off the coast of India, as a result few lives were also lost and vessel damaged. 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 ships and the marine environment.</p>
40	<p>(a) Define the meaning of the term "Conditions of Assignment" as applied to ships for Load Line Survey. (b) State how conditions of assignment contribute towards water tight integrity of ships (c) Give reasons why conditions of assignment need periodic inspection, giving specific instances where they can be found to be less than fully effective.</p>
41	<p>State the responsibilities and liabilities, under the Hague-Visby Rules of:</p> <p>(a) The Shipper (b) The Shipowners and explain the difference between the Hague rules and Hague- Visby Rule</p>

42	(a) During a port State control inspection, the port State control officer (PSCO) desired to carry out detailed inspection of the vessel. What are clear grounds for a PSCO to conduct a more detailed inspection? State your answer with examples. (b) What is the difference between ‘ corrective action’ and ‘preventive action’.
43	With reference to marine insurance , write short notes on the following: (a) Port of refuge (b) Particular average and General average (c) Total loss and Constructive loss
44	List the IMO Conventions and guidelines dealing with marine environment protection. State how each of the Convention contributes to the protection of the marine environment.
45	Briefly explain the objectives of planned preventive maintenance. Indicate the areas where planned preventive maintenance can be applied effectively on ships. How is the work planning and scheduling carried out.
46	Differentiate between “third party liability” and “contractual liability”. When may the shipowner seek to limit his liability? , Lists the persons entitled to limit liability and the claims exempted from limitation.
47	Explain the following: (a) Charter Party (b) Laytime (c) Bills of lading (d) Off hire clause (e) Contract of affreightment
48	(a) What are P & I clubs. Describe how P & I clubs collect fund from shipowners. (b) What are the risk that are covered under the term “ protection” and “indemnity”.
49	State the requirement and responsibility of the office in enforcing “emergency preparedness” procedures for a ship and its personnel, as required under ISM Codes ? Describe the duties of the office in (i) Formation of the emergency team (ii) During emergency situations (iii) Maintaining contact between ship and office .
50	With reference to port State control enumerate on the following (i) Regional cooperation/ agreements. (ii) Future of port State control. (iii) Is port State control an effective tool for ship safety?
51	Develop a training programme for activities of a vessel, where you have joined recently as a Chief Engineer highlighting the specific training needs for engine room personnel in case of (i) use of life saving appliances (ii) fire in accommodation (iii) explosion in engine room, when the ship is in dry dock..
52	Illustrate the provision kept towards establishing procedures to identify and testing of “critical” equipments under ISM Codes. How the list of critical equipment and systems are made and on what factors they are dependent.

53	Suggest with reasons, why each of the following courses of action are appropriate if a ship operating in heavy seas : (a) frequently sound all hold bilges (b) frequently sound bilges in chain locker, fore and aft. peak tanks, cofferdams and other void spaces (c) sound all fuel, fresh water and ballast tanks (d) if satisfied with (a), (b) and (c) trim ship by the stern and correct any list (e) reduce speed of the main engine .
54	As Chief Engineer on board 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?
55	State Maritime Declaration of Health and the requirements of International Health Regulations for persons employed on board ship. State the steps taken by you as Chief Engineer on board. for an Engine Room personnel suffering from a contagious disease while on a voyage.
56	Why does a ship require Marine Insurance cover. Explain Hull Claims and Cargo Claims related with Marine Insurance. State the related documents and information required from the ship in this regard highlighting their validity.
57	Differentiate between Rules, Regulations, Protocol, Act, tacit acceptance and Convention as adapted in IMO. Describe the process by which a Draft proposal gets converted into a Rule administered by a maritime member country ?
58	As a Chief Engineer on a vessel scheduled to make a voyage from India to the U.S. Coast, list the salient items you will inspect, machinery installations you will ensure for satisfactory operation and documents you will keep handy for making a satisfactory voyage. Give reasoning in each case.
59	What are the UNCLOS provisions concerning ship's flag and nationality ? In observation of UNCLOS what are the duties of flag states and how it is enforced ?
60	With reference to "ISM Code" write short notes on (a) Role of company office (b) Advantage of drills and exercises (c) Documented procedures (d) Management Review
61	With respect to engine room man management enlist the key issues you will address with proper justification in the following areas (a) Training programmes (b) Long term personnel development concept (c) Attitude and motivation development (d) Emergency response (e) Copying with stress
62	A successful voyage for a Chief Engineer is a combination of trouble free run of machineries, optimum use of fuel, minimum interpersonal conflicts and less intervention from shore authorities. Considering the ship as an Organisation how this can be best achieved

63	<p>A second hand single hull VLCC built in 1990 is to be taken over .The vessel is to be registered under Indian flag, as Chief Engineer / Owner representative, what aspects you would look for, with respect to ;</p> <p>(a) SOLAS 74 (b) MARPOL 73/78 (c) Crew accommodation (d) Machinery/ boilers (e) Previous survey report</p>
64	<p>Differentiate the salient consideration taken during survey of a ship under</p> <p>(a) Bare boat charter (b) Voyage charter (c) Time charter.</p> <p>As a Second Engineer on board explain with reasons which of the three surveys is most demanding and exhaustive and why?</p>
65	<p>A ship which was bunkering at a foreign port has met with an accident and a substantial amount of oil spillage in water has resulted. Draw an emergency preparedness plan for the incident and how best it could be encountered under the provision. Describe its salient advantages.</p>
66	<p>As a team leader and resource manager identify the issues that could be addressed for maximum utilization of potential of technical personnel on board ships. Examine the development in compensation and benefit practices and trends followed thereof?</p>
67	<p>In case of a major fire onboard, explain the salient advantages of documented procedures under “emergency preparedness” over normal fire fighting procedures. “Before implementation of the ISM code the fire fighting operations onboard have been successfully carried out in numerous cases”- with the context of the statement give your opinion for requirement of documented procedures under “emergency preparedness”.</p>
68	<p>Explain the jurisdiction of application of port State control and its control regulations. State the salient clauses from different International Conventions that forms the basis and focus area of port State control.</p>
69	<p>Describe a procedure to establish a training programme appropriate for the training need of Engine Room personnel on board, where you have joined as Chief Engineer. Illustrate the measures you will undertake in view of a section of engine room personnel not adept in attaining the standard within a specified time period.</p>
70	<p>A vessel is about to undertake a six month round voyage. As a Chief Engineer. underline and describe the key issues that you will inspect, check, prepare, establish and maintain towards proper Planned Maintenance of engine room and associated areas under ISM Code.</p>
71	<p>Briefly discuss the reasons for Bulk –Carrier losses in the last decade and explain, how provisions detailed in Chapter XII of SOLAS 74 as amended will contribute towards the safety of bulk-carriers?</p>
72	<p>As per the Marine Insurance Act, write short notes on the following:</p> <p>(a) Deviation (b) Warranties (c) War Risk Clause (d) Charterers Contribution Clause.</p>

73	Elaborate the influences of a Charterer on operation of propulsion and other ship-board machineries during a voyage. A ship on a time- charter if met with several unforeseen machinery breakdowns due to which the scheduled date cannot be met with, state the different options and actions a Chief Engineer on-board should undertake ?
74	Highlight the following amendments to IMO Conventions and its effect in ship operation thereof. Mention their date of entry into force. (a) CLC and Fund Conventions (b) SOLAS-IMDG Code
75	List the objectives of an ISM Internal Audit of a ship? How an Internal Audit help in External Audit of a vessel? Name the salient issues addressed in the Internal Audit and the persons responsible to carry out the same.
76	What are the principles of modern salvage law ? What is general average ? Explain with context to general average (i) Entitlement (ii) Artificial (iii) Adjustment (iv) Contestation.
77	What is the purpose of annual surveys? Give a list of items that would be examined by a surveyor during annual survey. Also explain Condition of Class. What impact condition of class has on a ships commercial/ technical aspect ?
78	Explain the different machinery related emergency situations that are dealt as documented procedures under “emergency preparedness”. Underline the salient actions that are documented in dealing with (i) Main Engine Failure (ii) steering failure (iii) electrical failure (iv) automation failure.
79	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.
80	What are the primary strategies that may be employed for coping with stress affected personnel ? How can these elements be best implemented in ships personnel motivating them for better team work ?
81	Detail the inspection that you as the new Chief Engineer of an Oil Tanker / Gas Carrier would make on joining the ship with regard to (i) Stability (ii) Damage control (iii) Fire fighting (iv) Critical Machinery.
82	The protection of the Marine environment is of utmost importance today. Discuss; (a) How would you as a Chief Engineer Officer of a tanker ensure protection of the environment by compliance with the various Regulation of MARPOL 73/78 Annex 1 for prevention and control of pollution at sea? (b) State requirement for compliance under Annex VI of MARPOL 73/78.
83	With reference to port State control inspection; (a) What are “clear grounds” and “ISM related deficiencies” for a Port State Control Officer to conduct a 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.

84	(a) List the objectives of an ISM Internal Audit of a ship? How an Internal Audit helps in satisfactory External Audit of a vessel? What are the dynamic elements of the ISM Code which envisages continuous improvement of safety management and pollution prevention. (b) What do you understand by 'Non –conformance'. What is the difference between a 'corrective action' and 'preventive action'
85	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.
86	Explain the following: (a) Worldscale (b) Responsibilities of a shipbroker
87	Discuss the responsibilities of the Chief Engineer of the vessel with respect to the following; (a) Bunkering and receiving correct quantity of fuel oil. (b) In case of a dispute over lube oil / fuel oil received on board, actions required under the circumstances. (c) Spillage of oil in the water during bunkering. (d) Declaration to be seen in the Bunker Delivery Note. (e) Requirement of bunker for ships transiting Antarctic zone.
88	The safety management system requires that Company should provide for measures ensuring that the Company's organization can respond at any time to hazards, accidents and emergency situations involving ships. Underline the importance of "communication" in "emergency preparedness" and what measures are required for the following (i) contact between ship and the office (ii) communication equipment (iii) dealing with the media (iv) dealing with the next of kin.
89	Discuss the responsibilities of the Chief Engineer with respect to an appropriate training plan for engine room personnel towards successful handling of (i) major fire in engine room and wheelhouse (ii) automation failure of main engine in UMS mode (iii) Steering failure (iv) electrical power failure.
90	With respect to key issues in ship repair contracts, illustrate (i) payment terms (ii) Ambit of the specification and additional works (iii) contract period, liquidated damages and force majeure (iv) Guarantees and insurance (v) Termination events.
91	(a) Explain the salient features of Ballast Water Management Engineer with consultation with the Master of the vessel implement a typical "Ballast water Management Plan " prior to your vessel arriving at an USA port. (b) How would you as Chief
92	Safety of Bulk carriers is a major concern being addressed by IMO. State what are the recent additional safeties measures incorporated into SOLAS 74 as amended for Bulk carriers in Ch. XII. List out the main items under enhanced survey of a 15 years special survey for a Bulk carrier.

93	Write short notes on: (a) World Scale (b) Maritime Lien (c) BIMCO
94	Describe briefly Port State Control and its role in elimination of sub-standard ships. Is Port State Control effective?
95	State the action taken by a Recognized Organization towards handling of an ISM certificate in case; (i) Evidence of a major non- conformity (ii) Evidence of too many non- conformities (iii) extension of the safety management certificate is requested for (iv) Revision of an entry for a certificate is requested for. Under what circumstances can the SMC and DOC be withdrawn.
96	(a) State the importance of maintaining vessels records at sea and at port. Elucidate the procedures involved relating to entries made for the data's during watch-keeping. (b) List the records which are maintained with respect to various inspection carried out in a bulk carrier by the classification society
97	Discuss the procedure of entry into force of an IMO Convention after its Adoption? State the provision and its importance towards entry into force of the convention. For a convention of important technical nature state the general rules/ conditions observed by the states for its entry into force. Explain the terms (i) Accession (ii) Signature subject to Ratification, acceptance or approval
98	Describe the methodology you will practice during taking over / handing over of your vessel in a foreign port as a Chief Engineer towards inventory management of lube oil / fuel oil on board. In case of dispute arising thereof, describe how it can be best solved ? During the circumstances how you would ascertain amount of oil not fit for use ?
99	As a Chief Engineer on a ship where you have joined recently, develop a training programme for shore related activities of a vessel. Highlight the specific training needs and emergency measures for engine room personnel in the dry dock in case of (i) transfer of fuel oil from tank to tank (ii) fire (iii) explosion in the engine room.
100	Differentiate between Voyage Charter and Time Charter of a vessel. Underline the changes in responsibilities and the scope of activities for a Chief Engineer in each case.
101	With respect to engine room "Resource Management" enlist the key issues you will address with proper justification in the following areas (i) Incentive programmes (ii) Long term personnel development concept (iii) Human resources quality assurance (iv) Attitude and motivation development (v) Emergency response.
102	As a Chief Engineer describe the procedure you would employ for bunkering at a port for ascertaining / receiving correct grade / quantity of oil from the shore supply authorities. In case of a dispute over lube oil / fuel oil received on board, describe the actions you will take under circumstances. What are the applicable provisions under MAPOL 73/78, Annex VI Regulations?
103	What provisions are made under Port State Control (PSC) towards (i) Certificates issued by non party states to their ships (ii) Inspection of ships below convention size and (iii) No more favourable treatment.

104	Explain the influence of following external factors in higher consumption of fuel oil and how at best they could be controlled? (i) Ship's hull condition (ii) Weather condition (iii) Maintenance of different elements in fuel oil system (iv) Damage to propeller blades.
105	Underline the general procedures followed for flow of information among ships personnel. As a Chief Engineer on a ship having multinational crew, state how the process of effective information to the team can be approached by you and also how a certain instruction received by you from shore office for engine management can be best utilized?
106	With reference to project cost estimation towards a major ship repair with multiple activities, explain (i) Cost groups (ii) Cost parameters (iii) Work breakdown structure (WBS). How best in your opinion do these modules assist towards an optimum ship repair cost estimation ?
107	Describe how ISM code has ensured the " Role and Responsibility of ship owner" in achieving Safety Management objectives? What importance do you give to the "Owner's Policy" in Safety Management structure of an organization?
108	Describe briefly ILO Maritime Labour Convention 2006 (No. 186) which was adopted in February 2006..
109	What are the main features incorporated under the Salvage Conventions? Explain " No Cure No Pay" and how this was amended by introducing special compensation towards protecting the marine environment?
110	What is Bill of Lading? What precautions are to be observed before signing a Bill of Lading under voyage charter and time charter?
111	UNCLOS and SOLAS state that it is mandatory for a flag State to conduct an investigation into any "casualty". Explain in detail with reference to M.S. Act, the authority vested with the Government of India and the procedures adopted by a marine board of inquiry.
112	Give a brief background of ILO, its inception and its fields of mandate for Maritime Labour Development. Name three-conventions / protocol of ILO concerning maritime labour, which has come in force in 1996.
113	A second hand bulk carrier in 1990 is to be taken over. The vessel is to be registered under Indian flag. As Chief Engineer / Owner representative, what aspects would you look for with respect to: (a) SOLAS 74, (b) MARPOL73/78, (c) Crew accommodation, (d) Previous survey report.
114	While approaching a port an accident took place, resulting in grounding of the vessel. A team of surveyors carried out inspection of the vessel and official records. Company has advised you to submit the report along with the relevant Log book records for formulating an opinion regarding cause of grounding. In case the grounding was not due to machinery failure, same may be brought out in the report to underline that machineries were functioning satisfactorily.
115	(a) State the circumstances which may lead to Suspension or Withdrawal of Class. (b) Explain the terms used by the classification societies: (i) Period of Class, (ii) Anniversary date, (iii) Survey time window, (iv) Memoranda, (v) Recommendations.

116	Define a “Company” and its obligation under ISM code towards safe shipboard operations. Enumerate the key shipboard operations, which should be maintained by a Company for successful onboard operation of a ship under ISM code.
117	You have been advised by your company to develop a programme for training of Engine Room staff and for implementing it throughout the Company’s fleet with respect to: (i) Fire prevention and fire fighting, (ii) Pollution prevention, (iii) Safe working practices. Prepare the training plan and also list the related STCW Codes for each of them.
118	(a) What are the important highlights of UNCLOS with respect to environment protection? (i) Territorial Sea, (ii) Contiguous Zone, (iii) Exclusive Economic Zone, (iv) Continental Shelf, (v) High Seas. (b) Explain:
119	As a Chief Engineer on a UMS vessel scheduled to make a voyage from India to the U.S. Coast; list the salient items you will inspect including propulsion machinery to ensure making a satisfactory voyage. Also list the documents the ship will keep handy to successfully undergo port State control inspection on arrival.
120	You as Chief Engineer are required to inform your Company with respect to inspection of propellers in the dry dock during which you noticed a surface crack on one of the blades. State the steps taken by you as Chief Engineer for successful handling of the situation.
121	Has “ISM Code” been successful in bringing changes with respect to safety and environment protection? With your past experience of serving on ships having Safety Management System, elaborate on the same.
122	a) What are the procedures for conducting an inquiry after causality at sea as per Merchant shipping act, 1958 as amended? b) What is Article of Agreement? Why is it necessary to have Article of Agreement?
123	a) Define port of refuge? What are IMO initiatives for port of refuge? When and how a ship can call the port of refuge? b) What are the documents required by the Average adjuster for assessing the General Average at the port of refuge
124	Effective communication is the foundation for effectiveness in any type of organization. As, a Chief Engineer of a ship, how will you ensure effective and healthy communication on board your ship?
125	While bunkering at a port as a Chief Engineer describe the procedure you would employ for ascertaining / receiving correct grade / quantity of oil from the shore supply authorities. In case of a dispute over fuel oil received on board, describe the actions you will take under the circumstances. What are the applicable provisions under MARPOL 73/78, Annex VI Regulations?
126	Emphasize the validity of the statement that Classification Societies are Recognized Organizations (RO). In your view if the statement carries some limitation highlight them with reasons. List the statutory services undertaken by a classification body on behalf of Administration.

127	(a) What are the main changes on the ISM Code that have come into force from 1st July 2010? paragraph 8 of the ISM Code, explain the different machinery related emergency situations that are dealt as documented procedures under the company's Safety Management System. Underline the salient actions that are documented in dealing with (i) Main Engine Failure (ii) Steering failure (iii) Boiler automation failure (iv) Scavenge fire.	(b) With respect to
128	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?	
129	Describe the role of " port State Control " (PSC) and " flag State inspection " (FSI) in ensuring safety on vessels and a cleaner environment. Enumerate the relevant regulations article and annexes of the concerned Convention which provides provisions for PSC. State the grounds for PSC intervention and the grounds for subsequent detention of a vessel.	
130	Give a brief background of ILO and salient points of Maritime Labour Convention, 2006 MLC, 2006). When will the MLC, 2006 come into force and what will happen to the existing Conventions on maritime labour. What are the novel features of the MLC, 2006?	
131	Exhaust emission control is a major global issue and under serious consideration by world shipping. In this context, comment on the following:- (a) Primary Nox reduction measures; (b) Secondary Nox reduction measures. Justify, which of these methods is more effective?	
132	Whilst approaching dock gates, the main engines refused to respond to bridge control, driving ahead instead of braking astern, until the bow made contact with the dock wall. As Chief Engineer, report to head office why the engines failed to respond to Bridge control, the temporary measure instituted to avoid further trouble on this voyage and suggesting permanent measures to avoid repetition in the future.	
133	You are the Chief Engineer of a ship with four engineers and six engine crew members. How would you set up a fire-fighting team & verify its effectiveness?	
134	You are the chief engineer of a vessel that has suffered a minor fire in the engine room that burned off the wiring to essential pumps. Temporary repairs were made to get the vessel underway. Write a letter to the company head office describing the incident as to how the fire took place and what corrective and preventive steps have you taken. What arrangements do you suggest to effect a permanent repair at the next port of call.	
135	What are the ongoing developments at the IMO with respect to the technical and operational measures to be invoked on board ships for combating green house gas emissions from ships?	
136	You as a Chief Engineer are asked by your company to carry out internal audit of the deck-department under the ISM Code. How would you carry out the audit & which areas would you lay emphasis on during the audit.	
137	The vessel of which you are Chief Engineer suffers grounding. Write a report to be forwarded to the Superintendent of the company about the surveys and inspections subsequently carried out when the vessel was dry-docked in a foreign port.	
138	Sketch and describe LNG as fuel for ship propulsion and the safeties that are to be provided. What are the challenges in ship power and the developments that are currently taking place.	
139	Differentiate between static and dynamic stability? Can a ship high on GM be low on stability? Justify your answer with reasoning. Enlist the governing factors you will inspect while taking over a new ship in shipyard as Chief Engineer for having optimum stability in both categories. Substantiate your answer with reasons.	

140	Give the history of requirement leading towards International Convention On Load lines, 1966, underlining its date of adoption and entry into force. What special provisions were included in the said convention in comparison to first International Convention on Load lines adopted in 1930? Describe its different chapters highlighting their area of coverage and related Annexes.
141	With reference to ship repair/ ship building, and engineering economics explain the terms (i) Risk analysis (ii) Brake even analysis (iii) Sensitivity analysis (iv) Multi stage sequential analysis (v) Multi attribute decision making.
142	Illustrate mean piston speed and its significance on consumption of fuel oil. Explain how mean piston speed is related to r.p.m. and ideal combustion. Joining an old ship as Chief Engineer, formulate a methodology by which you can ascertain optimum use of fuel oil against desired mean piston speed
143	i) List the methods and aids to prevent pollution of the environment by ships under MARPOL 73/78 Conventions and steps you can take for its successful implementation on a ship prior its voyage, where you have joined as Chief Engineer. ii) During bunkering of a ship at a foreign port, a substantial amount of oil spillage in water has taken place. Draw an emergency preparedness plan for such incidents and how best it could be encountered under the situation.
144	The STCW 95 convention was amended in manila on 25th June 2010. What major changes and amendments were made for the engine department. 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 the criteria for evaluating competence for onboard training by a Chief Engineer?
145	You are deputed by your company to a shipyard for taking delivery of a new ship fitted with an intelligent engine for main propulsion. Assuming that you have never worked on these engines, enumerate: (a) How you would ascertain the items that need to be personally examined by you, & (b) How you would carry out the examining of each item stated at ‘(a)’. Confine your answers for ‘(a)’ & ‘(b)’ with respect to the main propulsion only.
146	A vessel is required to be registered at a specific port in India. List the documents that will be required for such registration detailing the related flow process thereof. What is procedure for allotment of the IMO number to a ship?
147	State the different types of marine insurance policies that could be taken by owners, shippers or other related parties. Explain the salient liabilities and exclusions related with each case for an insurer. Name the various agencies in India which deal with marine insurance policies.
148	As a Chief Engineer on a fully loaded ship you are stranded in an island near, the UK coast having no survey facility where the forepeak of the vessel is severely damaged. Explain your actions with reasons and the procedures to be adopted for making a safe return voyage to India.
149	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.

150	(a) Prepare a risk assessment for the task of overhauling of main engine unit in rough weather keeping in mind all the mandatory requirements. (b) Describe the Best Management Practices (BMP) to be followed to deter piracy off the coast of Somalia which has been prepared by various shipping industry associations.
151	Expanding the following abbreviations / word, write short notes on following enumerating their initiation and the amendments made thereof till date: a. STCW b. IMDG c. INMARSAT d. TONNAGE e. LOADLINE
152	You have joined as Chief Engineer on an 30 year old Cargo vessel which has been recently procured by the owners. State the documents you will need for immediate sailing under ISM Code and how this can be achieved within a short targeted span?
153	Underlining Marine Insurance Cover, explain (i) Hull & Machinery cover, (ii) P & I Insurance, (iii) Cargo Insurance, (iv) Pollution Liability Insurance.
154	Under maritime law in case of a collision, explain (i) apportionment of damages (ii) proportionate fault (iii) collision liabilities (iv) presumptions of fault (v) jurisdiction in collision cases.
155	Highlight the role of Classification Societies in providing set of standards for sound merchant ship construction. Also state the importance of International Association of Classification Societies and how they contribute in improving standards of hull and machineries?
156	Briefly summarise the four 'selves' in the Johari Window. What Implications does each have for interpersonal conflict onboard?
157	Your vessel has shown a significant increase of fuel oil, which had been, recently dry docked. Frame a report in the format of an email addressing Engineer Superintendent with the related inspections made, findings established and suggestions for repair if any.
158	Discuss the influence the following properties / contents have on fuel characteristics and its economic use (i) viscosity (ii) density (iii) ignition quality (iv) VIT (v) compatibility (vi) carbon residue (vii) control combustion period
159	With respect to Merchant Shipping Act, 1958, as amended a. Explain briefly the sections, relevant to the prevention and provisions for containment of accidental pollution of the sea by oil; b. Explain briefly the power vested with the State to give notice and to take measures for preventing or containing the oil pollution.
160	(a) What do you understand by "Unseaworthy vessels" within the meaning of the Merchant Shipping Act, 1958, as amended? (b) What according to you is the difference between "Unseaworthy ships" & "Unsafe ships". (c) What are the obligations of owners to crew with respect seaworthiness?
161	(a) What is the definition of "Company" as per ISM Code and list out the Safety Management objectives of the company as per the ISM Code? How the company verifies the satisfactory implementation of the ISM Code requirements. (b) As a Chief Engineer you have joined a vessel which is about to undertake a six month round voyage. Underline and describe the key areas that you will inspect, check, prepare, establish and maintain towards proper Planned Maintenance of Engine Room Machineries and associated areas, under ISM Codes.

162	State the applicable regulations of SOLAS and MARPOL under which it is mandatory for a flag State to conduct an <i>investigation</i> into any “casualty”. Write briefly the salient points of Casualty Investigation Code and the recommended practices for a safety Investigation into a Marine Casualty or Marine Incident. What do you understand by the term “very serious marine casualty”.
163	How will you prepare your ship for a <i>renewal survey of International Air Pollution Prevention Certificate</i> ? Explain with specific emphasis on the records and documents to be maintained. Exnumerate general requirements for shipboard incinerators, as mentioned in Annex VI of MARPOL 73/78.
164	Why is <i>dry-docking referred to as a major event in the maintenance</i> of a ship? As a Chief Engineer explain different steps that need consideration while planning a dry-docking project of a ship due for its first special survey.
165	Discuss the peculiar working environments in which ships operate and how they influence decisions on <i>ships maintenance policies</i> .
166	In an unfortunate incident of <i>Main Engine Crank case explosion</i> on your vessel, the main engine was badly damaged and two engine room personnel suffered serious injuries. Explain how you will present the vessel for subsequent inspections by P&I and H&M insurance companies with special emphasis on the records and documents required in each case to ensure that only genuine claims are honoured.
167	In whose interest and by whom the vetting Inspections on Oil takers are carried out? How will you systematically prepare a 25 year old Crude oil tanker for a vetting inspection? What kind of vetting inspections are carried out on Chemical tankers?
168	Compare the latest European Union stipulations for Low Sulphur fuel on merchant ships with the existing MARPOL requirements. Discuss the difficulties for its implementation on existing ships and its commercial impact on ship operations.
169	List the objectives of the ISM Code ? How an Internal Audit helps in External Audit of a vessel? You have been asked to carry out the internal audit of the deck department, explain how will you proceed in carrying out an effective internal audit.
170	Apart from statutory surveys, what other surveys can be undertaken by a classification society for a ship? What are the limitations for the society in these cases? Enlist them and emphasize how these cases are taken care of.
171	In relation to the seaworthiness of a ship, discuss the responsibility and authority of the following stakeholders: a) Maritime Administration b) Recognised Organization c) Shipowner d) Insurance Company
172	Nowadays there is a global trend substituting prescriptive based standards into functional based standards (e.g., Part F of the SOLAS, Chapter II-2).
173	Your vessel has been awarded three major non conformities during a SMC audit.. Frame a report in the format of an email addressing the Engineer Superintendent with the suggested steps to be taken for early sailing of the vessel.
174	Explain in detail the significance of Propeller Curves to a Chief Engineer. Enumerate the Safety Margins in relation to the propeller.

175	Vent pipes have a special role to play with respect to safety of ships. Please explain in detail the following: a) where these are fitted; b) any special fitment requirement as per statutes.
176	Compressed air starting systems for ocean-going ships have specific requirements with particular importance being assigned to requirements for air compressors. Please enumerate these requirements, with reasons as relevant.
177	Write short notes on:- (i) Tier II & Tier III emission regulations on main engine (ii) Homogenizers for water emulsion (iii) Selective Catalytic Reduction for NOx emission reduction
178	Elaborate the <i>influence of a Charterer</i> on operation of propulsion and other ship-board machineries during a voyage. After taking over a ship as a Chief Engineer you have been informed that the ship is on a time-charter and has a history of unforeseen auxiliary machinery breakdowns at sea. State the different options you have and actions you would take as a Chief Engineer prior to the commencement of voyage
179	With regard to ordering and receiving fuel bunkers on board, answer the following : a. The importance of correct bunker specifications, including the relevant ISO standard b. How will you ensure that a representative sample is drawn during bunkering? b. How will you ensure that in case of bunker disputes especially with regard to quality, the sample from the vessel will be acceptable for verification?
180	With respect to refrigeration gases used on board vessels, answer the following a. Explain Ozone depleting Potential of conventional refrigerant gases b. Name the alternate refrigerant gases available and being used onboard c. Explain the steps you will take to ensure that release of refrigerant gases from the plant is minimised during normal operation and during maintenance activities
181	Explain the following modern methods of turbo charging: a. Pulse converter system b. Sequential turbo charging d. Two stage turbo charging c. Variable geometry turbochargers
182	What is Bill of Lading? What precautions are to be observed before signing a Bill of Lading under voyage charter and time charter? Differentiate the salient features during survey of a ship under (i) Bare boat charter (ii) Voyage charter (iii) Time charter. As a Chief Engineer on board explain with reasons which of the three surveys is most demanding and exhaustive and why?

183	<p>With reference to large starting air receivers:</p> <p>(a) Explain where corrosion is likely to occur and state why it occurs in these regions;</p> <p>(b) State how the incidence of corrosion in air receivers might be minimized;</p> <p>(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;</p> <p>(d) State the further action a Chief Engineer must take upon discovering such air receiver corrosion.</p>
184	<p>(a) Describe the procedure to be adopted for the inspection of a safety valve fitted to an exhaust gas boiler stating, with reasons, which parts should receive particularly close attention.</p> <p>(b) Describe the procedure for the setting of safety valves of exhaust gas operated auxiliary boilers.</p> <p>(c) Explain the action a Chief Engineer should take after the setting of safety valves as in (b).</p>
185	<p>With reference to the burning of residual fuel state, with reasons, EACH of the following:</p> <p>(a) FIVE main problems associated with burning residual fuel oil in medium speed engines;</p> <p>(b) how the problems mentioned in Q.2(a) may be minimised in order to ensure that a medium speed engine may be operated in an acceptable manner;</p> <p>(c) the procedure you, as Chief Engineer would adopt in order to ensure that bunkers of the correct quantity and specification were ordered and accepted on board.</p>