MOT MEP LATEST QUESTION BANK 24-25

INDEX

INTRODUCTION

Q1) Specifications:

1. M/E, A/E, // Type of main engine, Nomenclature
2. Type of Governor
3. Boiler,
4. Purifier,
5. Compressor,
6. Incinerator,
7. Steering gear,
8. Bow thruster,
9. OWS
10. Power of ship

Q2) Type of bunker, Oil Consumption, Lube Oil consumption

Q3) Major overhaul carried on board, your contribution

1.1-IC ENGINE DEFINATIONS

Q1) (25) M/E nomenclature

Q2) (25) What is Stroke to Bore ratio and significance, advantages of super long stroke

Q3) (25) Define viscosity index

Q4) (25) Define aromaticity? and its significance

Q5) (25) What is octan no and cetane no

Q6) (25) What is fatigue stress

Q7) (25) What is De-Emulsification

Q8) (25) Type of stress, fatigue and its type, possible locations on ships

Q9) (25) What is servomotor

Q10) (25) What is creep

Q11) (25) What is Critical speed

Q12) (25) What is super long stroke

Q13) (25) What is an ultra-long stroke

Q14) (25) What is Clover leafing

1.2-IC ENGINE STRUCTURE

Q) M/E engine which all component

Q) (25) Which parts are in tension/ tensile forces in engine M/E & A/E

Q1) (25) Constructional difference between Main and Auxiliary engine

Q2) (25) What is Bedplate Types, how is bed plate mounted on tank top, Bed plate material, Composite bedplate

Q3) (25) Purpose of chocks, explain installation, checks, which type of chocks on your ship, what is advantage of resin chocks, acoustic Embrittlement.

Q4) (25) Where are chokes fitted on newly built main engine.

Q5 (25) Types of crankshafts, material and advantages disadvantages, shrinkage allowance?

Q6) (25) Which type of crank shaft used on your ship, what is semi build crank shaft?

Q) (25) Crankshaft and Flywheel, Connection between crankshaft and flywheel

Q7) (25) Chain drive and gear drive (for camshaft) advantage and disadvantage, how to know chain is slag, Procedure for tightening of chain.

Q8) (25) Cam to Crank ratio, with reasoning

Q9) (25) Explain M/E and A/E Crankshaft and crankshaft drive, Number of sprockets

Q10) (25) Q) (25) What is Tie rod, construction, function, Material of tie rod, why they are pre tensed

Q11) (25) stuffing box construction, position, types of rings in stuffing box ring condition checks, Why Spring is fitted on scrapper ring

Q12) (25) Main engine diaphragm

Q13) (25) Air start line safety

Q14) (25) What are Interlocks in M/E and A/E

Q15) (25) Working of turning gear and reverse direction interlock

Q16) (25) What is Thrust block, where thrust block is fitted and clearance values // Thrust block working, thrust pad types, how to take thrust block clearance.

Q17) (25) How thrust is passing from main engine to hull?

Q14) (25) Axial Vibration Damper in Main Engine

Q18) (25) What are De-tuners, its working/use, location

Q) (25) What is effective delivery stroke in A/E

Q) (25) Fittings on generator cylinder head

Q19) (25) Why inlet valve of A/E bigger than exhaust.

Q20) (25) Why 2 spring in A/E exhaust and inlet valve?

Q21) (25) What is roto cap, Construction and its working, maintenance, checks and what do we have in A/E, M/E

Q22) Types of vibration in M/E and A/E, how to control

Q23) (25) What are Detuners? Construction?

Q24) (25) Diff between RTA and RT flex

Q25) (25) In Compact Engine, what do you mean by compact design

Q26) (25) What do you mean by compact design in ME engines (ME-C), What is B in ME-B

Q27) (25) M.E engine which all component

Q28) (25) In ME-C, ME-B which part is electronically controlled?

Q29) (25) difference between ME-B and ME-C

Q30) (25) Electronic engine how it differs from Mc (cross question)

Q31) (25) Diff between MC and MC-C

Q32) (25) What is angle encoder, Numbers

Q33) (25) Explain angle encoder, why lag is provided, purpose.

Q34) (25) What is Sterlite coating, used where?

Q35) (25) What types of engines uses gear mechanism, is gear used in your ship.

Q36) (25) Where is gear mechanism fixed in main engine

Q37) (25) Rpm of engine and rpm of propeller.

Q38) (25) Volumetric efficiency of engine

Q39) (25) What is puncture valve, if it gets stuck during operation what will you do

Q40) (25) Crankshaft and Flywheel, Connection between crankshaft and flywheel

Q41) (25) What is Tappet clearance in AE, Thermal expansion coefficient, how clearance is decided

Q42) (25) Which system fine filters are used and size

Q43) (25) What is reduction gear, where is it used, If there is 4s engine with rpm 720 to what value will reduction gear reduce to the propeller

Q44) (25) How do rate engine power

Q45) (25) What is wear ring and where it is located

Q46) (25) What are Quills, use and location.

Q47) (25) Explain Oil & water-cooled piston, Advantages and disadvantages.

1.3-WORKING OF IC ENGINE

Q1) (25) What are different combustion cycle, which combustion cycle used

Q2) (25) 4 Stroke engine timing diagram

Q3) (25) 2 Stroke engine timing diagram

Q4) Minimum cylinder required for 2 strokes, 4 stroke engine to start on Air.

Q5) (25) How power of the engine is calculated, Power calculation, what is significance of effective pressure

Q6) (25) Indicator cards and types, explain Power card definition, how to calculate power, what is Mean indicator pressure, Formula, Light Spring diagram

Q7) (25) Which card to take first while taking indicator diagram on main engine, what all data you get from indicator diagrams

Q8) (25 Indicator diagram types, what faults will you find with indicator cards, what defects can you get out of indicator cards

Q9) (25) How to take/calculate efficiency of Main Engine (actual process)

Q10) (25) What is Firing order of IC engine and its significance (Ahed and Astern)

Q11) (25) What is Exhaust valve timing, how to adjust

Q12) (25) Distributor function in air starting sys

Q13) (25) Which flywheel is bigger main engine or auxiliary engine

Q14) (25) Explain, reversing of main engine, ME reversing methods

Q15) (25) What is Reduction gears, purpose

Q16) (25) What is M.E engine, why electronic control.

Q17) (25) Basic working of ME-C engine

Q18) What components removed in ME with respect to old engines, what new components added.

Q19) Is A/E electronically controlled, reasons.

Q20) (25) Explain how reversing of main engine is done (ME-C, and in general)

Q21) ME-C daily consumption, fuel and cylinder oil

Q22) (25) What is VIT and super VIT

Q23) (25) Difference VIT and Super VIT

Q24) (25) At low load which is better vit or super vit?

Q25) (25) how many gears system does super vit have

Q26) (25) What is servomotor, how many servomotor

Q27) (25) Critical rpm of your main engine

Q28) (25) Explain Loss in power transmission

Q29) (25) Starting Air System, Engine starting process, Timing of starting air induction into cylinder

Q30) (25) How to Prepare main engine for departure

Q31) (25) In 4s and 2s which produce more power

Q32) (25) Explain working of Cam shaft in A/E

Q33) (25) What was NOx limit / value for your ship // M/E & A/E

1.4-BEARING AND CLEARANCE

Q1) (25) Bearing nomenclature

Q2) (25) Bearing types, application, number, used in E/R, TRI Metal Bearing Consist of, Difference between Main bearing and end bearing

Q3 (25) Types of bearings in main engine

Q4) (25) Application of roller and ball bearings

Q5) (25) What is the difference between roller and ball bearing?

Q6) (25) What are thick & thin shell bearing, where it is use & why // advantage, disadvantages

Q7 (25) No. Of main & bottom end bearing

Q8) (25) Bearing material, M/E and & A/E, Main, crank, crosshead…

Q9) (25) How to measure bearing clearances in M/E and A/E (all three bearings)

Q) (25) How to measure bottom end bearing clearance in auxiliary engine

Q10) (25) Main bearing clearance max value

Q11) (25) Main bearing top part removal

Q12) (25) What is M/E Thrust bearing location and why specific location function, working, clearance

Q13) (25) What is Thrust bearing in aux engine, where located and why specific location, function, working, clearance

Q14) (25) How to measure thrust bearing clearance, clearance value?

Q15) (25) Bottom end bearing clearance how to take and why at BDC?

Q16) Where is the axial and radial bearing placed

Q17) (25) How to take bottom end bearing clearance and where feeler gauge is inserted and why >>Ref>> Q9) (25)

Q18) (25) Procedure for A/E main bearing overhaul

1.5-PISTON, LINER, CONNECTING ROD, CRANK SHAFT

Q1) (25) What is top land in piston, structure M/E, A/E

Q2) (25) Explain Piston removal procedure

Q3) (25) While A/E piston removing liner also coming with it, how to stop it.

Q4) (25) How to decarb A/E piston? Procedure?

Q5) (25) safety carried out during piston & piston ring during decarb

Q6) (25) What you will check on piston

Q7) (25) What / how do you check the burned of piston crown

Q8) (25) Types of piston rings, in 2 stroke engine, what are CPR rings?

Q9) (25) Types of piston rings in 4 stroke Engine.

Q10) (25) How to take Piston ring clearance value, Piston ring clearances, position of piston ring while taking clearance, what is axial & butt clearance? Axial and butt clearance values

Q11) (25) How do you know if the piston rings need to be replaced while doing decarb

Q12) (25) What is butt clearance how it is measured, how will u take butt clearance

Q13) (25) What is Load dependent cooling system of liner

Q14) (25) What is Liner wear down, how to check, reasons, how to avoid

Q15) (25) liner calibration procedure

Q16) (25) M/E connecting rod overhauling and checks

Q17) (25) A/E connecting rod overhauling and checks

Q18) (25) Fatigue failure, where does it take place, Con rod renewal hours

Q19) (25) frequency at which connecting rod has to be replaced as per your sms

Q20) (25) How to check trueness of aux engine connecting rod?

Q21) (25) Wow to check Piston ring clearance when inside liner

1.6-FUEL SYSTEM

Q1) (25) what is viscosity index, viscosity of fuel oil during injection, booster pump purpose

Q2) (25) How viscotherm works

Q3) (25) Explain fuel oil system?

Q4) (25) M/E fuel oil inlet temperature, pressure

Q5) (25) Fuel pump types

Q6) (25) Fuel pump parts, Function of erosion plug

Q9) (25) How many blocks of fuel pump

Q10) (25) Type of fuel pump in auxiliary engine, Losses in transmission

Q11) (25) Difference between AE and ME fuel pumps

Q12) (25) Main Engine and A/E fuel injection pressure // Critical temp

Q13) (25) How fuel injection is controlled in Main Engine.

Q14) (25) Fuel injection timing, what if fuel injects late, consequences of it, if fuel injects early, it's consequences, If early fuel injection increases the efficiency, then why don't we injection fuel early

Q15) (25) Advance injection and late injection causes and how will you find one

Q16) (25) Early injection and its effect

Q17) (25) Leaky fuel injector effect on P comp and peak pressure

Q18) (25) effects of improper fuel injection

Q19) (25) Fuel injector overhauling full and testing

Q20) (25) Fuel injector test, how do you check spray pattern test, Test carried out on fuel v/v

Q21) (25) Opening pressure of fuel injector of A/E how to test, Test to be carried out on A/E fuel injector

Q22) (25) What you changed in injector

Q23) (25) How fuel injection happens in ME engines (whole concept, FIVA valves working)

Q24) What is VIT, explain and why needed

Q25) (25) VIT and super VIT difference

Q26) (25) how many gears system does super vit have

Q27) (25) Why viscosity reduced: - contamination by fuel.

Q28) (25) What is SFOC, and its significance, what was SFOC consumption of your engine // , Critical temp

Q29) (25) Impurities in HFO and Catfines

Q30) (25) What is bio fuel?

Q31) (25) What is Mixing column, purpose, location

Q32) (25) What is low sulphur fuel, challenges with it

Q33) (25) How fuel timing achieved in your engine and cross questions

Q34) (25) Fuel injector copper washer to reuse. How? cross question (why annealing?)

Q35) (25) Method of sounding level for *FO settling and service tanks?

Q36) (25) fuel pump overhaul, injection pump various pressure and adjustment

1.7-LUBE OIL SYSTEM

Q1) What are lube oil properties, Lubrication properties

Q2) (25) Properties of lube oil, Difference between disperency and detergency

Q3) (25) M/E Lube oil properties

Q4) (25) Which lube oil used for cylinder lubrication

Q5) (25) Types of lubrication.

Q6) (25) What is Splash and forced lubrication

Q7) (25) What is difference between hydrodynamic and elsato- hydrodynamic lubrication

Q8) (25) Main engine & A/E lubrication how it's done

Q9) (25) How liner lubrication happens in A/E and M/E

Q10) (25) M/E crankpin lubrication method and cross question (how LO goes down from crosshead bearing)

Q11) (25) What is difference between Crosshead and trunk type engines, Lubrication system difference

Q12) (25) Why Cross head bearing lubricant is difficult

Q13) (25) What is Alpha Lubrication

Q14) (25) At what position of piston, lube oil injected in alpha lubricator

Q15) (25) Mechanical lubricator

Q16) (25) Difference between alpha lubricator and mechanical lubricator and cross question

Q17) (25) Alpha lubrication, advantages over conventional lubrication, Cross question about alpha lubrication

Q18) (25) Types of lube oil test, Carried Out onboard, how to do Viscosity test

Q19) (25) A/E Lube Oil Tests

Q20) (25) Difference in Crank Case oil of ME and AE? cross questions.

Q21) (25) Why TBN for Lube oil. // TBN of ME, AE & cylinder oil, what is base of TBN difference

Q22) (25) M/E crankcase oil and cylinder oil TBN, Why TBN of cylinder oil is high, significance,

TBN of cylinder oil, TBN of crankcase oil Values.

Q23) (25) What are TBN values as per fuel, significance

Q24) (25) What was cylinder oil consumption, ideal value

Q25) (25) M/E system oil flash point

Q26) (25) Lube oil contamination in M/E & A/E

Q27) (25) Procedure to check lube oil level in auxiliary engine and Main Engine sump tank

Q28) (25) How will you change over the filter M/E and A/E Lube oil filter and when

Q29) Different Alarms and trips in Lube oil system and values on your ship.

Q30) (25) What is M/E system Low lube oil alarm

Q31) (25) M/E & A/E Lube oil low pressure alarm what to do, reason and action

Q32) (25) Generator alarms and lube oil pressure

Q33) (25) How to test M/E, A/E Lube oil alarms and trips, low level pressure alarm, how to confirm LO alarm false or true A/E M/E,

Q34) (25) Lube oil cooler and cross questions

Q35) (25) What is scuffing

Q36) (25) What is clover leafing

Q37) (25) Specific cylinder oil consumption

Q38) (25) Procedure for cleaning LO filter of AE

Q39) (25) How to check lube oil level of AE during running condition

Q40) (25) What is the principle of oil mist detector

Q41) (25) How OMD works

Q42) (25) Working of LO backwash filter

Q43) (25) How to change over lube oil duplex filter

Q44) (25) AE L.O. pressure decreasing what is the reason?

Q45) (25) What is Cylinder oil feed rate asper your ships M/E

Q46) (25) How to find Lube oil contamination, possible contaminants, action to be taken

1.8-GOVERNOR

Q1) (25) Types of governors

Q2) (25) What are type of governor in Main engine and Aux engine

Q3) (25) Difference between M/E and A/E Governor

Q4) (25) Which type of governor for M/E & A/E on ship?

1.9-SUPERCHARGER / TURBOCHARGER

Q1) (25) What is Scavenging, Supercharging and turbocharging?

Q4) Turbocharger blower side and turbine side construction, Turbocharger RPM, Component materials, Labyrinth seal material, Diffuser function and location.

Q2) Types of turbochargers (TCA, TCR etc. Types), what type was used on your ship, No. Of turbocharger on Main Engine. how to decide

Q3) Why there is difference between turbocharger inlet and outlet/how heat is converted to work in T/C

Q4) (25) Type of turbocharger in main engine and aux engine and why different T/C on A/E and M/E

Q5) Advantage disadvantage of TCA and TCR

Q6) Turbocharger Clarence (KLM), Significance of Turbocharger Clarence

Q7) (25) Clearance in turbocharger to check after overhaul

Q8) What is efficiency of T/C and how to increase efficiency in turbocharger, flow of air from turbocharger, explain volumetric efficiency he wanted to know the formula

Q9) (25) How to increase volumetric efficiency of compressor

Q10) Turbocharger Lubrication and cooling:

Q11) Types of bearings used in T/C, why thrust bearing used on compressor side, which type used on turbine side, bearing material.

Q12) (25) Type of turbocharger bearing, which type on your ship, lubrication of bearing.

Q13) Turbocharger compressor and turbine maintenance

Q14) Turbocharger water washing on turbine and blower side how to do, Turbocharger grit washing procedure

Q15) (25) Scavenging types, what is constant pressure type and pulse type turbocharger, differences, why we prefer constant pressure over pulse type

Q16) (25) Scavenging efficiency, how to check scavenge efficiency

Q17) (25) Why we don’t use pulse type T/C in M/E (2 stroke)

Q18) What is surging, immediate actions, causes, how to avoid, impact on system

Q19) (25) Two new inventions of turbochargers.

Q20) (25) Explain VTA Turbocharger,

Q21) (25) Turbogenerator working, type to turbine used, how to cold start it (ship specific) Hybrid T/C

Q22) (25) What will happen when M/E turbocharger filter choked/too much dirty?

Q23) (25) How to know turbocharger filter is fouled

Q24) (25) Air cooler purpose in scavenge / TC system

Q25) (25) Turbocharger checks while handing over the watch, How you will come to know air filter dirty, why it is dirty, Types of turbocharging Advantages and Disadvantages

Q26) (25) How to remove exhaust gas bellow

Q27) (25) Turbine

1. HP turbine specifications

2. Types of turbines (pressure compounding and velocity compounding)

3. Types of reduction gears, advantage of helical gears

4. Axial vibration trip, unit to measure axial vibration

1.10- IC ENGINE OVERHAUL, INSPECTION, CHECKS

Q1) (25) Major overhaul in M/E

Q2) Major overhauls in A/E

Q3) (25) What overhaul on engine, What on A/E and M/E check, what things changed and why it's done.

Q4) (25) Main engine exhaust valve overhauling

Q5) (25) Crankcase opening Pressure

Q6) (25) How to do Crankcase relief valve pr test?

Q7) (25) Explain Starting air valve overhaul and checks

Q8) (25) Air starting valve overhauled and taken to the workshop, what all checks to be carried out.

Q9) (25) Explain Maintenance of exhaust valve, removal procedure, inspection.

Q10) (25) Exhaust valve seat replacement procedure how to do

Q11) (25) What are routine maintenance done on pneumatic control valve

Q12) (25) M/E Crankcase inspection & Checks

Q13) (25) Auxiliary Engine Crankcase inspection & Checks

Q14) (25) What are all check during the crankcase inspection, where is relief valve is situated

Q15) (25) Indications of crankcase explosion, action to be taken to avoid and after

Q16) (25) What is Crankshaft deflection, cause and its frequency (Running Hrs.) to be taken(calculated) and prevention of crankshaft deflection

Q17) (25) Crankshaft Deflection, what is Crank Web deflection curve, how to get

Q18) (25) Crankshaft deflection, if pop mark not there how to take crankshaft deflection

Q19) (25) How to check backlash of chain, maintenance on chain drive

Q20) (25) Crankshaft miss alignment reason

Q21) (25) How to test/check/inspect crankshaft misalignment, when to check, actions to take if misalignment.

Q22) (25) What is Tappet clearance, how to check and do adjustments, where is position of piston during tappet clearance // Tappet clearance procedure and value

Q23) (25) how will you check integrity of auxiliary engine cylinder head

Q24) (25) What you will Inspect, check on M/E Cooler

Q25) (25) What are Scavenge drain tank sounding precautions

Q26) (25) How to know stuffing box is working properly

Q27) (25) what all your generator checks while you take over watch (must & should mention first check the crank case oil level with the DIPSTICK then go to another answers)

Q28) (25) What checks to do in generator during rounds. Explain in detail

Q29) (25) When you are on taking on watch, what will you first check on generator

Q30) (25) Auxiliary engine checks while running

Q31) (25) What is E/R Crane safe working load, how to test, certificate if yes who will issue and when.

Q32) (25) Before going sailing how will you secure the ER overhead crane

Q33) (25) Port departure preparation // Prepare for Port arrival

Q34) (25) Why blow through engine

Q35) (25) Inspection, checks on Inter cooler during running

Q36) (25) How do you check foundation bolts of main engine

Q37) (25) Inspection checks on Top brazing

Q38) (25) Scavenge space inspection

Q39) (25) Crankcase inspection

Q40) (25) Is there M/E soot blowing // soot cleaning, how to carry out soot blow

1.11 TROUBLESHOOTING, ACTION TO BE TAKEN

Q1) (25) What is fatigue failure and which component? fail first in E/R or which component has high fatigue stress in ER

Q2) (25) Starting Air is not going in engine? What is the reason?

Q3) (25) M/E, A/E scavenge pressure low reason

Q4) (25) Cylinder head crack reasons

Q5) (25) Reasons for engine overspeed

Q6) (25) AE not starting, reasons

Q7) M/E // AE starting on Air, but not starting on fuel reasons, action to take.

Q8) (25) M/E // AE not starting, On Air, on fuel reasons, action to take.

Q9) (25) Main engine not starting, Reasons (was specific over T/G)

Q10) (25) main engine running, suddenly speed drop, reason

Q11) (25) M/E Lube oil low pressure alarm, reason

Q12) (25) Black smoke from M/E reason

Q13) (25) A/E lube oil daily consumption is 30 litter so what is the reason

Q14) (25) Generator lube oil low pressure, reason

Q15) (25) AE coming black smoking reasons

Q16) (25) If air cooler is fouled what will happen (wants to listen exhaust temp rises)

Q17) (25) Bluish tint in crankcase, reasons

Q18) (25) Scavenge fire indication to watch keeper

Q19) (25) What action you will take if scavenge temp high // increasing reason

Q20) (25) One unit Scavenge temperature high what should be the reason and what action.

Q21) (25) What is Scavenge fire, action to be taken, how to avoid

Q22) (25) How to extinguish scavenge fire?

Q23) (25) All M/E exhaust temp high reasons, what checks you will do?

Q24) (25) Main engine exhaust temperature high (one unit) reason, action to take.

Q25) (25) M/E jacket water temp increases for all unit // temperature high, reasons, action to take.

Q26) (25) M/E Jacket temp high one unit, reason, actions

Q27) M/E Jacket temp low reason, actions

Q28) (25) M/E lube oil pressure low, reason, Action to take

Q29) (25) M/E Lube oil pump not taking suction, reason, actions?

Q30) (25) All A/E exhaust temp high reasons A/E what checks you will do?

Q31) (25) A/E Jacket temp high one unit, reason, actions

Q32) (25) A/E Jacket temp high all units, reason, actions

Q33) A/E Jacket temp low, reason, actions

Q34) (25) A/E Lube oil pump not taking suction, reason, actions?

Q35) (25) Bridge informed smoke from funnel. What action to take

Q36) (25) Bridge informed sparks from funnel what action to take

Q37) (25) Suppose engine is running in sea and collision is going to happen how to immediately stop engine

Q38) (25) Puncture valve stuck in open position while manoeuvring, what will you do?

Q39) (25) Leaking air starting valve, actions

Q40) (25) What is your actions while your sea water suction pipe is leaking by crack (from sea chest side suction

Q41) (25) If you are doing local manoeuvring main air compressor stops, how u will you know what will u do,

Q42) (25) OMD alarm comes what action? Wanted to hear if the credibility of alarm true or false

Q43) (25) Starting airline explosion, reason, action to be taken to avoid and after explosion.

Q44) (25) How to know air starting valve is leaking at port // Valve in place, Valve in workshop.

2-CENTRIFUDGE, PURIFIER

Q1) (25) Difference between purifier and clarifier

Q2) (25) Explain purifier arrangement (cross question)

Q3) (25) Working of purifier, gravity disc purpose, what is use of gravity disc, what happen if we use large gravity disc

Q4) (25) Equation for purifier operation, describe separating force stroke law

Q5) (25) Purifier parts from bottom, brief description of working. Parts of purifier bowl?

Q6) (25) Type of gears and bearing in purifier and arrangement.

Q7) Material of various components used in purifier

Q8) (25) Purifier starting procedure

Q9) (25) How to start HFO purifier in Auto and Manual

Q10) (25) Required Separating temp for FO.

Q11) (25) Manual starting of Lube oil purifier

Q12) (25) How does purifier desludging takes place and cross questions (effects of density, temperature, gravity disc)

Q13) (25) Procedure of desludging of fuel oil purifier

Q14) (25) How to do purifier manual desludging step by step and function of all waters?

Q15) (25) likelihood and consequences of improper desludging

Q16) (25) Purifier specifications, type and details of purifier on your ship

Q17) (25) Purifier type? And difference between Mitsubishi and Alfa Laval?

Q18) (25) What is ALCAP purifier?

Q19) How water was separated on your purifier

Q20) (25) What is / was purifier and motor speed

Q21) (25) Interface in purifier, how it is maintained

Q22) (25) Purifier power transmission from motor to bowl // motor to shaft

Q23) (25) Why friction pads given in purifier, working, types

Q24) (25) Frictional pads no spares onboard, what to do?

Q25) (25) How to replace friction pads in purifier

Q26) (25) Purpose of backpressure valve in purifier and cross questions on everything

Q27) (25) Purifier Sump inspection

Q28) (25) What is Nomogram how to use, significance of Gravity disc and how to select.

Q29) (25) Which purifier required Gravity disc & when using Diesel oil do, we required to change Disc

Q30) (25) New bunker, change in specific gravity, what action is necessary in case of purifier

Q31) (25) Purifier overhaul, when to do, how to do

Q32) (25) In purifier how to measure vertical shaft alignment, which alignment needs to fixed first vertical or horizontal.

Q33) (25) How purifier vertical shaft is supported?

Q34) (25) Purifier make, rpm, how rpm is achieved, Verti height measurement how. Significance of it. What to do if clearance not within limits. Bearings in vertical shaft. Lower bearing type

Q35) (25) Purifier overflow (oil, water) reasons and how to rectify

Q36) (25) Reason for purifier bowl misalignment

Q37) (25) Purifier type, if not balance what action you will take

Q38) (25) Purifier gear mechanism, purifier rpm is it same as the motor rpm? (Cross)

Q39) (25) What there is difference between purifier starting and working rpm, motor rpm always same?

Q40) (25) Purifier rpm not maintained, action

Q41) (25) Purifier speed / RPM not coming reasons

Q42) (25) Purifier taking too much current even after sometime. Why? Actions?

Q43) (25) Purifier motor frequently cut in and cut out reasons

Q44) (25) Purifier bowl rotating excessively reasons

Q45) (25) Purifier vibration reasons

Q46) (25) Purifier excessive vibrations. Reasons.

Q47) (25) Horizontal vibrations on purifier

Q48) What are safeties on purifier

Q49) Safety for purifier motor and horizontal shaft

Q50) Reason for purifier not picking rpm, how will you come to know purifier reached rated rpm, how you will overhaul friction clutch

Q51) (25) What is Centripetal pump, application, working, will it work if Px direction is reversed

Q52) (25) Difference between centrifugal force and centripetal force?

3-COMPRESSORS

Q1) (25) Compressor nomenclature

Q2) (25) Type of compressor and specification of your ship.

Q3) (25) Why double stage is providing in MAC

Q4) (25) advantage of multistage air compressor

Q5) (25) air cooler purpose in compressor system

Q6) (25) What is compressor efficiency, what is difference of compressor efficiency between 2 stages and its relevance

Q7) (25) What is volumetric efficiency, how will maintain in MAC and how to improve

Q8) (25) What is Compound valve in MAC

Q9) (25) Unloader function

Q10) (25) What is Bumping clearance, significance

Q11) (25) How to adjust bumping clearance in Main Air Compressor.

Q12) (25) Low bumping clearance of compressor

Q13) (25) How to decide capacity of air bottle

Q14) (25) What are safeties of MAC

Q15) (25) SOLAS requirement for air receiver // Safety on compressor air bottle

Q16) (25) Compressor valve o/h, Connecting rod checks after o/h

Q17) (25) After air compressor suction and discharge valve overhauling how do u check they are not leaking

Q18) (25) How to know discharge valve leaking of compressor leaking

Q19) (25) Safety valve lifting pressure on air bottle and boiler

Q20) (25) size of air bottle and capacity and What temp fusible plug melts.

Q21) (25) Mounting on Air Reservoir

Q22) (25) What is Fusible plug, various location & Material

4-BOILER

Q1) (25) Boiler specifications, Types of tubes present in a boiler

Q2) (25) Exhaust gas boiler specification

Q3) (25) Boiler Types and applications

Q4) (25) Type of boiler on board and its capacity.

Q5) (25) Boiler mountings

Q6) (25) Internal - boiler mountings

Q7) (25) Safeties on boiler // Boiler safeties

Q8) (25) What is Boiler safety valve, pressure settings, regulation where mention

Q9) (25) Types of safety valve and construction difference

Q10) (25) How many safety valves on boiler reason, pressure setting.

Q11) (25) Specialty in high lift safety valve

Q12) (25) Safety valve testing, procedure.

Q13) (25) Boiler safety valve lift D/4 how to calculate D

Q14) (25) Safety valve lifting pressure on air bottle and boiler

Q15) (25) What are different types of boiler burner, and explain how it works

Q16) (25) What is Turndown ration and Turndown clearance

Q17) (25) Boiler Air fuel Ratio

Q18) (25) significance of air fuel injection of boiler

Q19) (25) Boiler pilot burner maintenance. What if clearance not proper

Q20) (25) Boiler Accumulation pressure test full procedure, why we do accumulation test

Q21) (25) Boiler Hydraulic pressure test full procedure

Q22) (25) What is swell and shrinkage, reasons, action to take, how to avoid

Q23) (25) What is boiler accumulation test, If working pressure is 10 what will be the 10% of that pressure // Explain Accumulation test of boiler

Q24) (25) How you will check the safety valve by doing accumulation test procedures

Q25) (25) What is foaming and priming, actions to take

Q26) (25) What is Hot and cold corrosion, how to reduce hot & cold corrosion

Q27) (25) What is caustic embrittlement

Q28) (25) What are Boiler water tests (types) and ppm, what test done on board

Q29) (25) How to take boiled water samples, (you should about one more valve that is between the sampling outlet valve and boiler)

Q30) (25) What is phosphate test, why we do phosphate test, process

Q31) (25) What is Chloride test, test process

Q32) (25) Chloride value desired for boiler

Q33) (25) Reason for high chloride level

Q34) (25) Chloride content increased in boiler how to control it, causes of chloride increasing

Q35) (25) chloride value and it is feasible to have chloride and why we maintain that particular value

Q36) (25) Chloride level increased (chloride content is high), what to do

Q37) (25) Chloride test in details value n all if value become o what happened and if value become more

Q38) (25) Chloride vs hardness test

Q39) (25) What should be Ph level of boiler water

Q40) (25) Types of boilers blow down and procedure, how many valves are there,

Q41) (25) Boiler blowdown safety

Q42) (25) Procedure for scum blowdown, Precautions

Q43) (25) Why blowing controlling with intermediate V/v

Q44) (25) Boiler water circulation pump route of circulation?

Q45) (25) Boiler water circulating pump from where to where and which all valve you will open.

Q46) (25) What is Level gauge (Gauge glass) in boiler, construction, safety,

Q47) (25) How gauge glass is fitted with respect to centerline of boiler

Q48) (25) Boiler gauge glass blow down (blow through) process, safeties, why it is being done

Q49) (25) Soot blow procedure and cross question, why, when... how to know effectiveness

Q50) (25) Soot Blowers, Number of soot blowers present in boiler, Sequence of soot blower operation

Q51) (25) How to know soot blow was successful

Q52) (25) How to check the condition and performance EGB just by looking

Q53) (25) How many modes are there in aux, Boiler why we have them and what purpose does it serve

Q54) (25) How to lineup boiler, cold starting of boiler, Checks and precautions

Q55) (25) Line up for boiler circulating pump

Q56) (25) What to do when no water level is shown in boiler gauge glass

Q57) (25) What is observation tank, daily checks // Checks to be carried for observation tank

Q58) (25) Reasons for oil in observation tank and what you will do?

Q59) What is cascade tank, what checks/inspection done.

Q60) (25) Cascade tank level low reason

Q61) (25) What to do if oil layer is there in the cascade tank?

Q62) (25) Oil in hot well reasons and actions?

Q63) (25) Boiler tubes leaking how you will came know

Q64) (25) Boiler tube leaking how will you make out, what action you will take, you found the leaking tube what action will you take to rectify the same??

Q65) (25) Boiler low level alarm what will be action

Q66) (25) Boiler alarms and trips

Q67) (25) Reasons for Black smoke from Boiler.

Q68) (25) Black smoke from Boiler at port. What you will do?

Q69) (25) Boiler fire what actions to take

Q70) (25) Economiser fire, EGB fire reason, action to take.

Q71) (25) Difference between safety and relief valve

Q72) (25) Name Parts of boiler burner?

5-REFRIGERATION SYSTEM

Q1) What is 1 ton refrigerant and it is equal to

Q2) In Refer system which refrigerant to use & properties

Q3) (25) Refer L/O properties

Q4) What are various Refer system components.

Q5) (25) Explain Reefer compressor working, Provision compressor working

Q6) Explain working of Refrigeration cycle, what is subcooling

Q7) (25) In refrigeration system, what all things are fitted between the receiver and TEV

Q8) (25) Discharge pressure of air con and refrigeration plant, exact value

Q9) (25) How superheat is maintained in refrigeration

Q10) (25) Significance of Superheat in refer plant,

Q11) (25) Critical temperature in refer plant and what is the significance

Q12) What is Subcooling and how it is achieved

Q13) What is difference between AC compressor, Refer compressor and Air compressor

Q14) How Unloader in refer, AC compressor works

Q15) How unloader Air Compressor or what is the diff between refer and Air Comp.

Q16) (25) Why Refer compressor is belt driven

Q17) (25) What is special in Refer Pressure Gauge & Dial Gauge, Compound gauge

Q18) What is internal and external equalizing

Q19) (25) What are/is functions of expansion valve, location in system

Q20) Explain working of thermostatic expansion valve, no. of pipes in TEV

Q21) (25) What is Differential pressure cutout for refer comp

Q22) (25) What is HP and LP in refer system, how many pressure cut offs in system

Q23) (25) What is inlet and discharge pr. & temp for refer comp.

Q24) (25) What is Back pressure valve in refer system, function, location, faults

Q25) Why Backpressure for veg room only.

Q26) How is Meat room, fish room and veg room temp maintain

Q27) (25) What are Refer system, Operating pressure and temperature

Q28) (25) How to check oil level and pressure in refer system

Q29) How to detect Refer system leak/ leak test,

Q30) (25) How to Charge oil in refer compressor (what catastrophe may occur if plug removed while filling?) (what are different methods, procedures)

Q31) (25) Refrigerant bottle...how many connections

Q32) (25) How to identify refer plant drier filter is choke

Q33) (25) Indication of air ingress and how to remove air present in Refer plant, how to confirm.

Q34) Reasons for air entering in refer system, what are effects of air in refer system

Q35) Reasons for short cycling of refer compressor, how to avoid / overcome.

Q36) (25) Reasons for Refer system suction Line freezing

Q37) (25) Reasons for negative temperature in vegetable room

Q38) What was make of your refer compressor, type of compressor

Q39) What are Refer compressor safeties, AC compressor safeties

Q40) (25) Refer plants safety

Q41) What maintenance you carry on board for refer system and its components.

Q42) What checks you do during your daily rounds with respect to refer system.

Q43) What problems can happen in refer system, what have you face on your ship

Q)44 (25) What is difference b/w sea water n reefer suction discharge gauges

Q45) (25) How will you charge refrigerant in AC, Refrigeration Charging Methods explain // (Hand Pump)

Q46) (25) AHU components?

Q47) (25) How is Humidity in accommodation maintained, what are comfort values

Q48) (25) How is Temperature in accommodation maintained, what are comfort values

Q49) (25) What is HCFC?

Q50) (25) Is HCFC refrigerant nowadays is using?

Q51) (25) Which refrigerant nowadays using?

Q52) (25) Why HFC used?

Q53) (25) What is Capacity controller in air conditioning system

Q54) (25) Suction pressure low in ahu reasons?

Q55) (25) Reefer compressor why refrigerant goes thru crankcase and not directly into compressor?

Q56) (25) Describe AC system, components, various parameters

Q57) (25) Spare connections of refrigerator

Q58) (25) What is Recovery bottle when to use

Q59) (25) Meat room temp not maintained why?

Q60) (25) What is Undercharged refrigerant, cause, problems

Q61) (25) Why no fly wheel in refer compressor

Q62) (25) How to know refer dryer is chocked.

6- AUX- MACHINERY

Q1) Working principle of Fresh Water Generator

Q2) (25) What is Reverse osmosis

Q3) (25) Fresh Water Generator, how vacuum is created, loss of vacuum what are the causes

Q4) (25) FWG starting procedure

Q5) (25) FWG not producing enough water reasons

Q6) (25) FWG intermittent salinity alarm. Reasons

Q7) (25) Explain, Hydrophore system

Q8) (25) Plate type Heat Exchanger expansion arrangement

Q9) (25) Material of plate in plate type heat exchanger

Q10) (25) Tube type heat exchanger expansion arrangement

Q11) (25) Where does sea water pass in air cooler inside or outside tube

Q12) (25) OWS working

Q13) (25) OWS maintenance and checks,15ppm probe checks, 15ppm alarm actions

Q14) (25) Routine checks on OWS, what other checks.

Q15) (25) What is Safety valve, difference between relief valve

Q16) (25) You got a call from the bridge that no water in accommodation // galley, reason?

Q17) (25) Dismantling of plate type heat exchanger

Q18) Working of plate type heat exchanger.

Q1) Different types, classifications of pumps, name of parts

Q2) Working principal, how centrifugal pump

Q3) (25) What is NPSH, definition, unit and formula, calculation, NPSH available and NPSH required?

Q4) (25) How to reduce flow of centrifugal pump

Q5) (25) What is priming, how to achieve, details related to fire pump priming

Q6) (25) How do you purge centrifugal pump

Q7) (25) Vertical centrifugal pump parts name

Q8) (25) Parts of centrifugal pump

Q9) (25) How impeller is connected to shaft, Wear ring function

Q10) (25) Wear ring location, how wear ring is changed and maximum limit for clearance? it is 0.2 mm he told

Q11) (25) What is Lantern ring, why needed, wear down measurement

Q12) Working principal, how positive displacement pump works, reciprocating working full

Q13) (25) Checks on positive displacement pump

Q14) (25) Backlash in gear pump, purpose, value

Q15) (25) Types of Bilge pump, operation and construction

Q16) (25) Capacity of bilge pump, Bilge injection valve location

Q17) (25) Pump misalignment correction method, how will we ensure the misalignment don't not come again.

Q18) (25) Pump to motor coupling material?

Q19) (25) Centrifugal Pump Overhaul & Checks

Q20) (25) How to carry out greasing of Centrifugal pump

Q21) (25) How will you replace gland packing of globe valve

Q22) (25) Gland packing renewal how Will you measure the length & thickness

Q23) (25) Bilge pump overhauling process

Q24) (25) Type of bilge pump on your ship

Q25) (25) What is Bilge Pump pressure

Q26) (25) Explain Integrity test of bilge system

Q27) (25) Greasing of pump procedure. (don’t forget to tell opening of drain so that old grease comes out)

Q28) (25) LT cooler pump capacity

Q29) (25) Ballast pump capacity

Q30) (25) Type of Cargo pumping arrangement (How does it work, simple cross qns)

Q31) (25) Purpose of gland steam in COPT.

Q32) (25) FRAMO pump type and pressure.

Q33) (25) Circulating Pumps, Reason for standby pump running in opposite direction, Solution to counter this issue // Circulating pump reversing its flow what action,

Q34) (25) Emergency fire p/p not talking suction. Actions?

Q35) (25) Bilge pump not taking suction even though everything is perfect like pipe, valves, line up

Q36) (25) Reasons bilge pump not taking suction from aft BW? Action?

Q37) (25) One of the Bilges is flooded and pump not taking suction, actions to be taken

Q38) (25) Which type of valve in bilge suction line and why we use it

Q39) (25) Why only jacket water has Butterfly valve

Q40) (25) Butterfly valve overhaul

Q41) (25) Type of valve in bilge pump (non-return valve- he is expecting)

Q42) (25) Working and Construction of Quick Closing Valve

Q43) (25) Difference between non return valve and crew down globe vale and how will you identify it by watching.

Q44) (25) How to check bilge line checking

Q45) (25) Working of single screw positive displacement pump

Q46) (25) What is Cavitation? Problems, defects found in Pumps

8-STEERING GEAR, SHAFTING

Q1) (25) Types of steering gear & Types of associated pumps

Q2) (25) Steering gear type and hele-shaw pump

Q3) (25) Steering gear construction & working

Q4) (25) Steering gear safeties

Q5) (25) Steering gear check before sailing

Q6) (25) Which type of steering gear in your ship and which pump was used if hydraulic then explain working of hydraulic pump, Split pin

Q7) (25) What is safe-matic steering gear, explain working

Q8) (25) What is Follow up and non-follow up steering gear systems

Q9) (25) CPP, how astern, ahead moment in CPP

Q10) (25) Types stern tube

Q11) (25) Stern tube seals. How to verify the integrity

Q12) (25) How will you come to know Stern tube leaking? what actions you will take?

Q13) (25) Intermediate shaft bearing

Q14) (25) Thrust block function, location and clearance measurement

Q15) (25) How you will increase the propeller efficiency

Q16) (25) Losses in main engine propulsion

Q) What is Rotary vane type steering gear, advantages and disadvantages

9-METALLURGY

Q1) (25) What is ferrite, perlite and cementite

Q2) (25) What are phases of iron, what is critical temperature.

Q3) Properties of materials

Q4) What are different types of stress, give example in engine room / ship

Q5) (25) What is Fatigue // fatigue stress

Q6) (25) What is embrittlement

Q7) (25) Define creep

Q8) (25) What is Hot and cold corrosion, how to prevent

Q9) (25) What is normalizing

Q10) (25) What is Brittle fracture

Q11) (25) What is nitriding & case hardening

Q12) (25) What is Annealing (How the metal is cooled)

Q13) (25) Annealing (materials in engine room which are annealed)

Q14) (25) Different between annealing and normalizing

Q15) (25) What is the pipes in your ship made of

Q16) (25) Sea water pipe material, why

Q17) Name Ship side valves and materials, why

10-MAINTENANCE, REPAIR

Q1) (25) Vernier least count

Q2) (25) What is Flaring tool, uses

Q3) (25) Gaging tool, why and where we use it

Q4) (25) What is Poker gauge, uses and how to measure

Q5) (25) Trammel gauge use

Q6) (25) Working of hydraulic jack and its parts

Q7) (25) Risk assessment cross question

Q8) (25) Explain hot work permit

Q9) (25) General use welding electrode properties

Q10) (25) Welding defects

Q11) (25) What is cast iron, how to do welding, which type of electrode used, Safeties during welding

Q12) (25) Cast iron welding problems

Q13) (25) What are Non-destructive tests, Dye penetrant test, explain, uses on board.

Q14) (25) Name all Destructive tests, applications

Q15) (25) Crack repairing method

Q16) How to classify pipes and tubes.

Q17) (25) Schedule 80 and 40 which has bigger ID

Q18) (25) Pipe fabrication procedure

Q19) (25) How to repair leakage of sea water pipe line, process.

Q20) (25) How to repair temporary leak in sea water pipe

Q21) (25) Main Sea water pump gland leaking action

Q22) (25) Sea water pump leaking action

Q23) (25) How to remove broken stud from a thick metal piece, How to remove broken stud from plate.

Q24) (25) If 10mm bolt is there then what spanner will you use

Q25) (25) What tools required to do internal thread in lathe machine

Q26) (25) what is the formula for choosing drill bit for M18 thread required

Q27) (25) How do you make internal threads on lathe machine for a large diameter pipe and which tools are used

Q28) (25) Any overhaul u did onboard

Q29) (25) How to check Trueness of shaft // How to check shaft alignment.

Q30) (25) How to do shaft alignment of motor and pump shaft?

Q31) (25) Plate type exchanger maintenance? Wanted to hear before opening measure the distance

Q32) (25) How to clean plate type heat exchanger

Q33) (25) Tube type heat exchanger tube leaking…how to find leakage.

Q34) (25) How ball bearing is inserted to the shaft

Q35) (25) Intermediate shaft bearing checks

Q36) (25) Soot blowing procedures

Q37) (25) What is bunker line pressure testing, process, checks, precautions

Q38) (25) Pressure gauge calibration

Q39) (25) What to check in pneumatic valves during maintenance

Q40) (25) Pipe corroded how to fabricate new pipe // Pipe fabrication

Q41) (25) What is 2g 3g 4g welding, TIG, MIG welding

Q42) (25) What are different types of spanners, application/uses and Spanner sizes

Q43) (25) difference b/w drill and reamer

Q44) (25) how to order a bolt

Q45) (25) Copper pipe repair and tool used to repair

11-MISCELLANEOUS

Q1) (25) What is Steam trap, function and types

Q2) (25) What is Armato Coupling

Q3) (25) What is cofferdam, Purpose

Q4) (25) What is Compound gauge, where is it used, possible problems,

Q5) (25) What is international shore coupling

Q6) (25) What is Volumetric efficiency

Q7) (25) What is Flame screen and spark arrestor, differences

Q8) (25) What is Back lashing in gears, purpose, checks // Significance

Q9) (25) Safeties in oxy acetylene welding, colour, threading etc. regulations

Q10) (25) Water in bilge well actions to take

Q11) (25) Engine room flooding in your watch. Your actions

Q12) (25) How to calculate quantity of fuel in the fuel tank?

Q13) (25) What is Duplex filter, filter size, application, location, cleaning and change over method.

Q14) (25) Comp & motor room safety, which type of ventilation in motor and comp room

Q15) Steps / process for Arrival and departure from port, for engine room operation

Q16) What is 1 hr. notice / X Hr. notice form bride to E/R, significance and action taken