

MEK ORAL

Q.1 Duties of engine crew

Ans- Assist ship engineer in routine maintenance and repair work

- lubrication moving parts
- cleaning parts, machinery spaces
- operate & maintain pumps and valve
- watchkeeping (checking parameters-temperature, pressure, level, abnormalities)
- painting
- look after ER stores and spares

Q.2 what is machinery space?

Ans- where machinery are fitted or kept.

Q.3 what is system?

Ans - a group of machinery that support ship operations.

(boiler, air compressor, fuel oil & lube oil system, cooling system, sewage system)

Q.4 what is engine?

Ans- Engine is a machine that convert any energy in to mechanical energy.

Q.5 what is machine?

Ans- A group of components assembled together for achieving mechanical outcome.

Q.6 Types of engine use on ship?

Ans- Two stroke- Main Engine- for ship movement or Propulsion

Four Stroke- Auxiliary Engine- For Generate Electricity on ship

Q. what are machinery found in engine room & Workshop?

Ans- Engine Room- main engine,auxiliary engine, valve, pumps, boiler, incinerator, sewage plant, purifier

Workshop- lathe machine, pedestal & hand drill machine, bench grinder, bending machine, welding machine

Q. what emergency machinery found in engine room?

Ans- - Emergency fire pump

- emergency generator

- fire detection system

- fire extinguishers(fix and portable type)

Q.7 What is Emergency Escape.

Ans- It is A short route that use in emergency situation for escape immediately.

Q.8 what type tools are used on ship?

Ans- Hand Tools, measuring tools, cutting.

Hammers- ball peen, straight peen, cross peen, soft, mallet, sledge, chipping, claw

(hammers are used for striking, shaping, adjusting, removing work piece and parts)

Chisels- Flat, diamond point, cross cut, round nose, side cut

(chisels are used for cutting and chipping of metal piece)

Screw Driver- Flat, Philip, Stubby, Insulated, tester

(used for tightening and loosening screws)

File- Flat(Bastard, second cut, fine Cut), Round, half round, triangular, square, needle.

(used for removing extra material)

Hacksaw- Fix & adjustable(forward Teeth), Hand, power, pipe cutter, hole saw

(hacksaw used for cutting metal rods, pipe, tube, cables)

Punches-Hole, number, letter, center

(for marking out locating center)

Vice-bench, pipe, drill vice

(for holding work piece and pipes or tubes)

Spanner- Open ended(single & double ended)

Ring Spanner(double ended,normal,special duty)

combination(one side open one side ring Spanner)

adjustable(hook spanner)

Heavy duty spanner(slogging spanner)

Socket Spanner(sockets,extension, couplings- universal joints, ratchet drive)

Pipe wrench

Allen key

Plier- Combination, round nose, flat nose, snipe nose, circlip,insulated, multi grip

(holding workpiece , gripping, pulling, turning small parts,twisting,pulling)

lifting tackles & device -eye bolt, wire slings, shackle, chains, hooks, pullys blocks,chain blocks,
ratchet blockes, cranes

(lifting device are used for lifting and moving heavy objects)

Mesuring tools-tri square,callipers, vernier, micro meter, steel scale , sounding tape, measuring tapes,
feeler gauge, thread gauges

Taps & Die - Taps(tapper, plug, bottoming with tap handle), die sets(Die and Ratchet handle)

(taps are use for making internal threads, Die are used for Outer Threads)

Q.9 What precaution take during using tools?

Ans - Tools are clean oil and grease free, properly fitted & holded During use,use wright tools,

Q. what Precaution taken while using liftings device?

Ans- - check lifting gear is swl is enough for objects

- check condintion of lifting device will be proper lubricated, and chains are grease free

- make fast hook and slings proper

Q.10 what mesurment units are use on ship?

Ans- Pressure- Kg/Cm² OR BAR

Temprature- Degree(0) celcius or centigrade

level -meter and centimeters(cm,m,mm)

Tank Contents-cubic meter or liters(m³,l,tonnes)

weight-Kg

distance-Nautical Mile

Ship speed- Knot

Current-A(ampere)

Voltage-V(volt)

Power-W,KW(watt or kilo watt)

Frequency-Hz(hertz)

Revolutions-RPM(revolution Per minutes)

Q.11 instruments In Engine Room

Ans- Thermo meter- pocket(vertical),scoope,pyro,infrared

Pressure gauge- Pressure,compound, vaccume gauge

Electric indicator- Ammeter , voltmeter, power meter

level gauge-gauge glass(tublar,reflection,bicolour typ),sight glass,dip stick

Q.12 Name The Auxiliary Equipment or Machinery Onboard

Ans- Valves & pumps

Purifiers

boiler

Air compressor

Auxiliary generators

Fresh water generator

sewage treatment plant

Air condition

hydrophore

ER ventilation

Incinerator

Cargo handling Gear

Q.13 What is function of valves?

Ans- valves are use for control flow of all liquids and air .

Q.14 Types OF valves

Ans- Globe Valve(screw Type stop and non return)-steam,air,water,oil

Gate Valve-ballast line,cargo line, Sea water line, bunker line

butterfly valve- deck line,over board discharge

Strom valve- accomodation over board discharge

cock valve-cargo line on chemical and oil tankers

Check valve(flow in one direction)- Overboard discharge,feed valve in boiler

Spring Loaded- Safety valve, relief valve

solenoid valve- Automatic electric operated -water or oil line

Q. 15 Parts of gate valve

Ans- Hand wheel, spindle,stuffing box, valve cover, valve disk, valve seat, casing

Q.16 Parts of Globe Valves

Ans- hand wheel,yoke,yoke bush,gland, gland bolt,bonnet,gland packing,stem, stem nut,disk,disk seat,body,flange

Q.17 how many Types of pumps use on ship?

Ans- Reciprocating Pump(Piston Type)- Bilge pump

Gear Pump-Fuel oil and lube oil purpose

Screw Pump- main engine lubrication & fuel oil transfer

Centrifugal Pump - Sea water And Fresh water circulation, cargo pump on tanker

Q.What is priming?

Ans- priming is a process for removing air from Pump System(Centrifugal Pump).

Q. watch on Pumps

Ans- check Pressure, load(motor AMP), vibration, Leakage from gland or seals, temperature of motor

Q. what is joints, gasket and packings?

Ans- joints gasket and packings are used for prevent leakages from between two parts like pipe flange, valve cover, valve body, cylinder head etc,

Q. what material used for made joints, gasket , packing.

Ans- Rubber, compressed sheet, cork, felt, sponge, plastic, thermal material

Q.Use of oil on Board

Ans- oil is use for

As Fuel- diesel, low sulphur fuel oil, heavy fuel oil

As Lubrication- ME, AE, Compressor, purifiers

As power Transmission- hydraulic operation, crane operation, mooring winch, windlass

As Heating medium-

Q. type of filter use on board

Ans- filter are used for fuel and lube oil cleaning

Strainer - for removing large solid particles

Auto clean filter- for removing solid particle by self cleaning features

Centrifugal purifier-for removing tiny solid particale,water, sludge

Q. What is fresh water generator & tell about its benefits.

Ans- fresh water generator are used for generate fresh water from sea water by evaporation.

benefits- more cargo space

-saving money from buying cost of water

- available quality water supply for drinking, cooking, boiler feed, cooling water for ME

Q.What is use of Hydrophore?

Ans- it is used for domestic water supply by pressurize tanks.

Q. what is Boiler and Its type?

Ans- Boiler is used for steam generation,and steam use for fuel oil heating, oil purification, domestic air and water heating, cargo heating on oil tanker.

Type of tanker-

1.water tube type- high pressure

2. smoke tube type-Low pressure

Q.boiler Mountings

Ans- -2safety valve

- 2 gauge glass

- steam stop valve

-feed check valve

- pressure gauge

- blow off cock

- man hole door

Q.watch on boiler

Ans- - Water level in boiler and hot well

- steam pressure

- leakage from joints
- feed pump operation

Q. what is waste management?

Ans- it is management of waste materials according to MARPOL Rules.

Red- Plastic waste (land it shore)

Green- Food Waste

Yellow - incinerator ashes (land it shore)

Blue- Operational waste(land it Shore)

Orange- cooking oil (incinerate or land it shore)

gray--Domestic waste (incinerate or land it shore)

Brown- cargo residue

Q. What is Oily Water Separator?

Ans- OWS remove oil traces from bilge water. it is important machine according MARPOL rule .

water discharge allow automatically by monitor system if Oil content below 15PPM

Q. What is Sewage Plant?

Ans- it is system fitted onboard according MARPOL Rule for treat and discharge of human waste.

it have 3 chamber-aeration chamber, settling chamber, chlorination chamber

Q.Composition of Paint & Benefits.

Ans- Composition -Pigment, vehicle, drier, primer

Benefits- Prevent from corrosion, direct contact with atmosphere,less repair

Q. how to prepare surface for painting.

Ans- After chipping, removing rust and scale clean and wipe off dirt, grease and oil by cotton cloth.

Q.Types Of Paint

Ans- Alkyd paint- Super Stucter, internal deck,bulkheads

Bituminous paint- Chain locker

Chlorinated rubber Paint- Decks, ship side

Epoxy Paint- Decks ,Ship Side(very costly and Long lasting)-binder and hardener

Polyurethane Paints- suitable for tanks on chemical tanker

Anti fouling Paints- Ships bottom (before dry dock flooding)

Q.Chipping and painting Equipments.

Ans- HTV - hand Transmitted Vibrator

Needle gun- use for removing rust using multiple needle

pneumatic wire brush

Electrical chipping machine

Brushes- Flat,Angled,Stencil,Roller

Spray Gun-external mix type, internal mix type

Respirators

Q. Type Of defects in Paint.

Ans-Holidays- small patches left during painting

sagging- paint flow down

cracking- top coat fractures

peeling- poor adhesion of paint

blistering- small blisters under paint surface

slow drying- due to grease or dirty surface

crawling- due to oily or grease surface

Q.what is Dry Dock ?

Ans- Dry Dock is the repair or service yard for ships.

Q. Dry Dock works

Ans- Under water cleaning,grit blasting and painting

Repair and surveys of hull and machinery

inspection of rudder,propeller and thrusters,speed log ,echo sounder

changing anodes

end to end change and painting of anchor chain

Q.Types of Nut

Ans-lock nut,hex plain, slotted, castel,flanged,butter fly etc.

Q.types of washer

Ans- plain, helical spring, toothed lock washers.

Q. Types of pins-

Ans- Cotter pin, dowel pin, spring locking, quick lock,clevis pin, tapper, grooved pins, flat metal locks.

Q. Type of Lock rings

Ans- Snap ring - internal and external

Q.type of keys

Ans- square or rectunglar key, woodruff key

Q. what is bearing pullar?

Ans- bearing pullar is used for removing bearings , drives, couplings from shafts. it is two types- two legs and three legs type.

Q.what is stud extractor? and how it is used?

Ans- it is use for removing broken studs or bolt , first mark center by center punch and make a hole by drill on broken stud or bolt then remove stud extractor.

Q.What is use of Diesel Engine Onboard?

Ans- Main Engine - 2 stroke type,- for Propulsion or movement of vessel

Auxilary Engine-4 stroke Type- use for Produce electricity

Q.What checks or watch on Main engine and Auxilary Engine ?

Ans- Temprature- Exhaust,cooling water,lubrication oil,fuel oil

Pressure- lube oil, cooling water, fuel oil

Levels- lube oil sump, turbo charger oil, cooling water expansion tank, fuel oil service tank

Abnormalities- noise, leakage of water, oil, Air

Q. Parts of main Engine?

Ans- Cylinder head, Fuel injector, air starting valve, exhaust valve, relief valve, cylinder liner, Piston, Piston Rod, Stuffing Box, Cross head, Connecting rod, crank shaft, bottom end bearing, bed plate, crank case, crank case relief valve, Turbo charger(constant type), scavenge manifold

Q. Part of Auxiliary Engine?

Ans- cylinder head, rocker arm, intake valve, exhaust valve, Fuel injector, push rod, cylinder liner, piston, piston ring, gudgeon pin, connecting rod cam shaft, fuel pump, bottom end bearing, crank pin, crank shaft, oil sump, turbo charger (Pulse Type), exhaust manifold

Q.18 what is Air compressor?and how its works?

Ans- it is machine that is used for getting compressed air up to 30 bar

Q.19 Air compressor mounting

Ans- Air suction filter

Low pressure safety valve

high pressure safety valve

Low pressure stage pressure gauge

high pressure stage pressure gauge

lube oil gauge pressure gauge

discharge pressure gauge

thermometer

lube oil pump

lube oil filter

thermostate

solenoid valve

busting disc

Q. how to start Air Compressor?

Ans- -check lube oil level

- open discharge And air bottel filling valve
- open cooling water inlet and outlet valve
- check unloder are open
- start motor

Q.running checks on air compressor

Ans- -oil level

- temprature
- discharge pressure
- cooling water supply
- abnormalities(vibration and sound)

Q. Compressed Air Type?

Ans- 1. Starting Air For M/E, A/E (20-30 Bar)

2. Servive Air(7 Bar) cleaning, tools operations, gangway motor, penumatic machinery

3 controled air(7 Bar)

Q. Air Bottel Mounting?

Ans- Filling valve, M/E Starting Supply, A/E Starting Supply, service air supply,controled air supply, Drain Valve, Pressure Gauge, Man hole door,Relief Valve, Fusible Plug.

Q. Mesurment Instruments Use and Name.

Ans- Caliper- Inside And Outside - For Inside diameter and out side dia meter

Steel Ruler- For Mesuring Length

Vernier Caliper- (inside dia, out side dia , depth)

Micro Meter-(Out side and inside)

Depth gauge -

Tri Square- 90 degree surface

divider-

Q. Pedestal Drill Machine Parts

Ans- Base, column, table , table clamp, motor, v belt, step cone pully, drill feed lever, spindle head, spindle, chuck, drill bitt, chuck key

Q. Use OF lathe Machine

Ans- For Turning- Reduce The Diameter OF work Piece

Facing- Reduce the Length of work Piece

Knurling- Making Grip on rod

Parting- Cutting in two parts

Threading- Thread Making

Drilling- Making Axile hole in circular rod

Boring- enlarging the axile hole dia

Chamfring- removing sharp edge

Q. Parts of Lathe Machine

Ans- Motor, Fly Wheel, V belt, Engage and disengage lever, step cone pully, fly wheel guard , gear box, reverse & forward switch, head stock, spindle sleeve, driver plate, three jaw chuck, live center, carriage, tool post, compound rest, thread dial indicator, cross feed lever, half nut lever, handwheel, apron, lead screw, feed rod, dead center, tail stock , bed, set over screw, chip tray ,

Q. Safety Precaution During working on Lathe Machine.

Ans- Use Proper PPE (safety Goggles) never use Hand Gloves , proper Centring work of workpiece (no bubbling), tight tool, correct position of tool

Q. What is a welding and Its type?

Ans- welding is a fabrication process that joining materials causing fusion or melting the material.

Welding type - Arc welding, gas welding, fusion welding

safety precaution- PPE(Flame proof Boiler Suit, Spat, Leather Apron, Leather gloves, welding

Q.Electric Welding(ARC) Equipment

Ans- Electrode holder, electrode, welding cable, earth clamp, electrode dry case, welding machine,

Q. Gas Welding & Cutting Equipment

Ans- Gas Welding- welding torch, pressure gauge and regulator, oxygen and acetylene tube, flash back arrestor, oxygen and acetylene cylinder, spark lighter, apparatus wrench

Gas Cutting- torch, pressure gauge and regulator, oxygen and LPG, flash back arrestor, oxygen and acetylene cylinder, spark lighter, apparatus wrench

Q. What is Lubrication and Lubricants ?

Ans- Lubrication is used to reduce friction between two moving parts.

Lubricants are used in the lubrication process (oil, grease,)

Q type of lubrication Method

Ans- Splash Lubrication - Crank case

Pressure circulatory system- cylinder, turbo charger,

Bath type

drip feed

Mist type

grease cup, grease gun

Q. what type level measuring Devices?

Ans- Dip stick, sounding rod, sounding tape, level gauge, sight glass, remote level indicators.

Q. What is Lagging and Insulation?

Ans- Lagging is insulating material wrapped around pipes, tanks to prevent heat loss.

Insulation Material- Glass wool, rock wool, shredded paper, plaster of Paris, cement bricks

Q. Name Type of Chemical and Its uses on board?

Ans- Chemical Type- Alkalies, mild acid, chemical compound

Chemical use on board- 1. changing and controlling properties of cooling water of diesel engine

2. changing and controlling properties of boiler water

3. fuel treatment, cleaning parts, fuel treatment

4. fire extinguisher

5. paints

Q. Safety precaution for handling chemicals

Ans- Risk Involved- splash on body, toxic fumes, fire by chemical reaction

precaution- understand risk involved in chemical, first Aid as per MSDS, use proper content.
prevent contact, proper handling,

Important PPE- LATEX gloves, apron, goggles, face mask

Q. What is MSDS?

Ans- Material Safety Data sheet is a written information about chemical type, precaution, First Aid

Q. What is steering gear, and its use, and parts?

Ans- steering gear is a system that turns rudder for steer vessel,

parts of steering gear parts- Power Unit(Pump, Pipes, valves, Hydraulic oil)

Actuating Unit(Rams, tiller, rudder stock)

Control unit(transmitter, receiver, feedback)

On bridge parts- steering wheel, transmitter, rudder angle indicator

Q. what is tank and type of tank on board?

Ans- tank is a compartment where all liquids are stored.

types of tank on board- fuel oil tank (storage, settling, service)

diesel tank(settling service)

ME Cylinder oil tank

ME crank case oil tank

boiler feed tank

fresh water tank

ballast tank

Q. tell the name of tank mounting?

Ans- filling connection, air vent, outlet valve, man hole door, sounding pipe, overflow line, drain valve

Q. What is Emergency?

Ans-Emergency is a situations that need imediate action it can cause Life threat, property loss, pollution

Q. Emergency in engine Room

Ans- 1. Fire 2.Blackout 3.machinery failuer 4. injury 5. flooding 6. grounding 8.Explosion

Q.Alarms in Engine room

Ans- Fire alarm, machine failuer, general alarm, co2 alarm

Q. Fire Extinguishing equipment found in engine room

Ans-