## 2 Marks question Bank for ME 802 General & Motor

- 1 Name any 5stationary parts and moving parts of a large 2-stroke diesel engine?
- 2 Why in certain engine the bottom half of crosshead bearing is of single pin
- 3 What all factors affect the crank web deflection readings accuracy?
- 4 Why counter weights are added in the crankshaft?
- 5 What are the types of crank shaft?
- 6 Why in certain engine the hole is bored through the crank pin?
- 7 In a large cylinder head liner, how thermal expansion is accommodated?
- 8 State why engine cooling water treatment necessary.
- 9 How the cylinder cover and the liner joining surface sealed against the gas pressure.
- 10 What are the common materials used for cylinder cover gaskets .
- 11 Name the valves fitted in the cylinder cover assembly.
- 12 Why tappet clearances need to be accurate?
- 13 Name the parts of a diesel generator engine cooled by fresh water cooling medium.
- 14 What are the materials used for piston rings of two stroke engine.
- 15 What is the effect on compression pressure with respect to piston ring condition?
- 16 What inspections are carried out to ensure the crankshaft is aligned?
- 17 Why multiple springs are used in inlet/ exhaust valves?
- 18 What is the use of compressed air in sewage treatment plant
- 19 What type of pumps preferred for the use of steering system
- 20 What is 'emergency bilge suction'
- 21 Why non return valves are used in bilge system?
- 22 What types of pumps are used for bilge duties?
- 23 What are the safety devices fitted to an air compressor?
- 24 Why multistage compression is adopted in air compressors?
- 25 What is the use of compressed air on board?

- 26 What is the purpose of fusible plug on an air receiver?
- 27 Define clearance volume of an air compressor
- 28 What is the function of ejectors in fresh water generators
- 29 How air compressor liners are lubricated.
- 30 What is the function of wear ring in centrifugal pumps.
- 31 What is the purpose of Gravity disc and How do you select the gravity disc
- 32 State how in Turbocharger the exhaust gases are prevented from entering into oil or air passages.
- 33 With ref to bunkering whatis Drip Sampling.
- 34 What are the Indications of a scavenge fire?
- 35 How many safety valves are to be fitted on a water tube boiler?
- 36 Why scotch boiler furnace construction is corrugated
- 38 When boiler is pressure tested hydraulically , what should be done to the Safety valves
- 39 How Excess steam generated from boiler made to recirculate in to the system .
- 40 Why combustion air supplied to the boiler is preheated
- 41 why Fins are provided on economizer tubes
- 42 Why Air vent valves are provided on economizer of a boiler
- 43 Why Auxilary boiler burner can be fired using diesel oil as well as heavy fuel oil.
- 44 Which element in the combustion air is the main cause of heat loss in the combustion process
- 45 Why Excess air is supplied during fuel combustion in an auxiliary boiler
- 46 In a Steam assisted burners system, what medium is used to make the burner work when steam pressure isvery low or nil.
- 47 Why we have to turn the Main engine by turning gear prior to trying the engine on air.
- 48 Why we have to keep the indicator cock open while turning the Main engine by turning gear
- 49 Why the under piston drain cock is kept opened while Main engine is running.
- 50 Name the two mediums which are used for fighting the under piston scavenge fire.
- 51 Why main engine is blown through with air (tried on air only) prior trying out on fuel.

- 52 What fuel commonly being used on main engine while maneuvering and why.
- 53 Why tie rods fitted on the main engine.
- 54 What material the main engine gasket is made
- 55 Where the bottom end bearing clearance taken
- 56 Where the crosshead bearing clearance taken?
- 57 Why emergency fire pump gets power supply from emergency switch board.
- 58 Why life boat winch gets power supply from emergency switch board
- 59 Why lub oil priming pump of generator engine gets power supply from emergency switch board
- 60 Why one of the engine room supply fan gets power supply from emergency switch board
- 61 Why one of the engine room exhaust fan gets power supply from emergency switch board
- 62 Why emergency air compressor gets power supply from emergency switch board
- 63 Why main air compressor drain valve or vent valve kept opened while starting the compressor.
- 64 What alternate starting system provided for starting emergency generator.
- 65 What alternate starting system provided for starting life boat engine.
- 66 Why separate cam shaft lub oil system is provided in B&W Main Engine.
- 67 State what is the maximum and minimum starting air pressure of a diesel engine.
- 68 With reference to Emergency generator ,Discribe the procedure of checking lub oil level, how to find the correct grade of lub oil for filling & where to fill the lub oil.
- 69 In case of fire in the accommodation which fire pump you will start.
- 70 Why emergency fire pump provided out side the engine room
- 71 From How many places you can start the main fire pump.
- 72 In the automatic sprinkler system what means are provided to prevent the passage of seawater into the pressure tank.
- 73 At what temperature fusible plug of an air receiver designed to melt.

## 6 Marks question Bank for ME 802 General & Motor

1 What are "blow down" and " overlap period"?

- 2 What are the clearances to be noted for piston rings and forces acting on it?
- 3 Why lubrication of a crosshead bearing is difficult and what are the methods adopted?
- 4 Why bottom end bearing bolts have limited life & at what interval normally they are renewed.
- 5 How are metal/ resin chocks are fitted?
- 6 Define the purpose of fitting tie-bolt. Why jack bolts are used to tighten the main bearings of certain engines.
- 7 .What inspections are carried out on bed plate
- 8 Why is bore cooling necessary in certain design of liners?
- 9 Why liner wear is not even throughout, why it wears more near TDC and near ports?
- 10 What is injection delay & discuss factors involved.
- 11 What is ignition delay & discuss factors involved
- 12 With reference to turbocharger, what is surging & its causes
- 13 In a ball and roller type turbocharger which side takes the thrust and why axial and radial damping springs are used?
- 14 Why certain turbocharger are cooled and other are not cooled . Give reason and its advantage.
- 15 Explain various methods of scavenging in a two stroke engine.
- 16 Why charge air is cooled and what are the benefits on engine performance?
- 17 Explain constant pressure system and its advantage and dis-advantage
- 18 Explain pulse system what are the advantages
- 19 why charge air cooler is used and what is the arrangement for removing moisture, why moisture is to be removed?
- 20 With reference to boiler feed system State how solid impurities are removed from feed water, which is pumped into the boiler.
- 21 With reference to aux boiler Indicate how the risk of oil contamination may be reduced.
- 22 With reference to Main air compressor What would be the effect of the suction valves having too much lift?
- 23 With reference to Main air compressor Explain why pressure relief device are fitted to the water side of cooler casing.
- 24 With reference to oily water separator How the level of oil separated is controlled?

- 25 With reference to plate type heat exchangers State how it can be ascertained that plate stack is correctly tightened
- 26 With reference to plate type heat exchangers why Titanium & stainless steel finding increasing acceptance
- 27 What is the purpose of a fusible plug on an air receiver and at what temperature is it designed to melt.
- 28 What inter locks are there on the starting air system
- 29 Explain how would you start an air compressor after overhaul.
- 30 What safety devices are fitted to a start air line?
- 31 Write difference between uniflow and reverse flow scavenging
- 32 What are the main differences between Lubricating oil used in 2 stroke and 4 stroke engines?
- 33 Write briefly how the x-head, and crank pin are lubricated in a 2 stroke engine
- 34 What is the purpose of stuffing box and how is it secured to engine
- 35 What are the properties of Cylinder Lubricating oil? What is meant by SLOC
- 36 what is the purpose of Auxiliary blower of a main engine and explain its operation?
- 37 What is the purpose of air cooler and what are the effects of underperforming air cooler?
- 38 What are valve rotators how does the exh valve rotate during operation?
- 39 What is the purpose of stuffing box fitted on the two stroke main engine
- 40 Sate with reasons three safety features incorporated in the air starting system of a two stroke slow speed main propulsion
- 41 How do you check the air starting valve tightness in port and at sea of a two stroke slow speed main propulsion
- 42 What is purpose of rubbing bands on piston skirt
- 43 How are piston rings calibrated
- 44 Explain the cause and effects of large butt clearance
- 45 What is mean effective pressure and indicated power?
- 46 For what purpose Tie- bolts are used?
- 47 Why do generally the exhaust valves have smaller diameter than inlet valves?
- 48 Why is tappet clearance is kept and where it is measured?

- 49 Explain a two-stroke cycle engine with timing diagram
- 50 Why the piston rod stuffing box incorporated in a two-stroke cycle crosshead diesel engine. What is the purpose of fitting several stages of rings, How the scrapper/ sealing rings wear measured & Why the clearances cannot be less than the specified clearance.
- 51 Why In plate type heat exchanger, fluid press. & temp, do not normally exceed 10 bar and 150°C respectively.
- 52 In plate type heat exchanger Why Titanium & stainless steel finding increasing acceptance,
- 53 In plate type heat exchanger State how it can be ascertained that plate stack is correctly tightened and the likely result of excessive tightness.
- 54 Why In plate type heat exchanger the plates are corrugated.
- 55 Describe how Furnace blow back conditions are prevented in auxiliary boilers.
- 56 Describe how internal corrosion conditions are prevented in auxiliary boilers.
- 57 Describe how uptake fire conditions are prevented in exhaust gas boiler.
- 58 In the aux boiler fuel burning system indicate the effect of Air supply insufficient.
- 59 In the aux boiler fuel burning system indicate the effect of Air supply Excessive.
- 60 In the aux boiler fuel burning system indicate the effect of Presence of water in oil.
- 61 In the aux boiler fuel burning system indicate the effect of Excessively high oil temperature.
- 62 With reference to centrifuge state the Factors that assist separation.
- 63 With reference to centrifuge for efficient separation where the interface line to be maintained.
- 64 With reference to centrifuge if the interface line maintained beyond the outer periphery of the top disc what will happen.
- 65 State the type of pump ideally used to discharge through the oily-water separator& why.
- 66 What type of valves are fitted in the engine room bilge system and why? State the material of construction of the valves.
- 67 In the automatic sprinkler system what are the safety devices incorporated.
- 68 What is the purpose of a fusible plug on an air receiver and at what temperature is it designed to melt.
- 69 What inter locks are there on the starting air system of a Main Engine.
- 70 What safety devices are fitted to a start air line of a Main Engine

10 Marks question Bank for ME 802 General & Motor

- 1 The exhaust gas economizer, catches fire during the voyage. Suggest two reasons why this should occur and how would you fight the fire & prevent it.
- 2 Sketch and discribe Main engine(B&W) Lube Oil system, showing the safety devices in the System & how temperature of lub oil maintained Describe alarms & trips fitted.
- 3 Sketch and discribe Main engine(B&W) fresh water cooling system, how temperature of LT
  & HT maintained, What is the need of HT & LT cooling, Describe alarms & trips fitted.
- 4 Sketch and discribe Main engine(B&W) fuel oil system system, how viscocity of fuel oil maintained, what is the need of booster & circulating pump on the same line, Describe alarms & trips fitted. What is the need of mixing column & fuel /water emulsion control.
- 5 Sketch and discribe both auxiliary boiler & exhaust gas boiler combined feed water system, Describe alarms & trips fitted. What arrangement is there in the system to protect the main feed water pump while it run continuously even when the feed regulating valve completely closed.
- 6 Sketch and discribe seawater cooling system, how temperature is maintained, What is the need of high & low sea chest. Describe alarms & trips fitted.
- 7 Sketch and discribe complete Emergency generator piping system (/lub oil/fresh water/fuel oil system/ starting arrange ment, how lub/cooling water temperature is maintained, Describe starting procedure & alarms & trips fitted.
- 8 Sketch and discribe stern tube system, how temperature is maintained, What is the need of high & low gravity lub oil tank. Describe alarms & trips fitted.
- Sketch and discribe refrigeration system, how different temperature is maintained in veg/meat&fish rooms,, What is the need oil seperator. How defrosting is carried out.
  Describe alarms & trips fitted.
- 10 Sketch and discribe sewage treatment system, Starting & stopping procedure. Routine checks & Maintenance carried out, Describe alarms & trips fitted.
- 11 Sketch and discribe Bile water seperator system, Starting & stopping procedure. Routine checks & Maintenance carried out., Describe alarms & trips fitted. Records maintained
- Sketch and discribe Diesel generator Engine complete system (Should include lub oil/fuel oil/fresh water cooling/ sea water coolin/air starting systems.),. Routine checks
  Maintenance carried out., Describe alarms & trips fitted.
- 13 Draw the sectional view of the two stroke main engine crosshead & name the parts.
- 14 Sketch & describe trunk type connecting rod , show the supply of lubricant.

- 15 Sketch a tie bolt in position in a large crosshead engine, Define the purpose of fitting tie bolt, Also describe correct bolt tensioning procedure
- 16 Sketch and describe main engine B & W piston with short skirt & name the parts. Show the direction of coolant. Discuss how it is ensured the crown receives an adequate supply of coolant
- 17 Sketch and describe hydraulically operated exhaust valve with air spring arrangement. With the functions of each part.
- 18 sketch and describe M/E air starting (sulzer or B&W)
- 19 Draw four stroke supercharged engine timing diagram. and explain the reasons for inlet & exhaust valve timing.
- 20 Draw two stroke timing diagram of a uniflow engine and explain the Exhaust valve timing. Show with diagram what is a) Butt clearance b) Axial clearance c) Back clearance. Also describe how these clearances measured & if clearance is less or excessive what will be the effect.
- 21 With reference to four stroke engine Cylinder head valves a) Why twin exhaust valves are used.b) Why two or more springs used. c) What is tappet clearance & discuss reasons for keeping same
- 22 With reference to Cylinder head valves Why some valves carry spinners. b) How valve bounce is countered. c) How the rocker arm lubrication carried out & its lub oil pressure controlled
- 23 With reference to the construction of turbocharger Explain with sketches a) Blower side bearing and its method of lubrication. b) Why & where all lybreneath seals are used.c) why axial and radial damping springs are used.
- Why plain Journal bearing in turbocharger are fitted with header tank and explain with sketch What is the function of the following with respect to turbocharger a) diffuserb)volute casing c) lacing wire d)nozzle ring
- 25 What is scavenged fire & how it takes place. What are the causes of scavenge fire& how it could be avoided. Detail procedure of fighting scavenges fire.
- 26 Sketch and discribe Fresh water generator system, how vaccum maintained, Describe alarms &saftys fitted.
- 27 Sketch and describe a crankcase explosion relief valve, list the materials used and any maintenance required
- 28 Describe how cylinder liners are checked for wear. Explain how these measurements are recorded. Explain why allowable wear is limited and governs the liner replacement.