Marine Engineers and Superintendents Technical Support

50 Questions and Answers For Marine Engineers

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1. ESD stands for which type of boiler
A. External superheater D-type
B. Emergency shutdown Boiler
C. Extreme Superheat type
D. External Superheat De-superheater type
Answer-A

2. In order for microbiological growths to thrive in a fuel tank it is necessary for
A. high temperatures to exist
B. low temperatures to exist
C. small amounts of water to be present
D. large amounts of water to be present
Answer-C

3. Marine boilers burning H.F.O. face a problem of cold corrosion due to high sulphur content. The minimum flue gas temperature within any boiler part is kept above due point of H_2SO_4. The actual dew point of H_2SO_4 in flue gases depends on the:
A. Boiler furnace temperature
B. Ambient air temperature
C. Boiler operating pressure
D. HFO sulphur content and moisture in combustion air
Answer-D

4. Which of the following statements is true?
A. The rotary vane type steering gear generally operates at higher oil pressures than the ram type.
B. The ram type steering gear generally operates at higher oil pressures than the rotary vane type.
C. Both ram type and rotary vane type steering gears generally operate at similar oil pressures
D. None of the above
Answer-B

5. 3-ballast pump is being used to deballast a fore peak tank which is full. It is seen that suction pressure is positive and discharge pressure is very low compared to rated discharge head. It indicates that:
A. Pump is not operating satisfactorily and pumping capacity is too low
B. Pump is not operating satisfactorily and pumping capacity is higher than rated, throttling of discharge valve is required
C. Pumping capacity is not affected by suction and discharge pressures
D. Pump is operating normally
Answer-B

6. In a reciprocating pump the direction of flow depends upon:
A. Direction of rotation of the pump
B. Position & fixing of suction and discharge valves
C. High pressure to low pressure
D. Whether pump is single acting or double acting
Answer-B

7. If the direction of rotation of a gear pump is reversed due to change in-phase sequence, what happens when the pump is started?
A. Direction of flow remains the same
B. The pump will get damaged due to overpressure on suction side
C. Pump relief valve will be lifted
D. The direction of flow will be reversed
Answer-D

8. Which of the following cause cavitations
a. Low discharge pressure
b. Throttling the suction valve
c. Low water level in the wet well
d. High discharge pressure
Answer-C

9. How is the concentration of dissolved oxygen in the feed water of an auxiliary boiler maintained at acceptable limits?
A. Feed water is cycled through a DC heater.
B. Feed water is treated with phosphates.
C. Oxygen is liberated in the three-stages of feed water preheating.
D. Oxygen is liberated by maintaining the highest practical feed water temperature
Answer-D

10. Prior to lighting off a cold automatically fired auxiliary boiler, you should
A. check and regulate the water level
B. close the air cock once fires are lit
C. blow down the gage glass
D. crack the steam stop to assure protective steam flow
Answer-A

11. Steam temperature control for the ESD-II boiler is achieved by:
A. Fitting a de-superheater between 1st & 2nd passes of superheater
B. Fitting an attemperator between 1st & 2nd passes of superheater
C. Gas dampers in boiler uptake
D. Bypassing the superheater
Answer-C

12. If the combustion control system of an automatically fired auxiliary boiler fails to sustain burner ignition after a normal shutdown, you should check for a/an
A. faulty photocell detector
B. low steam pressure
C. high voltage on the ignition electrode
D. open air damper
Answer-A

13. Which of the following conditions is responsible for the fuel oil to atomize when using a steam atomizer in an auxiliary boiler?
A. Expansion of the steam in the furnace.
B. Expansion of the steam in the whirling chamber.
C. Expansion of the steam in the orifice plate.
D. All of the above.
Answer-A

14. Shaft tunnel requires
A. drain
B. escape trunk
C. water tight door
D. all the above
Answer-D

15. Function of a de-superheater is to
A. Protect superheater from overheat
B. Control superheater steam outlet temperature
C. Increase the efficiency of the boiler
D. Reduce steam temperature for auxiliary uses after steam superheater
Answer-D

16. Which of the following statements is false?
A. Oxidation of lubricant leads to decrease in its viscosity
B. Formation of oxidation acids, sulfuric acid leads to depletion of TBN of lubricant
C. Contamination with water will lead to decrease in the load carrying capacity of a lubricant.
D. Build up of insoluble will lead to increase in viscosity of a lubricant
Answer-A

17. If the boiler tubes are scaled on the water side then
A. Heat conduction through the tubes will be very high leading to rapid evaporation
B. The boiler furnace can get damaged due to excessive temperatures
C. The surface of the tube will be overheated as heat transfer is impaired
D. The natural circulation of water within the boiler will be more efficient
Answer-C

18. Fins are installed on the generating tube surfaces in waste heat boilers to
(A) Prevent soot fires in the exhaust system
(B) Prevent exhaust gas erosion of the tubes
(C) Increase the velocity of exhaust gas flow
(D) Increase the rate of heat transfer
Answer-D

19. Any steering gear system alarm can only be successfully acknowledged from
A. The bridge
B. The engine control room
C. The steering compartment
D. The ship's office
Answer-B

20. Which type of boiler burner has max turn down ratio?
A. Pressure set
B. Spinning cup
C. Spill type
D. Y-jet type
Answer-D

21. During shutting down the purifier you find that purifier always vibrates heavily for some time and then becomes normal until it finally comes to a stop. What should be done to avoid this situation?
A. The purifier bowl should be cleaned before next startup
B. The brake should be applied so that the critical speed does not last long
C. Complete overhaul of the purifier should be carried out and the bearings need to be renewed
D. The bowl should be sent for balancing
Answer-B

22. Centrifugal pump will typically give you a low flow rate at a lower pressure, where a piston pump will give you more pressure and higher flow rate. Is the statement correct?
A. True
B. False
C. First Sentence is right. Second one is wrong
D. I Don't know
Answer-B

23. Sludge pump suction pressure is going full vacuum when u start the pump taking water of double bottom tank suction u hv checked the suction filter n found in clean condition. Taking suction fr fuel oil sludge tank does not happen. Causes of the problem.
A. Pump is not working efficiently n reqd. overhauling
B. Sludge tank suction valve is leaking
C. W.O. tank D.B. tank suction pipeline has a blockage.
D. Can you say what the problem is but definitely the pump needs to b opened up for overhaul
Answer-C

24. Most steam traps respond well to cleaning. But when a thermodynamic trap fails to operate after cleaning, the next course of action should be
A. throttle the steam outlet valve
B. renew the trap
C. lap the disc and seat the trap
D. throttle the steam inlet valve
Answer-C

25. Where boiler point temp high?
A. Riser
B. Superheater
C. Primary steam drum
D. Secondary steam drum
Answer-B

26. The primary function of a flame safeguard system, as used on an automatically fired auxiliary boiler, is to prevent
A. accidental dry firing and overpressure
B. uncontrolled fires in the furnace
C. explosions in the boiler furnace
D. explosions in the boiler furnace
Answer-C

27. External fouling of boiler tubes can lead to:
A. Greater steam generation
B. Tube corrosion
C. Tube Erosion
D. Protection of tube against corrosion
Answer-B

28. Which of the foll wl cause cavitation
A. low discharge pressure
B. Throttling the suction valve
C. Low water level in the wet well
D. High discharge pressure
Answer-C

29. In reverse osmosis type freshwater generator plants, pretreatment of the feed water is done to:
A. Soften the feed water
B. Sterilize the feed water
C. To facilitate wash through of salt deposits on elements
D. Add necessary minerals to the water
Answer-C

30. Centrifugal pumps cannot handle air and require priming. But you are aware that centrifugal which on the same principal can handle air very well. Which two properties of air are responsible because of which the centrifugal pumps cannot handle air:
A. Fluidity only
B. Density only
C. Both fluidity and density
D. Compressibility
Answer-C

31. The boiler water alkalinity in a coil-type auxiliary boiler should be maintained at the pH recommended by the boiler manufacturer to
A. precipitate silica from solution
B. reduce corrosion in the heating coil
C. prevent clogging and erosion in the coil
D. maintain zero water hardness
Answer-B

32. When preparing to light off a cold boiler equipped with a return flow fuel oil system, the recirculation valve directs the flow of oil
A. directly to the fuel oil heater inlet for further warm-up
B. back to the fuel oil settler for further filtration
C. back to the suction side of the service pump
D. directly to the deep tanks
Answer-C

33. The arrangement used to protect overheating of the superheaters under fluctuating loads is called
A. De-superheater
B. Attemperator
C. Steam dumping valve
D. Feed heater
Answer-B

34. Fusible plugs are installed in fire-tube boilers to
A. provide a means of draining the boiler
B. warn the engineer of low water level
C. cool the crown sheet at high firing rates
D. open the burners' electrical firing circuits
Answer-B

35. By which of the following is the attached vacuum pump of a ballast pump is driven?
A. Electrical motor
B. Hydraulic motor
C. Pump driven clutch
D. Pneumatically driven
Answer-C

36. Why centrifugal p/p not provided with safety valve while positive displacement p/p is provided?
a. c/f p/p shut down head is O
b. c/f p/p shut down head is infinity
c. c/f p/p is so designed that it can withstand high pressure
d. not sure
Answer-A

37. When centrifugal pump is overhauled it was found that shaft had developed grooves on it n no spare is available onboard what action can be taken
a. Order a new spare
b. Assemble the pump without doing anything n wait for the spare to arrive.
c. Machine the shaft sleeve on lathe n put back the new packing.
d. Leave the pump as it is
Answer-C

38. In a coil-type auxiliary water-tube circulation boiler
A. unevaporated feed water collects in the bottom of the flash chamber
B. all generated steam is recirculated through heating coils in the boiler
C. heated water flashes to steam in the boiler heating coils
D. response to steam demand is slower than in a fire-tube boiler
Answer-A

39. The purpose of economizer is to:
A. Decrease the capacity and size of the auxiliary boiler
B. Cooling down the exhaust gases in order to reduce NOx emission
C. Allowing Sox to react at low temperatures with water to form acids thus reducing Sox emission
D. Increasing the overall efficiency of the main propulsion plant
Answer-D

40. A diffuser is provided at the end of a mechanical atomizer in boiler onboard
A. To prevent blow back of the flame
B. To mix the air and fuel properly
C. To prevent blow out of the flame
D. To eject the excess fumes from the atomizer
Answer-A and B

Multiple Choice Question
41. Salinity of distilled water produced from fresh water generator onboard depends on
A. Amount of feed set in fresh water production
B. Amount of salt water leaking from condenser if any
C. Temperature of the sea water used
D. Efficiency of brine ejector from the evaporator shell
Answer-A,B & D

42. Ballast pump injection filter was cleaned n the pump was lined up it was found that there was some leakage in the suction filter suction. The pump started n the leakage started. During deblasting it was found that the pump could not take suction fr one of the double bottoms. The cause could be
A) Pump was drawing air from outside.
B) Pump was drawing air from suction filter
C) One of the pipelines on the suction side of the pump might be leaking
D) The filter was not cleaned properly.
Answer-B

43. Less vacuum in centrifugal pp
A leaky discharge vv
B loss of gland packing
C loss of fluid from suction take place
D long suction pipe
Answer-B

44. Steam stop valve is eased of its seat during boiler start up from cold
A. To allow thermal expansion of parts
B. To allow steam flow during start up
C. To prevent water hammer
D. All of the above
Answer-D

45. Which of the following statements about the design of D- type boilers, is false?
A. The heavier water in top drum flows back to the bottom drum through the down- comers outside the furnace
B. Inside the furnace the water is heated up in the risers
C. The upper drum is the steam/water drum and the lower one is the water drum.
D. The feed water is pumped into the lower drum
Answer-D

46. With reference to the data logger for a refrigerate system. Which of the parameters should be noted?
A. Sea water temp, pressure
B. Condenser temp
C. Refrigerant leakage
D. Evaporator temp.
Answer-A, B and D

47. Tube in air compressors, self compensating for expansion
A. Straight line tube
B. U tube
C. Coil tube
D. Floating tube
Answer-B

48. Deep well cargo pump are used in
A. chemical tanker
B. product carrier
C. LNG
D. all
Answer-C

49. After your overhaul a centrifugal pump is not rotating what may be the possible cause:
A. Uneven tightening of casing bolts
B. Gasket thickness very thin
C. More wear ring clearance
D. Only a
E. a and b
F. a and c
Answer-E

50. Duplication of power units, fittings and pipings where each unit is capable of providing 100% steering power and automatic isolation of one unit in the event of a leakage (single failure) in that unit would constitute 100% redundancy for the steering gear system. Such system is mandatory on
A. All tankers
B. Tankers above 10000 GT
C. Tankers above 100000 Dwt
D. All ships above
Answer-B