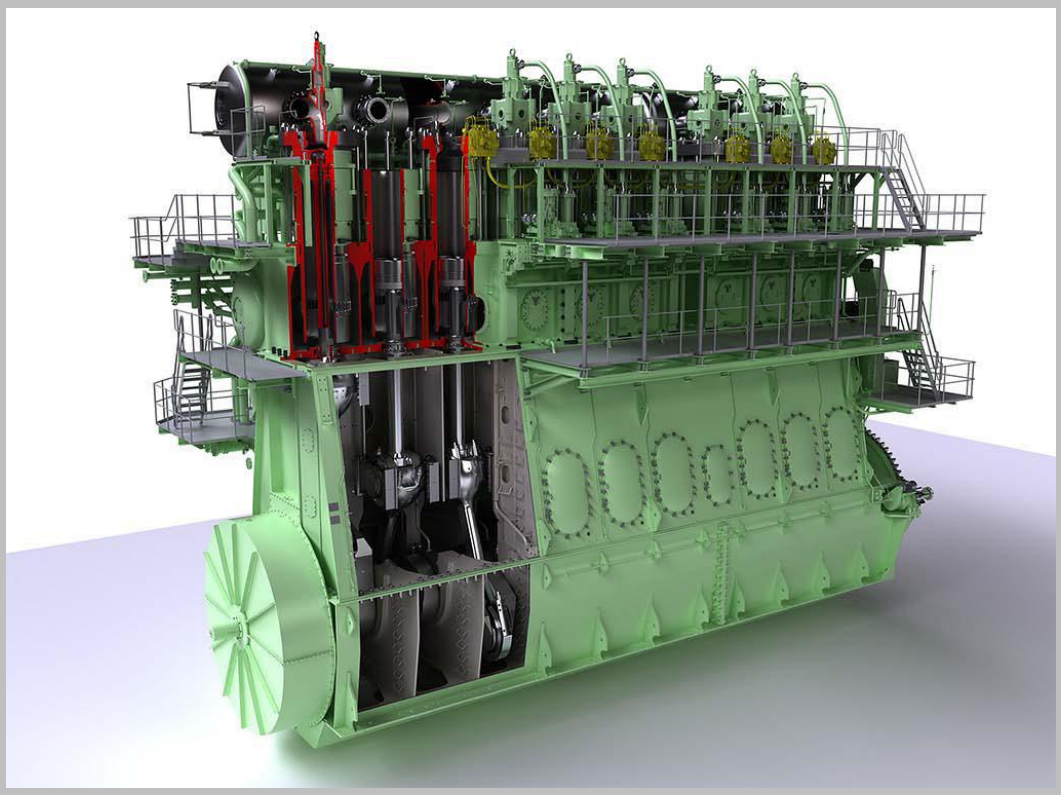
50 Questions and Answers For Marine Engineers

Issue 2



Diesel Engine, Turbocharger, Fuel, Oil

1. Which of the following methods is normally used to lubricate bearings in a small high-speed diesel engine?
A. Splash lubrication
B. Pressure lubrication
C. Sight feed lubricators
D. Mechanical lubricators
Answer-B

2. What is the purpose of the inlet grid provided within the exhaust gas casing in the gas flow path, prior entry to turbocharger?
A. To filter out any unburned carbon
B. To absorb and dampen the pressure fluctuation
C. To reduce noise in the constant pressure exhaust piping
D. To prevent any broken piston rings finding their way to turbine
Answer-A

3. The main function of tie rods in the construction of large, low speed diesel engines is to
A. stiffen the bedplate in way of the main bearings to increase the engine's longitudinal strength
B. accept most of the tensile loading that results from the firing forces developed during operation
C. mount the engine frame securely to the hull to prevent shaft coupling misalignment
D. connect the crosshead solidly to the piston rod
Answer-B
4. The fall in speed that occurs in a diesel engine equipped with governor, on increase of load is called:
A. Offset
B. Speed drop
C. Speed droop
D. Speed offset
Answer-C

4. Which of the following factors governs the lower limit of thrust bearing clearance?
A. To allow some oil leakage to prevent overheating
B. Reduction of oil viscosity
C. Alignment of crankshaft
D. To allow the thrust pads to tilt and generate the oil wedge
Answer-D

5. Which of the following can result in cracking of piston crown?
A. Deposits in cooling spaces
B. Impingement of fuel due to faulty injection
C. Insufficient piston cooling oil flow
D. All of the above
Answer-D

6. What does the NLGI number of grease indicate?
A. The oxidation resistance of the grease
B. The consistency of the grease i.e how fluid or non fluid
C. Demulsibility of the grease
D. The shelf life of the grease
Answer-B

7. Which of the following layers of a thin shell bearing gives it its fatigue strength?
A. The overlay
B. The interlay
C. The backing
D. The barrier layer
Answer-A

8. Which of the bearings listed is most widely used for main and connecting rod bearings of modern diesel engines?
A. Steel-lined
B. Poured babbitt, self-aligning
C. Split roller
D. Precision insert
Answer-D

9. Which of the following statements is false?
A. The fuel oil sulfur level is one of the important criteria for choice of TBN level of cylinder oil.
B. The use of anti-polishing rings or flame rings increases the consumption of cylinder oil
C. Excessive cylinder oil feed can lead to harmful deposits in piston top land area
D. None of the above
Answer-B

10. Prompt correction of speed of diesel engines driving alternators, without having massive fluctuations is ensured by incorporating:
A. Load limiting devices
B. Load sharing devices
C. Load sensing devices
D. Load shedding devices
Answer-C

11. In a uniflow scavenged marine 2-stroke diesel engine, the scavenge ports in a cylinder liner are machined
A. Only for a part of the circumference, at an angle almost tangential to the circumference of the liner
B. All around the circumference at right angles to the circumference of the liner
C. only for a part of the circumference, at right angles to the circumference of the liner
D. All around the circumference at an angle almost tangential to the circumference of the liner
Answer-D
13. If the tappet clearance between the rocker arm tappet and exhaust valve stem is excessive then:
A. The valve will open early and close later
B. The valve will open later and close early
C. The valve will open and close later
D. The valve will open and close early
Answer-B

12. In order to reduce thermal loading on the upper part of the liner and increase the effectiveness of cylinder lubrication, modern 2-stroke marine diesel engines are designed to have:
A. Cermets coated piston rings, bore cooled liners and uniflow scavenging
B. High top land of piston crown and deeper cylinder cover with top land of crown extending into cylinder cover at TDC
C. Low top land of the piston crown with bore cooled cylinder liner
D. Bore cooled cylinder liner and bore cooled piston crown with toroidal shape combustion chamber
Answer-B

13. Which of the following conditions can lead to reduced power developed by a main engine?
A. High scavenge air temperature
B. Choked air suction filter of a turbocharger
C. Blow past in one or more units
D. All of the above.
Answer-D

14. Which of the following types of diagrams would give an indication of effectiveness of exhaust and scavenge processes?
A. Power card
B. Draw card
C. Light spring diagram
D. All of the above.
Answer- C

15. As a thumb rule, ovality in crankpins of medium speed engines should not exceed _____of bearing clearance.
A. 10%
B. 15%
C. 25%
D. 30%
Answer- pls check and inform me brovertek@gmail.com

16. In a naturally aspirated diesel engine, the volume of air intake is directly related to engine
A. compression ratio
B. valve size
C. fuel pressure
D. cylinder clearance volume
Answer-B

17. Piston rod stuffing box scraper rings butt clearances should:
A. Not to be allowed to fall below 50% of original clearance
B. Not to be allowed to increase above 50% of original clearance
C. Not to be allowed to fall below manufacturer recommended value
D. Not to be allowed to increase above manufacturer recommended value
Answer-C

18. In a 2-stroke engine a _____ separates the under piston space from the crankcase.
A. A-frame
B. Crosshead
C. Diaphragm
D. Scavenge space
Answer-C

19. Which of the following gauges are generally used to evaluate main bearing clearances?
A. Poker gauge
B. Feeler gauge
C. Telescopic feeler gauge
D. Dial gauge
Answer-C

20. For a continuous operation diesel engine, a duplex filter unit would be the best arrangement because
A. changing filter elements would not interrupt engine operation
B. filtering occurs twice in each pass of oil through the system
C. clogging will not occur
D. dropping pressure is half of that through a single filter unit
Answer-A

21. As per regulations, within how many hours before each departure, satisfactory working of the steering gear must be checked?
A. 2
B. 12
C. 24
D. None of the above
Answer-B

22. Modern 4-stroke medium speed, marine diesel engine exhaust valve spindles are rotated by providing
A. Nozzle rings
B. Tappet clearance
C. Spinners or vanes
D. Rotocaps
Answer-D

23. Microbiological growths in marine fuel are a common occurrence that can be
A. extremely detrimental to equipment and operating processes
B. prevented by maintaining proper storage temperatures
C. removed from emulsified fuel oil during the centrifuging processes
D. All of the above are correct.
Answer-A

24. The function of the tie rods is to:
A. Keep the engine components under tension at all the times
B. Just secure the engine parts together
C. Act as holding down bolts for the bedplate and keeps all the engine components together
D. Keep engine components under high compression, so that tensile stresses acting during firing stroke do not exceed this pre-compression to avoid fatigue failure
Answer-D

25. Which of the following types of crankshafts is much lighter at similar power requirements?
A. Fully built type
B. Semi built, all welded type
C. Semi built type
D. Solid forged type
Answer-B

26. After an engine has been started using a Bendix drive unit, the drive gear, or pinion disengages from the flywheel due to
A. the action of a spring
B. rotation of the starting cam
C. the higher rotating speed of the flywheel
D. accumulator pressure
Answer-C

27. Fuels as produced in a refinery are generally sterile, however, contamination can occur as fuels are
A. stored at the refinery
B. stored on the vessel
C. transported to the distribution sites
D. All of the above are correct.
Answer-D

28. Which of the following statements is false?
A. Excessive cylinder liner lubrication can aggravate scuffing.
B. Use of anti polishing ring reduces scuffing.
C. Deep honing of liner fails to give an ideal liner surface.
D. None of the above
Answer- D

29. In a fully built or semi built type crankshaft, how can any slippage at shrink fit be identified?
A. By inspecting the locking arrangement provided
B. By checking the dowel provided.
C. By checking the witness mark provided for reference.
D. By checking the performance of the engine
Answer-C

30. Which of the following is one of the major advantages of resin choking over cast iron choking, in holding down arrangements of modern diesel engines?
A. Better vibration damping properties.
B. Better compressive strength
C. 100% contact, no need for surface preparation
D. None of the above
Answer-C

31. In a 2-stroke crosshead type of engine, the side thrust generated due to rolling and connecting rod and fore-aft thrust due to pitching motion of the ship is taken care of by the:
A. Piston and the liner
B. Connecting rod and the piston rod
C. Crosshead shoes and guides
D. Crankpin and thrust bearing
Answer-C

32. In a VIT equipped jerk type fuel pump:
A. Raising the barrel delays beginning of injection
B. Lowering the barrel delays beginning of injection
C. Raising the barrel delays end of injection
D. Lowering the barrel delays end of injection
Answer-A

33. The over speeding of the diesel engine driving an electric generator could cause
A. low voltage trip to trip
B. reverse power trip to trip
C. damage to windings
D. excessive exhaust temperatures
Answer-C

34. In a large, slow-speed, main propulsion diesel engine, which of the parts listed is under tension when the engine is running?
A. Bed plate
B. Column
C. Entablature
D. Tie rod
Answer-D

35. Presence of catalytic fines in fuel oil is significant to engineers on board because
A. Catalytic fines tend to impair proper operation of purifiers
B. Catalytic fines lead to abrasive wear in liners, piston rings and fuel injection equipment
C. Catalytic fines necessitate increase in injection temperature
D. Catalytic fines necessitate increase in storage temperature
Answer-B

36. Which of the following factors affect penetration of fuel droplets during injection?
A. Quality of atomization
B. Injection temperature
C. Scavenge air pressure
D. All of the above.
Answer-D

37. Lube oil pumps taking suction from the sump of most small marine engines are usually
A. of the diaphragm type
B. of the centrifugal type
C. positive displacement type
D. independently driven by electric motors
Answer-C

38. Telescopic pipes to the piston of a large slow-speed main propulsion diesel engine are designed to prevent
A. excessive crankcase pressure
B. excessive lube oil temperature
C. contamination of the lube oil by water
D. contamination of the cooling water by lube oil
Answer-C

39. Excessive axial thickness of a piston ring can lead to _____
A. Scraping off of oil from liner surface
B. Increased wear
C. Twisting in the groove
D. Difficulty in formation of oil wedge
Answer-D

40. Which of the following is an adhesive type wear of a cylinder liner?
A. Clover- leafing
B. Scoring
C. Scuffing
D. Ovality
Answer-B

41. Cylinder heads of marine diesel engines are provided with _____ to relieve any excessive pressure within the combustion chamber
A. Safety valves
B. Indicator cocks
C. Relief valves
D. Bursting discs
Answer-C

42. Working of a pulse pressure turbocharger depends upon the _____ that can be safely created in the exhaust system.
A. Enthalpy drop
B. Pressure difference
C. Turbocharger rpm
D. Pressure pulses
Answer-D

43. The maximum elongation of timing chains in service is limited to _____ of original chain length.
A. 2%
B. 1%
C. 5%
D. 3%
Answer-A

44. Routine cleaning of air side of air cooler of main engine is done by:
A. Circulating fresh water
B. Circulating cold chemical solution
C. Circulating warm chemical solution
D. Circulating hot water
Answer-C

45. What prevents rotation and fretting between a thin shell bearing and its housing?
A. Location tangs or pegs
B. The nip or crush of the bearing
C. A special kind of adhesive
D. Any of the above
Answer-B

46. Microbial degradation of main engine sump oils can lead to:
A. Increased clogging of lube oil filters
B. Corrosive attack on journals and bearings
C. Formation of stable emulsions
D. All of the above.
Answer-D

47. In case of constant pressure turbo charging, the exhaust of the cylinders goes into:
A. Small diameter exhaust pipes with exhaust grouping
B. Exhaust compensators
C. Nozzles
D. Large diameter pipes
Answer-B

48. Which of the following is a limiting factor in cylinder liner cooling?
A. Maximum combustion temperature
B. Minimum liner temperature
C. Exhaust temperature
D. Dew point for formation of sulfuric acid
Answer-D

49. Which of the following is not a consequence of over lubrication of a cylinder liner?
A. Deposits in piston top land which can not only consume lube oil but always lead to increased abrasive wear
B. Sticking and jamming of piston rings due to increased deposits.
C. Unburnt lube oil in scavenge spaces posing increased risk of scavenge fire .
D. Increased corrosive wear
Answer-A

50. Variable geometry turbocharging is the preferred choice over conventional turbochargers because:
A. T/C efficiency is very high at high engine loads
B. T/C has good starting characteristics while efficiency at full loads is slightly compromised
C. T/C efficiency is optimized for different engine loads by changing nozzle ring geometry
D. T/C is much cheaper and simple to manufacture and is virtually maintenance free
Answer-C

These questions mainly were taken from the website http://www.class4exam.com.
Thanks for web site administration and marine engineers who shared your experience.