

Objective question of Diesel trade theory MDT-04

1. What is the grade of lube oil used in Alco Locomotives?
a) RR-520 b) RR-606 c) SP-150 d) RR-460

2. What is the purpose of relief valve in lube oil system of locomotives?
a) to prevent lube oil pump from overloading
b) to maintain lube oil pressure in the system
c) to boost up the outlet lube oil pressure
d) none of the above

3. What is the pressure setting of lube oil relief valves in Alco Locomotives?
a) 8 Kg/cm² b) 7.4 Kg/cm² c) 6.0 Kg/cm² d) none of above

4. What is the purpose of providing a regulating valve in lube oil system?
a) to maintain pressure in the system
b) to provide bypass passage to lube oil
c) to remove dirt etc
d) none of the above

5. What is the pressure setting of lube oil regulating valves in Alco Locomotives?
a) 5 Kg/cm² b) 6 Kg/cm² c) 4.0 Kg/cm² d) none

6. What is the media used inside the vertical strainer unit for filtration of lube oil
a) cotton b) glass wool c) paper d) wire mesh

7. What is the purpose of providing the Moatti filter at locomotives?
a) filtration of lube oil b) filtration of fuel oil c) filtration of coolant water
d) air filtration

8. What is the role of Centrifugal filter fitted on locomotive?
a) separate dirt particles from lube oil
b) separate metal particles mixed in lube oil
c) segregation of water mixed in lube oil
d) segregation of fuel oil mixed in lube oil

9. What is a mandrel?
a) straight iron bar
b) fixture for dial gauge
c) enlongation gauge
d) none

10. Which one of the above test is not carried out for lube oil during maintenance?
a) viscosity check b) chattering test c) water contamination d) flash point

11. What is the function a woodward governor in a locomotive
- a) control fuel supply as per load requirement
 - b) control excitation of main generator
 - c) control tractive effort of locomotive
 - d) none of the above
12. what is the woodward governor oil sump capacity
- a) 2.5 ltr b) 3.5 ltr c) 4 ltr d) 6 ltr
13. Which of these assemblies is not fitted at free end side of engine block in a locomotive?
- a) water pump b) lube oil pump c) governor d) RTTM blower
14. How the compressor of locomotive gets drive power
- a) through belt b) through shaft coupling c) through magnetic coupling
 - d) none of above
15. At what locations compressed air of compressor is not being used in locomotives
- a) Horn blowing b) Movement of power contactors c) operation of brake system
 - d) booster air pressure for TSC
16. Air dryer is fitted at which location
- a) between MR1 and MR2
 - b) between compressor and MR1
 - c) between HP and LP cylinder of compressors
 - d) none of the above
17. Air supply to horn is provided through which location
- a) MR1 b) MR2 c) auxiliary reservoir d) none
- 18 . What is an expressor
- a) Combined unit of compressor and exhauster
 - b) Modified exhauster
 - c) New type of compressor
 - d) Device used to display parameters
19. Steam boiler is a type of
- a) internal combustion engine
 - b) external combustion engine
 - c) spark ignition engine
 - d) none of above
20. co-efficient of adhesion is a parameter which describes
- a) hauling power of loco
 - b) maximum speed of loco
 - c) torque generated by wheel
 - d) axle load

21. Which one is not a part of traction equipment fitted on locomotive

- a) Alternator
- b) compressor
- c) rectifier
- d) traction motor

22. Which one is not a defect of fuel injectors

- a) Dribbling
- b) Buffing
- c) excess leak off rate
- d) spray pattern

23. Which test is carried out to check efficiency of fuel oil system

- a) blow bye test
- b) holding time test
- c) bleed test
- d) orifice test

24. Which one is not a reason of low fuel oil pressure

- a) MB-1 breaker defective
- b) MFPB breaker defective
- c) FPC not picking up
- d) none of above

25. Which one is not a cause of low fuel oil pressure

- a) improper setting of fuel relief valve
- b) improper setting of fuel regulating valve
- c) Chocking of fuel oil filters
- d) none of above

26. Which one is not a component of fuel oil system

- a) fuel pump motor
- b) snubber valve
- c) banjo pipe
- d) hot oil detector

27. What is the role of vent pipe fitted on fuel tank

- a) to prevent air lock
- b) to reduce back pressure
- c) to provide passage to fume/vapours
- d) all of above

28. Which is not a defect of fuel system

- a) vibrations of HP tubes
- b) breakage of banjo cap screw
- c) rubbing of fuel cross over pipes
- d) leakage from tell tale hole

29. Which is cause of failure of water pump

- a) failure of drive gear
- b) failure of oil seal
- c) shearing of key
- d) All of above

30. What is the torque value of fuel banjo cap screw

- a) 100-150 foot pound
- b) 30-35 foot pound
- c) 7-15 foot pound
- d) none of the above

31. What is the unit of viscosity for lube oil used in locomotive.

- a) centi stokes
- b) pascal
- c) radian
- d) viscus number

32. Which one is not an item attended during summer drive attention.

- a) TSP treatment
- b) replacement of water tank pressure cap
- c) ETS setting
- d) MR drain cock replacement

33. Radiator fan of Alco loco is driven by

- a) cardon shaft
- b) gear drive
- c) sleeve coupling
- d) none of above

34. Which one is not an item for consideration layout of diesel shed.

- a) uni-directional movement of loco
- b) future extension provision
- c) proper lighting
- d) inside the city area

35. Which is not a type of maintenance?

- a) Preventive maintenance
- b) Scheduled maintenance
- c) Corrective maintenance
- d) Adaptive maintenance

36. For maintenance of locomotive which type of system is being adapted

- a) Preventive maintenance
- b) Shut down maintenance
- c) corrective maintenance
- d) none of above

37. Which one is not a parameter related to profile of wheels
- a) Root wear
 - b) flange wear
 - c) tread wear
 - d) lateral clearance
38. What is full form of ACD
- a) Automatic coupling device
 - b) Anti corrosion device
 - c) Automatic collision device
 - d) Anti collision device
39. At which location of Alco loco plain bearings are used
- a) main bearing
 - b) traction motor drive end bearing
 - c) governor linkage bearing
 - d) none of the above
40. At which location of Alco loco roller bearings are used
- a) main bearing
 - b) traction motor drive end bearing
 - c) governor linkage bearing
 - d) none of the above
41. At which location of Alco loco needle bearings are used
- a) main bearing
 - b) traction motor drive end bearing
 - c) governor linkage bearing
 - d) none of the above
42. The suspension system fitted on Alco loco is an example of
- a) single stage suspension system
 - b) two stage suspension system
 - c) three stage suspension system
 - d) none of above
43. Which one is not a part of suspension system of Alco locomotive
- a) equalizing beam
 - b) dash pot assembly
 - c) rubber pads
 - d) brake shoe
44. Which type of power assemblies are used in GM locos
- a) four stroke
 - b) two stroke
 - c) spark ignition and two stroke
 - d) none

45. What is the horse power of WDG4-GM loco.
- a) 4000 HP
 - b) 4500 HP
 - c) 3800 HP
 - d) none of above
46. How many water pumps are provided in GM loco.
- a) one
 - b) two
 - c) three
 - d) none of above
47. what is the full form of EPD
- a) engine power device
 - b) engine propulsion device
 - c) exhaust powered drives
 - d) engine protection device
48. In which condition EPD knob will come out and make the engine shut down.
- a) low water
 - b) low volatage
 - c) low engine rpm
 - d) high coolant temperature
49. In which condition EPD knob will come out and make the engine shut down.
- a) low crank case vacuum
 - b) low volatage
 - c) low engine rpm
 - d) high coolant temperature
50. What is the full form of HOD
- a) high operating demand
 - b) high oil demand
 - c) hot oil detector
 - d) none of above
51. At which location HOD is fitted in GM loco.
- a) piston cooling manifold
 - b) outlet flange of main lube oil pump
 - c) outlet flange of piston cooling pump
 - d) none of above
52. What is constructional feature of HOD.
- a) an electromagnetic valve
 - b) a thermostatic valve
 - c) a bypass valve
 - d) a spring loaded device

53. How many radiator fans are fitted in GM locos.

- a) One
- b) two
- c) four
- d) none

54. which type of radiator fans are fitted in GM loco.

- a) DC series fans
- b) AC three phase fans
- c) AC single phase fans
- d) hydraulically driven fans

55. Which type of brake system are used in GM loco.

- a) pneumatic brakes
- b) computer controlled brake
- c) mechanical brake
- d) none

56. Which is not a type of brake fitted on locomotive

- a) automatic brake
- b) independent brake
- c) emergency flap brake
- d) regenerative brake

57. What is range for buffer height in GM locomotive

- a) 1000~1500 mm
- b) 1030~1105 mm
- c) 950~1105 mm
- d) none of above

58. What is the purpose of providing lube oil priming motor

- a) to prevent seizure of TSC
- b) to prevent seizure of Main bearing
- c) for cooling of pistons
- d) none of above

59. What is the role of scavenging oil pump in GM loco.

- a) it moves lube oil from sump to lube oil filter
- b) moves oil from coarse strainer of lube oil strainer to lube oil filter
- c) moves oil from fine strainer of lube oil strainer to main header
- d) moves oil from sump to lube oil cooler

60. What is the function of Pee pipe in lube oil system of GM loco.

- a) to pass lube oil to lash adjusters
- b) to provide continuous stream of lube oil
- c) to supply lube oil to main header
- d) none of above

61. Which one is not a type of governor used on loco.
- a) woodward governor
 - b) EHG governor
 - c) micro controller based governor
 - d) NS-16 air governor
62. Which one is not used as input for a woodward governor
- a) Electrical input
 - b) BAP input
 - c) lube oil pressure feedback
 - d) fuel oil pressure feedback
63. What is max value of fuel rack in WDM2 locomotive.
- a) 25 mm
 - b) 30 mm
 - c) 35 mm
 - d) 28 mm
64. What is the action taken by woodward governor in case of low lube oil pressure.
- a) makes the engine idle
 - b) makes the engine shut down
 - c) restrict the rpm at forth notch
 - d) none of above
65. Which is shut down safety device fitted on Alco loco
- a) Low lube oil pressure plunger
 - b) GR relay
 - c) Hot engine
 - d) none of above
66. Which is shut down safety device fitted on Alco loco
- a) Over speed trip assembly
 - b) GR relay
 - c) Hot engine
 - d) none of above
67. Which is an idle safety device fitted on Alco loco
- a) Low lube oil pressure plunger
 - b) OSTA
 - c) Hot engine
 - d) none of above
68. What is a shut down safety device fitted in locomotives.
- a) it makes engine idle when operated
 - b) it makes engine shut down when operated
 - c) it produces audio visual output when operated
 - d) none of above

69. What is an idle safety device fitted in locomotives.

- a) it makes engine idle when operated
- b) it makes engine shut down when operated
- c) it produces audio visual output when operated
- d) none of above

70. What is full form of PCS

- a) pneumatic control switch
- b) power cut off switch
- c) power control switch
- d) none of above

71. What is full form of DMR

- a) direct moveable relay
- b) dual moving relay
- c) dead man's relay
- d) none of above

72. What is full form of SR

- a) single relay
- b) synchronized relay
- c) signal relay
- d) none of above

73. What is the function of signal relay.

- a) to ring the alarm bell
- b) to operate flasher light
- c) to display message on screen
- d) none of above

74. What is the role of overspeed trip assembly

- a) to prevent TSC from overspeeding
- b) to prevent engine from overspeeding
- c) to prevent loco from overspeeding
- d) all of above

75. OSTA unit works on which principle

- a) action-reaction pair
- b) centrifugal force
- c) spring mass system
- d) none of above

76. What is power ground fault in loco

- a) ground fault observed during starting
- b) ground fault observed in motoring
- c) ground fault observed in motoring
- d) none of above

77. What is starting ground fault in loco

- a) ground fault observed during starting
- b) ground fault observed in motoring
- c) ground fault observed in motoring
- d) none of above

78. Dry run test is carried out to check

- a) free movement of fuel rack
- b) max voltage output
- c) max current output
- d) none of above

79. What is the purpose of blow bye test

- a) to check free movement of fuel rack
- b) to check air tightness of cylinder head
- c) to check loading unloading pressure
- d) none of above

80. What is the purpose of conducting orifice test

- a) to check efficiency of lube oil system
- b) to check efficiency of fuel oil system
- c) to check cooling efficiency of radiators
- d) none of above

81. In MU operation of locomotive MU stands for

- a) multiple unit
- b) main unit
- c) master unit
- d) mainline unit

82. In MU operation of locomotives the loco are termed as

- a) primary loco + secondary loco
- b) main loco + auxiliary loco
- c) Leading loco + trailing loco
- d) none of above

Mark whether statements are True or False:-

83. The firing order of for engine on Alco locomotives is 1-4-7-6-8-5-2-3
a) True b) False
84. The value of bore in Alco locomotives 12 inch
a) True b) False
85. The app. Swept volume per cylinder in Alco locomotives is 12 ltrs.
a) True b) False
86. The engine block is made up of Aluminium alloy metal.
a) True b) False
87. The maximum possible misalignment permitted in main bearing housing bore between two adjacent bores is 0.002".
a) True b) False
88. The maximum possible misalignment permitted in main bearing housing bore between any two bores is 0.003".
a) True b) False
89. The singular costliest part of the diesel engine is crank shaft.
a) True b) False
90. The crank shaft of Alco locomotives are made up of high carbon steel.
a) True b) False
91. The nominal diameter of the crank pin is 6 inch
a) True b) False
92. In a diesel engine the vital role of cam shaft is to rotate auxiliary assemblies.
a) True b) False
93. The value of tappet clearance for Alco locomotive is 0.034 inch.
a) True b) False
94. The number of studs provided for fitment of Cylinder heads in Alco locomotives is five.
a) True b) False
95. During yearly inspection the hydraulic test of cylinder heads is carried out a pressure of 70 psi.
a) True b) False
96. The blow by test for cylinder head is carried out to test Thermal stress.
a) True b) False

97. During blow by test if leakage appears through TSC which cylinder head may be defective.
a) True b) False
98. During blow by test if leakage appears through sump exhaust manifold may be defective.
a) True b) False
99. The liners in which liner does not come direct contact with the coolant are also known as dry liner.
a) True b) False
100. In Alco locomotives piston and crankshaft are connected through means of cross head.
a) True b) False
101. Main bearing is an example of plain bearing.
a) True b) False
102. The purpose of providing a regulating valve in fuel oil system is to remove dirt etc from suction line.
a) True b) False
103. Copper washers are used between banjo pipe and FIP in fuel oil system of Alco locomotives.
a) True b) False
104. The orifice test is carried out to check fuel oil consumption for a particular period.
a) True b) False
105. Nozzle chattering is cracking sound due to free movement of valve inside body.
a) True b) False
106. e-beam power cables is a part of fuel efficient kit for Alco locomotives.
a) True b) False
107. The value of fuel oil pressure at full load will decrease as compared to at idle value.
a) True b) False
108. The inlet casing of turbo chargers which is made up of heat resistant material is called accumulator.
a) True b) False
109. The middle portion of TSC which supports rotor assembly is called intermediate casing.
a) True b) False

110. The portion of a TSC which contains the blower assembly is known as cool cage.
a) True b) False
111. The lube oil sump capacity in Alco locomotives is 1270 ltrs.
a) True b) False
112. The grade of lube oil used in Alco locomotives sump is RR-460.
a) True b) False
113. The purpose of relief valve in lube oil system of locomotives to prevent lube oil pump from overloading.
a) True b) False
114. The purpose of providing a regulating valve in lube oil system to provide bypass passage to lube oil.
a) True b) False
115. The media used inside the vertical strainer unit for filtration of lube oil is wire mesh.
a) True b) False
116. The purpose of providing the Moatti filter at locomotives is for filtration of coolant water.
a) True b) False
117. The function a woodward governor in a locomotive is to control fuel supply as per load requirement.
a) True b) False
118. The compressor of locomotive gets drive power through magnetic coupling.
a) True b) False
119. Air dryer is fitted between MR1 and MR2 of loco.
a) True b) False
120. Steam boiler is a type of internal combustion engine.
a) True b) False
121. Combined unit of compressor and exhauster is called expressor.
a) True b) False
122. The torque value of fuel banjo cap screw 100-150 foot pound.
a) True b) False
123. Root wear is a parameter related to profile of wheels.
a) True b) False

124. Lateral clearance is a parameter related to profile of wheels.
a) True b) False
125. In GM locomotives EPD knob will comes out and make the engine shut down in case of low water.
a) True b) False
126. Hot oil detector is fitted at outlet flange of piston cooling pump in GM locomotives.
a) True b) False
127. In GM locomotives EPD knob will comes out and make the engine shut down in case of low crank case vacuum.
a) True b) False
128. The range for buffer height in GM locomotive lies between 1000~1500 mm.
a) True b) False
129. The purpose of providing lube oil priming motor is to prevent seizure of TSC.
a) True b) False
130. The role of scavenging oil pump in GM loco is to moves lube oil from sump to lube oil filter.
a) True b) False
131. The function of Pee pipe in lube oil system of GM loco is to cool down piston from inside.
a) True b) False
132. Reduction of transmitted power is a property of ideal transmission system.
a) True b) False
133. AC-AC Electric transmission is used in Alco locomotives.
a) True b) False
134. RTTM is an example of rotating machine fitted on engine block.
a) True b) False
135. The function of crank case exhauster motor is to create sump vacuum in Alco loco.
a) True b) False
136. Overheating of interpole winding is a common defect of traction motors used in Locomotives.
a) True b) False
137. Less wear of wheel profile is an advantage of Dynamic braking.
a) True b) False

138. During dynamic braking traction motors acts as generator.
a) True b) False
139. During dynamic braking needle of load meter comes in braking zone.
a) True b) False
140. During dynamic braking output of main generator is connected to field winding of traction motors.
a) True b) False
141. Full form of MEP in MEP-660 engine control system is Medha excitation and propulsion control system.
a) True b) False
142. MEP-660 system receives digital input signals from interlocks of relays fitted on locomotives.
a) True b) False
143. Excess load is one of the probable cause of wheel slip.
a) True b) False
144. Rain on track may be a cause of wheel slip on locomotives.
a) True b) False
145. Up-gradient on track may be a cause of wheel slip on locomotives.
a) True b) False
146. The meaning of transition in reference to locomotive change of inter connection of TM from series to parallel connection.
a) True b) False
147. The booster air pressure of TSC is used as input for a woodward governor.
a) True b) False
148. The max value of fuel rack of FIP in WDM2 locomotive is 28 mm.
a) True b) False
149. The corrective action taken by woodward governor in case of low lube oil pressure is to make engine shut down.
a) True b) False
150. Overspeed trip assembly is a shut down safety device fitted on Alco loco.
a) True b) False
151. Hot engine alarm is an idle safety device fitted on Alco loco.
a) True b) False

168. The output of Auxiliary remains in certain specified limit irrespective of rpm of engine.

a) True

b) False

169. The output of exciter is fed to field winding of main generator.

a) True

b) False

170. The record of fuel oil and lube oil is maintained by homing shed for each loco.

a) True

b) False

171. LFR stands for lube to fuel ratio and it is a also performance parameter.

a) True

b) False

172. The SFC stands for specific fuel consumption and it is an index of monitoring fuel efficiency of locomotive.

a) True

b) False

173. The LOC stands for lube oil consumption and it is an index for monitoring usage and wastage of lube oil by a shed during maintenance of locomotive.

a) True

b) False

174. The codal life of Alco locomotive has now been reduced to 31 years by Railway board.

a) True

b) False

175. AESS stands for Auto engine start stop system fitted on Alco locomotives.

a) True

b) False

176. Flasher light is a locomotive is provided to make alert the coming drivers regarding any abnormality of facing locomotive.

a) True

b) False

177. While parking a locomotive at ghat section hand brake should always be applied.

a) True

b) False

178. Hand brake are mechanical brakes which gets released automatically while starting the locomotive.

a) True

b) False