(Govt. of India Ministry of Railways)

QUESTION BANK
ON
DIESEL LOCOMOTIVE

(For official use only)

IRCAMTECH/2006/M/D/QB /1.0

JULY-2006

C*entre*
for
A*dvanced*
M*aintenance*
TECH*nology*

उच्च अनुरक्षण प्रौद्योगिकी केन्द्र

Excellence in Maintenance

MAHARAJPUR, GWALIOR – 474020

QUESTION BANK

ON

DIESEL LOCOMOTIVE

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PREFACE

The artisan and supervisors involved in maintenance works of diesel locomotive are supposed to be upto-date in respect of the technical knowledge of the locomotive. The DTTC's and STC's are continuously trying to find out new methods to impart training to the supervisors and the artisans in a best possible way.

With a view to help the training centers to test the persons in a best possible way, CAMTECH has compiled a question bank on diesel locomotives. The question bank covering all topics including GM locomotive also contains the answers of the questions.

Further to make the questionnaire truly interactive and to serve as yardstick to gauge the grasp on the subject, quiz based assessment software has also been developed as a supplement to the question bank. This software will serve as wider objective of trainer's tool for assessment of candidate's progress.

The computer software is based on the question bank prepared by CAMTECH. So both are supplement to each other. I hope the question bank and the software will prove to be very useful in the training centre as well as in the field.

CAMTECH is thankful to all those who extended their help and assistance in the preparation of this question bank.

CAMTECH. Gwalior
31.07.2006

(Kundan Kumar)
Director (Mech)

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BOOK DETAILS

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CORRECTION SLIPS

The correction slips to be issued in future for this handbook will be numbered as follows:

IRCAMTECH/2006/M/D/Q.B./1.0/C.S.# XX date----------

Where "XX" is the serial number of the concerned correction slip (starting from 01 onwards).

CORRECTION SLIPS ISSUED

Sr. No. of Correction Slip	Date of issue	Page no. and Item no. modified	Remarks

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OUR OBJECTIVE

To upgrade maintenance technologies and methodologies and achieve improvement in productivity and performance of all Railway assets and man power which inter-alia would cover reliability, availability, utilisation and efficiency.

If you have any suggestions and any specific comments, please write to us.

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AIR BRAKE SYSTEM

1. Which pressure is adjusted by limiting valve
    A. F-1 pressure
    B. BP pressure
    C. FP pressure
    D. Synchronization pressure
2. When emergency brake application is done through A-9 in flasher light modified loco the condition of loco will be
    A. Loco comes to idle and nothing else happens
    B. Loco comes to idle, flasher light is on
    C. Loco comes to idle, flasher light is on & buzzer blows
    D. Loco does not come to idle, flasher light is on & buzzer blows
3. PATB buzzer blows when
    A. AFI needle is above 60
    B. AFI needle is below 60
    C. AFI needle is above 80
    D. AFI needle is above 70
4. Unit of Air Flow Indicator (AFI) is
    A. Kg/cm2
    B. Pound / inch
    C. Wagon reading
    D. Km/h

5. Function of Air vacuum proportionate valve is in Diesel locos for
    A. Acceleration
    B. Loco comes to idle
    C. For starting of loco
    D. For synchronization of brake
6. How many position setting of C3 W distributor valve has
    A. Two position setting
    B. One position setting
    C. Three position setting
    D. No different setting
7. On operating D-1 emergency which pressure drops
    A. MR
    B. BP
    C. HS-4
    D. No air supply
8. How many braking position of A-9 valve have..
    A. 05 breaking position
    B. 04 breaking position
    C. 03 breaking position
    D. 01 breaking position
9. How many braking position of SA-9 valve have..
    A. 03 position
    B. 02 position
    C. 05 position
    D. 01 position

10. Air supply for horn is from..
    A. MR-1 tank
    B. MR-2 tank
    C. ‘J’ filter
    D. HS-4
11. Permissible leakage of vacuum in train pipe is
    A. 0 cm
    B. Up to 10 cm
    C. Up to 20 cm
    D. Up to 30 cm
12. Overcharging (In air brake system) feature is applied by which air brake valve
    A. C3 W distributor valve
    B. VA-1B control valve
    C. C2-W relay valve
    D. VA-1 release valve
13. HB-5 relay valve is fitted in which type of brake system
    A. Air Brake loco
    B. Duel Brake loco
    C. In any type of loco
    D. None
14. In 28 VB control valve the vacuum of train pipe comes at
    A. Above big diaphragm
    B. Below big diaphragm
    C. Above small diaphragm
    D. Below small diaphragm

15. Above C2- relay diaphragm air pressure comes from
    A. A-9 valve
    B. SA-9 valve
    C. MR pressure
    D. Synchronization on pressure
16. Duplex check valve operates when MR pressure reaches at pressure (kg/cm2)
    A. 5 kg/cm2
    B. 6kg/cm2
    C. Always open
    D. 10 kg/cm2
17. Max. Permissible time for loco brake release in seconds is. The loco fitted with chock in C2 relay valve.
    A. 50 sec
    B. 40 sec
    C. 24 sec
    D. 30 sec
18. H-5 valves operates when BP pressure drops upto (kg/cm2)
    A. 1.8 kg/cm2
    B. 2.0kg/cm2
    C. Kg/cm2
    D. Kg/cm2
19. When H5 or HB-5 valve operates which air supply goes to PCS
    A. MR pressure
    B. HS-4 pressure

C. FP pressure

D. BP pressure

20. When big diaphragm of VA-1B control valve gets punctured, what action will happen?

A. Vacuum will drop to zero

B. Vacuum will not drop down

C. Vacuum will drop partially

D. None

21. R-6 relay valve is fitted in loco for

A. Quick MR charging

B. Quick working of AFMV valve

C. Quick vacuum building

D. By passing AFMV

22. In automatic switching on flasher light modification of locos the TDR (time delay relay) is set at...

A. 40 sec

B. 15 sec

C. 60 sec

D. 120 sec

23. The standard Colour of humidity indicator in air dryer is

A. Orange

B. Purple

C. Blue

D. White

24. Air dryer starts functioning, when MR pressure reaches to (PSI)

A. 100 PSI
B. 200 PSI
C. 150 PSI
D. Immediately as loco start

25. Thread diameter of BP & FP angle cocks (in inch) is...
    A. 1”
    B. 3”
    C. 2”
    D. 1¼ “

26. MR safety valve is set at pressure (in kg/cm^2)
    A. 10.0 kg/cm^2
    B. 6.0 kg/cm^2
    C. Above 10.5 kg/cm^2
    D. Below 6.0 kg/cm^2

27. When 7.5-mm dia hole palm end is fitted in BP pipe, the change in BP pressure is
    A. Should remain same in one minute
    B. Should fall below 4.0 kg/cm^2 in one minute
    C. Should not fall below 4.0 kg/cm^2 in one minute
    D. Should come down to 3 cm in one minute

28. In duel brake loco, if combined strainer cock is kept in close position, action will be noticed
    A. Vacuum will not be shown in gauge
    B. MR pressure will drop
    C. Synchronization in loco will be cut off
    D. BP will drop

29. By increasing HS-4 pressure (vacuum/air) action will happen
    A. Vacuum will drop
    B. Vacuum will increase
    C. BP will drop
    D. BP will increase
30. Auto drain valve blows during
    A. Loading of compressor
    B. Unloading of compressor
    C. When 'MR safety valve blow
    D. MR pressure is above 10.5 kg/cm2
31. Feed valve is charged from
    A. MR-1 tank
    B. MR-2 tank
    C. 'J' filter
    D. BP pipe
32. When vacuum is dropping by applying A-9 valve, air enters in train pipe by which valve/filter
    A. From SA-9 valve
    B. From SA-9 valve
    C. From GD-80D filter
    D. From GD –80 E filter
33. GD-80 E filter is fitted between
    A. VA-1B control valve and VA –1 release valve
    B. Train pipe and VA-1 release valve
    C. VA-1B control valve and other end open to atmosphere

D. A-9 valve and SA-9 valve

34. In case of pure air brake loco with load at the time of train parting, which safety valve is operates and brings the loco to idle
    A. H-5 relay valve
    B. HB-5 relay valve
    C. Airflow measuring valve
    D. F1 selector valve
35. When driver is working from right control stand and A-9 is applied from left control stand in emergency position, what will happen?
    A. Loco will come to idle
    B. Loco will not come to idle
    C. Loco will shutdown
    D. Only BP will drop and nothing else will happen
36. 28 LV brake system is functional in.....
    A. Air brake loco
    B. Duel brake loco
    C. Vacuum brake loco
    D. None
37. 28 LAV1 brake system is functional in.....
    A. Air brake loco
    B. Duel brake loco
    C. Vacuum brake loco
    D. None

38. In minimum reduction position of A-9 brake valve BP should drop upto (PSI)...
    A. 0 to3 PSI
    B. 4 to 7 PSI
    C. 8 to 11 PSI
    D. 12 to 15 PSI
39. Additional C-2 relay valve is used in air brake system for
    A. MR pipe charging
    B. BP pipe charging
    C. Vacuum train pipe charging
    D. Feed pipe charging
40. How many numbers of positions MU2B valve have
    A. One position
    B. Two positions
    C. Three positions
    D. Four positions
41. How many 'O' rings are fitted in spool valve of VA-1B control valve
    A. 02 Nos
    B. 03 Nos
    C. 04 Nos
    D. 05 Nos
42. In WDP-2 locos, how many horns are fitted on its hood
    A. 02 nos.
    B. 04 nos.
    C. 06 nos.

D. 08 nos.

43. In WDM_2 locos, how many horns are fitted?
    A. 02 nos.
    B. 04 nos.
    C. 06 nos.
    D. 08 nos.
44. Calibration of Air Flow measuring valve is adjusted at which at reading
    A. 80 wagon reading
    B. 90 wagon reading
    C. 100 wagon reading
    D. 110 wagon reading
45. Vacuum test plate hole dia is (in mm)
    A. 6.5 mm
    B. 7.0 mm
    C. 9.5 mm
    D. 8.0 mm
46. When does auto drain check valve operates
    A. At the time of loading of compressor
    B. At the time of loading of compressor
    C. In above both cases
    D. When loading/unloading of compressor is defective
47. Palm gauges (Orifice test gauge) has the hole size of (in mm)
    A. 9.0 mm
    B. 7.5 mm

C. 8.0 mm

D. 8.5 mm

48. MR pressure outlet pipe of air flow measuring valve goes to..

A. C-2 relay valve

B. Add. C-2 relay valve

C. A-9 brake valve

D. SA-9 brake valve

49. In case BP pressure is fluctuating the possible defect is in which valve

A. C-2 relay valve defective

B. Add C2 relay valve is defective

C. SA-9 is defective

D. C3W distributor valve is defective

50. Exhaust choke size of C-2 relay valve is (in mm)....

A. 5.0 mm

B. 6.0 mm

C. 7.0 mm

D. 8.0 mm

51. Exhaust choke size of additional C-2 relay valve is (in mm).....

A. 5.0 mm

B. 5.5 mm

C. 6.0 mm

D. 6.5 mm

52. In full service position of A-9 auto brake valve pressure reduction is between (PSI).....

A. 18 to 21 psi
B. 23 to 26 psi
C. 30 to 33 psi
D. 35 to 38 psi

53. In over reduction position of A-9 auto brake valve pressure reduction is between (PSI).....
    A. 27 to 30 psi
    B. 34 to 46 psi
    C. 50 to 62 psi
    D. 65 to 77 psi
54. When drying capacity of air dryer is reduced the colour of humidity indicator changes to
    A. Pink
    B. White
    C. Green
    D. Black
55. In case of WDP1 loco if horn strainer is choked trouble will occur
    A. Vacuum will disturb
    B. MR supply will be cut off to EP Gov
    C. MR will drop
    D. BP will drop
56. Air supply to power contractor is from
    A. MR-1
    B. MR-2
    C. BP pressure

D. HS-4 valve

57. Wiper gets the air supply from.....
    A. MR-1
    B. MR-2
    C. BP pressure
    D. HS-4 valve
58. BP pressure remains on which port of VA-1B control valve
    A. Port No.1
    B. Port No.2
    C. Port No.3
    D. Port No.6
59. In 28- LAV, system at the time of quick release by SA-9 valve which ports of SA-9 valve get connected.
    A. No.1& 7
    B. No.2 & 13
    C. No.3 & 20
    D. No.2 & 10
60. In lead position of MU2B valve which ports dose not connect with each other
    A. 3 & 13
    B. 2 & 20
    C. 53 & 63
    D. 13 & 30
61. On applying brake through A-9 valve, which port of F-1 selector valve connect with each other in synchronization braking

A. 4 & 16
B. 12 & 14
C. 30 & 15
D. 15& 20

62. In which position of A-9 brake valve its vent valve operates
    A. Minimum reduction position
    B. Full service position
    C. Over reduction position
    D. Emergency position
63. In multiple unit locos to open VA-1 release valve, air pressure comes from which valve
    A. From A-9 valve
    B. From F-1 selector valve
    C. From A-1 differential pilot valve
    D. From SA-9 valve
64. In creation of vacuum which valve comes into function
    A. SA-9 brake valve
    B. H-5 relay valve
    C. C-3 W distributor valve
    D. VA-1B control valve
65. The governor of air compressor get supply from.....
    A. MR-1 pressure
    B. MR-2 pressure
    C. BP pressure
    D. B.C. pressure
67. To operate sander valve the air supply is received from

A. MR-1 pressure
B. MR-2 pressure
C. BP pressure
D. Brake cylinder pressure

SPEEDOMETER

1. Wheel dia. of hasler (upgraded) recording and indicating system is set through
   (A) Recorder
   (B) Indicator
   (C) Pulse generator
   (D) Signal converter
2. Code disc of hasler speed sensor contains how many holes
   A. 100
   B. 200
   C. 300
   D. 400
3. Length of graph roll (in metre) is .....
   A. 14 metre
   B. 17 metre
   C. 19 metre
   D. 21 metre
4. How many sensors are required to run both recorder & Indication in Laxven system of Pulse Generator?
   A. One
   B. Two
   C. Three
   D. No sensor is required
5. In Hasler (SP-90) recorder and indicating system wheel dia is set through.....
   A. SP-90

B. Recorder
C. Both Rec. & SP-90
D. Pulse Generator

6. In modified pulse generator (MedhaT-813) speed signals generated through
   A. Sensor & disc assembly
   B. Coil & Rotor assembly
   C. Junction box
   D. Coil only
7. Which of these are not find in Medha Recording & indicating system
   A. Recorder
   B. Pulse generator
   C. Indicator
   D. Signal converter
8. Maximum time for which graph lasts (in days) is
   A. One day
   B. Seven days
   C. Fifteen days
   D. Forty five day
9. Which of these is a paper less recording & indicating system
   A. Medha
   B. Memotel
   C. Hasler upgraded
   D. Laxven

10. Pulse generator is always mounted at.....
    A. Loco R-1/2 Axle box cover plate
    B. Loco L-1/2 Axle box cover plate
    C. Driven cabin
    D. Expansion Tank
11. Wheel dia setting in Medha Recorder & indicating system is done in .....
    A. Recorder only
    B. Indicator only
    C. Recorder Electronic box only
    D. All three
12. SP-90 stores memory of .....
    A. Last three hours
    B. Last 24 hours
    C. Last 45 days
    D. Last 45 days
13. Memotel stores memory of .....
    A. Last three hours
    B. Last 24 hours
    C. Last 45 days
    D. Last 45 days
14. Clock key winding is required (in Medha Recording System) after .....
    A. Every 24 hours
    B. Every 12 hours
    C. Once in a week

D. Not required

15. TS13 speed sensor is a part of which recording & indicating system
    A. Medha
    B. Laxven
    C. Hasler
    D. Memotel
16. Laxven Recording & Indicating system HHT stands for SP-90 stores memory of .....
    A. Hello Hello Telephone
    B. Hand Held terminal
    C. Hasler hand trophy
    D. None
17. The setting of wheel dia, time, date etc. on Laxven system is by
    A. Thumb wheel
    B. HHT
    C. Laptop Computer
    D. None of these
18. Speedometer plate dowel is broken on line, what will be the result
    A. Recorder & Indicator will not work
    B. Recorder & Indicating both will work
    C. Only recorder will function
    D. Only indicator will function
19. In Hasler recorder clock key winding is done after.....

A. Once every 24 hours
B. Once in a week
C. Once in a month
D. Not required

20. In which recording & indicating system there is no display of date
    A. Medha
    B. Laxven
    C. Medha
    D. Hasler (SP-90)
21. The power supply of Hasler speed Recorder is cut off, it will record
    A. Time & Speed both
    B. Time only
    C. Speed only
    D. Neither time or speed
22. Wheel dia in Laxven recording system can be set with the accuracy of (in mm)
    A. 1mm
    B. 10mm
    C. 5mm
    D. 15mm
23. During service, speed sensor to junction box cable of medha system is broken, graph obtain after this will have the marking of.....
    A. Time only

B. Speed only
C. Both time & speed
D. Neither time nor speed

24. Clock of medha speed recorder is energized by.....
    A. 72V supply
    B. Winding the clock key
    C. A battery inside the recorder
    D. Solar energy
25. Over speed indication in Hasler recording system is provided in.....
    A. Recorder only
    B. Indicator only
    C. Signal converter only
    D. None of these
26. Over speed indication in Medha system is indicated by
    A. Blinking red light only
    B. Beep sound only
    C. Blinking red light & Beep sound
    D. No such indication is provided
27. Graph paper has exhausted in Medha recorder indication will be given by
    A. Red light from recorder indicating paper end
    B. Pointer of indicator
    C. Watch of recorder
    D. Beep sound from recorder
28. Which of these is not common on both recorder & indicator

A. Dial indicator
B. Over speed indication
C. Paper end indication
D. All three

ENGINE (POWER PACK)

1. During which stroke inlets valves opens
    A. Suction
    B. Compression
    C. Power
    D. Exhaust
2. During which stroke both valves closed
    A. Suction
    B. Compression
    C. Power
    D. Exhaust
3. In WDP-2 locos, how many Main Bearing journals are in one crankshaft?
    A. 7 Nos.
    B. 6 Nos.
    C. 8 Nos.
    D. 9 Nos.
4. In WDP-2c locomotive, how many crank pins are on crankshaft?
    A. 6 Nos.
    B. 7 Nos.
    C. 8 Nos.
    D. 9 Nos.
5. In WDP-2 loco, how many thrust bearing are used
    A. 2 Nos
    B. 1 Nos

C. 3 Nos

D. None

6. In WDP-1 locos, how many thrust bearing are used?

A. 1 Nos.

B. 2 Nos.

C. None

D. 3 Nos.

7. The size of Engine Crank Pin is (in inch)

A. 5”

B. 8.5”

C. 6.0”

D. 7.5”

8. Clearance between crankshaft journal & bearing is (in inch).....

A. .001” to .005”

B. .005” to .010”

C. .002” to .006”

D. .004” to .008”

9. How many cam segments are fitted in WDM-2c loco

A. 6 Nos

B. 7 Nos

C. 8 Nos

D. 10 Nos

10. Size of Main Bearing journals is (in inch).....

A. 6”

B. 8.5”

C. 10.0”

D. 9.0”

11. How many cam shaft bushes are fitted in one 16 cylinder block

A. 14

B. 16

C. 18

D. 20

12. What is minimum dia clearance between cam shaft & cam bush

A. .002”

B. .004”

C. .005”

D. .010”

13. How many teeth are in split gear

A. 28

B. 30

C. 34

D. 36

14. During setting of cam gear timing which piston is kept at TDC

A. R-1

B. L-1

C. R-8

D. L-8

15. How many cam segments are fitted in WDP-1 loco

A. 4
B. 6
C. 5
D. 8

16. In WDM-2c loco, how many counter weights are on one crankshaft?
    A. 2 Nos
    B. 3 Nos
    C. 8 Nos
    D. 4 Nos
17. In WDP-2 loco, which type of lubrication system in used?
    A. Splash Type
    B. Forced feed
    C. Self lubricated
    D. None of these
18. Main crankshaft vibration damper is fitted near which main bearings (in WDM-2) locos
    A. No-5
    B. No-7
    C. No-9
    D. No-1
19. In WDP-2 loco split gear is mounted on crankshaft near main bearing
    A. No-1
    B. No-5
    C. No-7

D. No-9

20. Crankshaft vibration damper is fitted with crankshaft with the help of .....
    A. Key
    B. Dowel
    C. Nuts & Bolts
    D. None of these
21. How many cam lobs are in one cam segment
    A. 3
    B. 4
    C. 6
    D. 9
22. What is the condemning size of liner?
    A. 228.68 mm
    B. 220.70 mm`
    C. 230.72 mm
    D. 231.74 mm
23. In Alco loco, single exhaust manifolds have following no. of pieces
    A. 6
    B. 7
    C. 8
    D. 5
24. In WDP-1 loco having four entry TSC, one exhaust manifold connects with how many cylinder Heads
    A. One
    B. Two

C. Three

D. Four

25. What should be minimum run out of extension shaft?

A. .005”

B. .003”

C. .001”

D. .0000”

26. Water pump is driven from.....

A. Split gear

B. Cam gear

C. Extension shaft gear

D. Main generator gear

27. Lube oil pump is driven from.....

A. Split gear

B. Cam gear

C. Extension shaft

D. Main generator gear

28. In WDP-1 locos, main bearing elongation is .....

A. .010”

B. .015”

C. .040”

D. .050”

29. What is the BHP of WDM-2 loco?

A. 2300

B. 2400

C. 2600

D. 3100

30. What is the BHP of WDP-1 loco?

A. 2300

B. 2000

C. 2600

D. 2400

31. What is the IHP of WDM-2C loco?

A. 2750

B. 3100

C. 2600

D. 2800

32. What is the BHP of WDP-2 loco?

A. 2750

B. 3100

C. 2600

D. 3300

33. In WDM-2C loco thrust bearing is fitted at location

A. No.1 Upper

B. No.4 Upper

C. No.5 Lower

D. No.9 Upper

34. Honey combing is related with ……..

A. Cylinder Head

B. Piston

C. Liner

D. Connecting rod

35. What is the maximum allowed deflection of main generator

A. ± .0005”

B. ± .001”

C. ± .015”

D. ± .0008”

36. In ALCO TSC, Rotor side, what is the material of oil seal

A. Aluminum

B. Rubber Seal

C. Brass Seal

D. Carbon Seal

37. Universal shaft is used to drive radiator fan because

A. It is rigid

B. It is strong

C. It is self align

D. It is weak

38. GE Governor is operated…….

A. Mechanically

B. Hydraulically

C. Pneumatically

D. None of these

39. TSC surging on higher notches is due to ……..

A. Excess fuel rack

B. Chocked air maize

C. Less area of nozzle ring

D. Any of the above

40. Hammering sound is coming from engine is due to……
    A. Exhaust valve bend
    B. Fuel cam worn out
    C. X-head roller worn out
    D. Any of the above
41. Smoke is coming from 'SMOKE' hole of cylinder Head indicates…….
    A. Injector seal is not proper
    B. Over torquing
    C. Injector crack
    D. Injector not fitted
42. Engine air inlet elbow bolt torquing is done at ……
    A. 150 ft. lbs
    B. 40 ft. lbs
    C. 30 ft. lbs
    D. 75 ft. lbs
43. Expresser foundation bolts is torqued at value (ft. lbs.)
    A. 300 ft. lbs
    B. 450 ft. lbs
    C. 800 ft. lbs
    D. 750 ft. lbs
44. TSP treatment is done for……..
    A. To remove scaling
    B. To decrease the cooling efficiency
    C. To avoid any chemical reaction

D. To improve chloride value

45. When hot engine alarm is operated, the condition of loco comes to
    A. Idle
    B. Run on same speed
    C. Shut down
    D. None of above
46. What is the unit of S.F.C. (Specific Fuel consumption)
    A. gm/hp/hr.
    B. Liters/Kwhr/minutes
    C. Kg/Newton/hr
    D. None
47. In yearly loco, pre priming break in filters are used……
    A. To arrest the foreign material
    B. To increase the pressure
    C. To maintain the pressure
    D. To avoid water contamination
48. The temperature difference between the two consecutive main bearings should not exceed by
    A. 5°C
    B. 2°C
    C. 10°C
    D. 20°C
49. CCE motor giving thick black smoke is due to
    A. Increase liner wear
    B. Valve guide clearance more

C. TSC rotor defective

D. Fuel motor defective

50. Fuel test cock pressure is used for checking ……..

A. Lube oil pressure dropping

B. Booster pressure dropping

C. Fuel pressure dropping

D. Air pressure dropping

51. Exhaust gas temperature at ABB TSC inlet is ……

A. 700°C

B. 600°C

C. 450°C

D. 750°C

52. Exhaust gas temperature at ALCO TSC inlet is ……

A. 300°C

B. 590°C

C. 400°C

D. 800°C

53. Which item is increases the copper content in lube oil

A. Piston wear

B. Liner wear

C. X-head floating bush wear

D. Silicon

54. In WDP-2, how many nos. of cam bushes fitted are in block

A. 10 nos.

B. 18 nos.

C. 15 nos.

D. 20 nos.

55. In WDP-1 (Chetak) the angle of firing order from L to R is

A. 60°C

B. 75°C

C. 30°C

D. 22-1/2°C

56. Split gear bolt torquing is done at ……..

A. 500 ft. lbs.

B. 400 ft. lbs

C. 200 ft. lbs

D. 300 ft. lbs

57. Engine crank case vacuum is not building up due to

A. Linear chrome plating worn out

B. Fuel motor not working

C. Dust blower not working

D. Engine RPM less

58. Which of the following is the reason of hot engine

A. ETS setting defective

B. Radiator fan not working

C. Radiator fins chocked

D. Any of above

59. Engine giving blueish smoke indicates…….

A. Water mix in fuel oil

B. Injector hole chocked partially

C. Cylinder head valve guide clearance more

D. FIP delivery less

60. White smoke given by engine is due to ……..

A. FIP not responding

B. Tappet phasing disturbs

C. Cylinder head crack internally

D. X-head having abnormal sound

61. For the same HP and bore size, which engine will be heavier

A. Petrol engine

B. Diesel engine

C. Jet engine

D. None of the above

62. What is compression ratio of WDM2-2

A. 12.0:1

B. 11.5: 1

C. 12.5:1

D. 13.0: 1

63. Minimum RPM of engine with low idle feature is

A. 390

B. 410

C. 350

D. 370

64. Which of the following is not the safety item of locomotive

A. OST

B. LWS

C. Governor

D. ACP

65. BAP is not building up due to …….

A. TSC rotor jam

B. Gov. defective

C. Air Intel gasket burst

D. Any one of above

66. Which of the following is not the reason of low BAP

A. Unmodified FIP

B. Unmodified after cooler

C. Radiators fins chocked

D. None of these

67. Which of the following is not item of fuel efficient loco

A. Steel cap piston

B. Modified FIP

C. ALCO TSC

D. Large After Cooler

68. Which of the following statement is not true

A. Comp. Ratio in diesel engine is more then Petrol engine.

B. For high HP diesel engine are used.

C. Ignition in diesel engines takes place by comp. of air.

D. For the same HP diesel Engine are lighter as compare to Petrol engine.

69. What are the possible causes of injector not responding

A. Injector nozzle hole chocked

B. Phasing on up position
C. Fuel cam lob damage
D. Any of the above

70. What is the delivery of unmodified FIP on test bench at full rack position
    A. 400 CC
    B. 350 CC
    C. 425CC
    D. 500 CC
71. What is the delivery of modified FIP on test bench at full rack position
    A. 400 CC
    B. 350 CC
    C. 425CC
    D. 450 CC
72. Which of the following is prime mover
    A. Engine
    B. Traction Generator
    C. Traction Motor
    D. None of the above
73. High viscosity indicates
    A. Mixing of water in lube oil
    B. Mixing of fuel in lube oil
    C. Mixing of carbon contents
    D. None of these
74. What is the cause of increase silicon in lube oil

(A) Linear wear

(B) X-head wear

(C) Dust

(D) Water leakage

75. Cyl. Head hydraulic testing is done at

A. 5.0 kg/cm2

B. 10.0 kg/cm2

C. Kg/cm2

D. 2.5

76. Extension shaft clearance limit is

A. .006”

B. .020”

C. .015”

D. .060”

77. In scavenging period burnt gases are pushed out by

A. Fresh air

B. By burnt gases

C. By TSC

D. Nothing of these

78. During over lapping period inlet and exhaust valve remain in

A. Closed position

B. Open position

C. Open & close position

D. Nothing of these

79. Engine hunting is due to

A. Rake movement not free

B. Excess fuel pressure
C. Low fuel pressure
D. Nothing of these

80. Low phasing means
A. After burning of fuel
B. Correct burning of fuel
C. Without burning of fuel
D. Nothing of these

81. Engine given thick black smoke due to
A. Low BAP
B. Less fuel oil level
C. Defective CCE motor
D. Defective manifold

82. Crank pin condemning limit is
A. 152.40 mm
B. 152.60 mm
C. 152.30 mm
D. 152.34 mm

83. Main bearing general surface finish is
A. 25 RMS
B. 40 RMS
C. 50RMS
D. 60 RMS

84. Crank shaft is supported at journal nos.
A. 2 &7
B. 9 &1

C. 4 & 8

D. 3 & 6

85. Crankshaft is lifted from crank pin nos. (In WDM_2)

A. 8 & 4

B. 2 & 7

C. 9 & 1

D. 3 & 7

86. Bucklnsh of cum gear is

A. .006” to .012”

B. .030” to .040”

C. .034” to .045”

D. .020” to .039”

87. The torquing value of foundation bolt of engine block is

A. 1400 ft. labs.

B. 1000 ft. labs.

C. 850 ft.lbs

D. 950 ft. lbs.

88. Cam shaft thrust is

A. .006” to .012”

B. .030” to .040”

C. .050” to .060”

D. .025” to .045”

89. Crank shaft thrust is

A. .010” to .017”

B. .040” to .050”

C. .035” to .040”

D. .060” to .070”

90. In fuel injection pump (FIP) meaning of “No Fuel Position “ is

A. Helix of plunger is to be in front of spill port

B. Helix of plunger is to be separated from split port

C. Either or above

D. None of these

91. Torquing of injector is done at

A. 50 ft. lbs.

B. 80 ft. lbs.

C. 30 ft.lbs

D. 60 ft. lbs.

92. At what degree the spray hole in injector nozzle is made

A. 60°

B. 40°

C. 50°

D. 30°

93. Out of which safety device, engine comes to idle

A. OST

B. LWS

C. ACP

D. Low lube oil indication

94. Which item increases the sodium (Na) contains in lube oil

A. Mixing of fuel oil in lube oil

B. Mixing of Water in lube oil

C. Mixing of Lube oil in fuel oil

D. None of these

UNDER TRUCK

1. Which type of bogie is used in WDM_2 loco
    A. Bi-mount
    B. Tri mount
    C. Uni mount
    D. None of above
2. Centre pivot of bogie of WDM2 is located between
    A. Leading axles and middle axles
    B. Trailing axles and middle axles
    C. On the middle axle
    D. On the trailing axle
3. How much percentage of load does center pivot of WDM2 bogie carries
    A. 40%
    B. 50%
    C. 60%
    D. 70%
4. Which type of suspension in WDM2 loco bogie has
    A. Single stage
    B. Double stage
    C. Multi stage
    D. None of the above
5. The main advantage of single stage suspension is
    A. To raise the center of gravity
    B. To lower the center of gravity
    C. To improve bogie speed

D. To reduce bogie maintenance

6. The device used to transmit loco speed from wheels to the speedometer is called
   A. Techogenerator
   B. Auxiliary generator
   C. Axle generator
   D. Main Generator
7. Traction motor load of is transferred on bogie frame through
   A. Main journal
   B. Suspension nose
   C. Axle box
   D. Helical coil spring
8. Height of side buffer should be maintained between
   A. 1105 mm to 1030 mm
   B. 1150 mm to 1000 mm
   C. 1150 mm to 900 mm
   D. 1105 mm to 800 mm
9. Buffer height can be adjusted by
   A. Adding shims to load pads & side bearers
   B. Adding shims to spring seat
   C. Both ‘A’ & ‘B’
   D. None of the above
10. Amount of shims that could be added to centre pivot & side bearers to adjust side buffer height
   A. 50 mm
   B. 21 mm

C. 12 mm

D. 35 mm

11. Amount of shims that could be added to spring seat to adjust side buffer height

A. 6 mm

B. 12 mm

C. 30 mm

D. 35 mm

12. Minimum distance between brake block & wheel in release position should be

A. 5 mm

B. 10 mm

C. 15 mm

D. 20 mm

13. Brake piston travel adjustment in WDM_2 is recommended between

A. 20mm to 30mm

B. 10mm to15 mm

C. 67 to 100 mm

D. 50mm to200 mm

14. Gear case bolts of WDM_2 bogies is torque at

A. 600-700 ft. labs.

B. 1000-1200 ft. labs.

C. 1400-1600 ft.lbs

D. 350-500 ft. lbs.

15. The wheel dia variation of WDM_2 loco on same bogie is permitted upto
    A. 2 mm
    B. 4 mm
    C. 6 mm
    D. 8 mm
16. The wheel dia variation of WDM2 on same axle is permitted upto
    A. 2 mm
    B. 3 mm
    C. 4 mm
    D. 0.5 mm
17. The wheel dia variation of WDM2 on some loco is permitted upto
    A. 10 mm
    B. 15 mm
    C. 20 mm
    D. 25 mm
18. Service limit of wheel dia. of diesel locomotive (In goods service) is
    A. 1010 mm
    B. 1040 mm
    C. 1030 mm
    D. 1020 mm
19. Torquing of axle cap bolt is done at
    A. 40 m-kg

B. 50 m-kg
C. 60 m-kg
D. 75 m-kg

20. Gauge width of broad gauge loco should be
    A. 1596+- 0.5 mm
    B. 1596+- 0.7 mm
    C. 1596+- 0.8 mm
    D. 1596+- 0.9 mm
21. The diameter of new axle of WDM_2 bogie at the location of suspension bearing should be
    A. 7.250”+- 0.002”
    B. 9.000”+- 0.002”
    C. 9.005”+- 0.002”
    D. 9.050”+- 0.002”
22. In Co- Co bogie, traction motor cap bolts is torque at
    A. 700-800 ft. lbs.
    B. 750-800 ft. lbs.
    C. 759-810 ft. lbs.
    D. 775-825 ft. lbs.
23. While inspecting the nose suspension wear plate of a Co-Co bogie maximum clearance permitted on motor lugs is
    A. 5 mm
    B. 10 mm
    C. 15 mm
    D. 20 mm
24. Cranks in the axle are detected by

A. Magna flux test
B. Ultrasonic test
C. Zyglo test
D. Chemical test

25. Nos. of pinion teeth in GE- 752 TM is
A. 15
B. 16
C. 17
D. 18

26. Nos. of teeth of bull gear of WDM_2 bogie is
A. 62
B. 65
C. 68
D. 70

27. Free height of outer coil spring of WDM_2 loco is
A. 450+-8 mm
B. 451+- 8 mm
C. 452 +- 8 mm
D. 455+- 8 mm

28. Free height of inner coil spring with nominal coil dia 130 mm of the bogie of WDM2 loco is
A. 423 mm
B. 423+- 6mm
C. 423+- 8mm
D. 423+- 2mm

29. Axle load of WDP_2 loco is

A. 17.5 Tones
B. 18.5 Tones
C. 19.5 Tones
D. 20.5 Tones

30. Weight of complete bogie of WDP_2 loco is
A. 24.12 Tones
B. 24.13 Tones
C. 24.14 Tones
D. 24.15 Tones

31. Length of WDP2 loco over buffer is
A. 19000 mm
B. 19128 mm
C. 19182 mm
D. 19185 mm

32. No. of primary helical coil springs per bogie in WDP_2 loco is
A. 10
B. 12
C. 14
D. 16

33. No. of primary helical coil springs in WDP_2 loco is
A. 24
B. 25
C. 26
D. 27

34. No. of secondary helical coil springs per bogie in WDP_2 loco is
    A. 6
    B. 8
    C. 10
    D. 12
35. No. of secondary helical coil springs in WDP_2 loco is
    A. 10
    B. 12
    C. 14
    D. 16
36. Free height of primary helical coil springs of WDP_2 loco is
    A. 387.8 mm
    B. 378.8 mm
    C. 475 mm
    D. 457 mm
37. Free height of secondary helical coil springs of WDP_2 loco is
    A. 387.8 mm
    B. 378.8 mm
    C. 475 mm
    D. 457 mm
38. No. of primary vertical dampers per bogie in WDP_2 loco is
    A. 4
    B. 5
    C. 6

D. 8

39. No. of primary vertical dampers per loco in WDP_2 loco bogie

A. 4

B. 6

C. 8

D. 10

40. No. of secondary vertical damper per bogie in WDP_2 loco is

A. 4

B. 6

C. 8

D. None

41. No. of secondary vertical damper per loco in WDP_2 loco bogie is

A. 4

B. 6

C. 8

D. None

42. No. of secondary lateral damper per bogie in WDP_2 loco is

A. 2

B. 3

C. 4

D. 5

43. No. of secondary lateral damper per loco in WDP_2 loco bogie is

A. 2

B. 3

C. 4

D. 5

44. Vertical clearance between bolster & bogie frame in WDP_2 loco should be

A. 20 mm

B. 25 mm

C. 30 mm

D. 35 mm

45. Vertical clearance between under frame & bolster of WDP_2 loco should be

A. 5 mm

B. 10 mm

C. 15 mm

D. 20 mm

46. Lateral clearance between bolster & bogie frame (on each side) in WDP_2 loco is

A. 28 mm

B. 30 mm

C. 32 mm

D. 34 mm

47. Longitudinal clearance between bolster & bogie frame (on each side) in WDP_2 loco is

A. 10 mm

B. 15 mm

C. 7 mm

D. 20 mm

48. No. of friction snubber in WDP_2 bogie is

    A. 2
    B. 4
    C. 8
    D. None of these

49. Bogie of WDP_2 loco is designated as

    A. Flexi-coil Mk-2
    B. Flexi-coil Mk-5
    C. Flexi-coil Mk-7
    D. Flexi-coil Mk-10

50. Total no. of guide links per bogie in WDP_2 loco is

    A. 8
    B. 10
    C. 12
    D. 14

51. Total no. of guide links in WDP_2 loco is

    A. 12
    B. 16
    C. 18
    D. 20

52. No. of traction bars per bogie in WDP_2 loco is

    A. 1
    B. 2
    C. 3
    D. 4

53. No. of traction bars in WDP_2 loco is

A. 1
B. 2
C. 3
D. 4

54. To transfer traction & breaking forces between bogie frame & bolster WDP_2 loco bogie is provided with
    A. Guide link
    B. Traction bar
    C. Damper
    D. Axle boxes
55. End axles of WDP_2 bogie are
    A. Plane type
    B. Special type
    C. Wing type
    D. Equalizer type
56. Suspension of flexi coil MK-5 bogie is
    A. Double stage
    B. Single stage
    C. Three stage
    D. Multi stage
57. For testing of bogie spring, the magnitude of load is
    A. 3050 kg
    B. 3562 kg
    C. 3864kg
    D. 3965 kg

58. The shape of Bo- Bo bogie frame resembles to English alphabet
    A. A
    B. C
    C. E
    D. H
59. Expanded from of TBU is
    A. Truck brake unit
    B. Tread brake unit
    C. Terminal brake unit
    D. Thread brake unit
60. The thickness of metal washer used in MSU of WDP_2 loco is
    A. 10.000 mm
    B. 11.000 mm
    C. 12.000 mm
    D. 13.000 mm
61. In WDP_2 loco bogie the torquing value of M-36 bolts that connects the suspension tube with magnet frame should be
    A. 1100-1200 ft. lbs.
    B. 1186- 1420 ft. lbs.
    C. 1320-1440 ft.lbs
    D. 1423-1560 ft. lbs.
62. The adjustment washer used in MSU of WDP_2 loco bogie is fitted in
    A. One piece

B. Two pieces
C. Three pieces
D. Four pieces

63. The adjustment washer pieces used in MSU of WDP_2 loco bogie is welded as it may cause
    A. Failure of bearing due to electric arc of welding
    B. Loss of lateral play
    C. Both (A) & (B)
    D. None of the above
64. The thickness of horizontal centre pivot liner of WDP_2 loco in bogie is
    A. 6 mm
    B. 8 mm
    C. 10 mm
    D. 12 mm
65. The clearance between new centre pivot & vertical liners of WDP_2 loco bogie is
    A. 3.0 mm
    B. 1.2 mm
    C. 2.0 mm
    D. 2.5 mm
66. The service limit of clearance between centre pivot & vertical liners of WDP_2 loco bogie is
    A. 1 mm
    B. 2 mm
    C. 6 mm

D. 10 mm

67. Silent block flexible bearings are used in
    A. Traction bar
    B. Guide link
    C. Traction motor
    D. Suspension tube
68. The traction force taken by each traction bar in WDP2 loco is
    A. 8000 kg
    B. 10,000 kg
    C. 12,000 kg
    D. 15,000 kg
69. Shape of bolster used in WDP2 loco resembles with English alphabet
    A. A
    B. C
    C. E
    D. H

70. While inspecting the nose suspension wears plate in WDP_2 loco bogie, the clearance permitted on motor lugs is
    A. 4mm
    B. 8 mm
    C. 12 mm
    D. No clearance
71. Slack adjuster is initially set to provide a safe release of

A. 6 mm
B. 8 mm
C. 10 mm
D. 12 mm

72. With new wheels & brake shoes the initial setting of safe release is 10 mm. At this position the piston travel will be
    A. 50 mm
    B. 57 mm
    C. 67 mm
    D. 77 mm
73. The limit of flat spot on wheel is
    A. 30 mm
    B. 40 mm
    C. 50 mm
    D. 60 mm
74. If flat spot on wheel is exceeds 50 mm, then
    A. Wheel set to be sent for re disking
    B. Wheel set should be connected
    C. Dressing is done before turning
    D. None of the above

ELECTRICAL

1. Fan blade thickness in modified fan of Traction Alternator is
    A. 6 mm
    B. 2 mm
    C. 10 mm
    D. 20 mm
2. The total no. of carbon brushes used in Traction Alternator are
    A. 10
    B. 6
    C. 4
    D. 8
3. FTTM (No Power take of Unit) type PT 70 AZ is not used in
    A. WDP_2
    B. WDP_1
    C. WDM_{2C}
    D. WDM_2
4. In WDP_2 locomotive output of Traction Alternator at 400 rpm is
    A. 120 HP
    B. 160 HP
    C. 140 HP
    D. 200 HP
5. The carbon brush grade used in Traction Alternator type 10102 DW is……
    A. HM6

B. EGO
C. EG14D
D. EG225

6. Bearing used in Front Track Traction Motor (PTC) type 70 AZ are
   A. NU314, 6314
   B. NU310, 6313
   C. NU320, 6313
   D. NU330, 6314
7. The Auxiliary Machine type 3101 AY and 3101 AY1 are
   A. Interchangeable
   B. Non interchangeable
   C. Fitted in WDM4
   D. Fitted in WDS4
8. No. of main poles in Auxiliary Generator type 3101 AY1 are
   A. 4 pole
   B. 6 pole
   C. 2 pole
   D. 8 pole
9. The direction of rotation of Auxiliary M/Cs type 3101 AY1 is
   A. CCW from commutator end
   B. CW from commutator end
   C. CCW from pinion end
   D. CW from pinion end
10. The continuous rating of Auxiliary M/C type 3101 AY used as (V,A, rpm) exciter is

A. 75V, 250 A, 2380 rpm
B. 70V, 250 A, 2380 rpm
C. 75V, 200 A, 2380 rpm
D. 75V, 250 A, 2280 rpm

11. The continuous rating of Auxiliary M/C type 3101 AY used as a Aux. Gen. (V,A, RPM) is
    A. 75V, 160 A, 920 to 2380 rpm
    B. 70V, 150 A, 920 to 2380 rpm
    C. 75V, 170 A, 920 to 2380 rpm
    D. 75V, 180 A, 920 to 2280 rpm
12. The total nos. of main pole in Auxiliary Machine type AG-51 are
    A. 8
    B. 2
    C. 6
    D. 4
13. The brush grade used in Auxiliary Machine type 3101 AY is
    A. EG 251
    B. EG14D
    C. HM6
    D. EGO
14. Gear ratio of Eddy current clutch gear unit (Right angle gear box) is
    A. 1:1.312
    B. 1:1.321
    C. 1:1.231

D. 1:1.213

15. The continues rating of ECC (Eddy current clutch) is (KW, RPM)…
    A. 60KW, 1000 rpm
    B. 60KW, 1200 rpm
    C. 80KW, 1000 rpm
    D. 80KW, 1200 rpm
16. The nominal air gap between inner and outer drum of ECC (Eddy current clutch) is
    A. 0.8 to 1.2mm
    B. 1.9mm to 2 mm
    C. 2mm to 3 mm
    D. 9mm to 4mm
17. In ECC (Eddy current clutch), clutching of inner and outer drum is through
    A. Mech. Clutch
    B. Electrical clutch
    C. Magnetic clutch
    D. By pulley arrangement
18. The brush grade used in ECC (Eddy current clutch) is
    A. EG 55
    B. EG225
    C. EG14D
    D. EGO
19. The Auxiliary Generator has total numbers of magnetic poles

A. 40
B. 80
C. 10
D. 20

20. Type of the bearings used in the vertical shaft of the ECC is
    A. K639/K632
    B. K635/K632
    C. K636/K632
    D. K655/K632
21. Type of the bearings used in the horizontal shaft of the ECC is
    A. K45290/K45220
    B. K45291/K45220
    C. K45280/K45220
    D. K45285/K45220
22. Breaking blower (BKBL) motor have total numbers of interpole
    A. 4
    B. 6
    C. 8
    D. 10
23. ETS-2 is set at temp. Degree centigrade
    A. 64 ^{0}C
    B. 68 ^{0}C
    C. 90 ^{0}C
    D. 86 ^{0}C

24. Clearance between brush holder and slip ring of Traction Alternator type 10106 AZ is
    A. 2 to 3 mm
    B. 3 to 4 mm
    C. 4 to 5 mm
    D. 1 to 2 mm
25. The bearing used in rotor of Traction Alternator type 10106 AZ is
    A. NU 330
    B. NH 330
    C. NU314
    D. NH 300 EM/C4
26. Gearbox oil capacity of Traction Alternator type 10106 AZ (In WDP1 loco) is
    A. 1 Lts.
    B. 2.6 Lts.
    C. 4 Lts.
    D. 5 lts.
27. Total numbers of carbon brushes used in BKBL/Grid blower motors are
    A. 12
    B. 24
    C. 8
    D. 6
28. The brush grade used in T/M type 5002 AZ is……
    A. EG14D

B. EG15D
C. EG225
D. EG55

29. How many poles are in rotor winding of traction Alternator type 10106 AZ
    A. 10 poles
    B. 8 poles
    C. 12 poles
    D. 6 pole
30. The stator winding of Traction Alternator type 10106 AZ (In WDP1 loco) is connected as
    A. Star connected
    B. Delta Connected
    C. Star connected with two parallel path per phase
    D. Delta connected with two parallel path per phase
31. Tacho-generator have total numbers of magnetic poles
    A. 4
    B. 2
    C. 6
    D. 8
32. The brush grade used in Traction Alternator type 10106 AZ is
    A. EG15
    B. EG55
    C. HM6
    D. EGO

33. Traction Alternator type 10106 AZ is used in which type of loco
    A. WDP1
    B. WDM2
    C. WDP2
    D. WDP4
34. Total number of brush holder assembly fitted in Traction Alternator are
    A. 4
    B. 6
    C. 9
    D. 2
35. Traction Alternator type 10106 AZ (WDP1) is used up to (RPM, HP)
    A. 1000rpm, 2000 HP
    B. 1000rpm, 1800 HP
    C. 1000rpm, 2300 HP
    D. 1050 rpm, 3150 HP
36. Total numbers of interlopes fitted in Traction Generator GE type are
    A. 10
    B. 6
    C. 12
    D. 8
37. Tacho generator output voltage is …
    A. A/C single phase

B. DC

C. A/C three phase

D. Pulsating DC

38. Brush size of Traction Gen. GE type is ……

A. 3/4x 11/4x 2-1/2 inch

B. 3/4x 4/11x 2-1/2 inch

C. 4/3x 11/4x 2-1/2 inch

D. 4/3x 11/4x 2-1/2 inch

39. Condemning size of brush for Traction Gen. GE type is.

A. 13/16 inch

B. 12/16 inch

C. 13/15 inch

D. 13/18 inch

40. Brush holder to commutator clearance of GE type Traction Gen. is

A. 3/32 to1/8 inch

B. 3/32 to1/25 inch

C. 32/3 to 1/40 inch

D. 3/32 to 1/60 inch

41. Run out of commutator of Traction Gen. After reconditioning is

A. 0.002”

B. 0.005”

C. 0.006”

D. 0.007”

42. Oscillator card is also known as…….

A. 188 card
B. 187 card
C. 253 card
D. 254 card

43. Traction motor-165 is a ….
A. D.C. Series Motor
B. A.C. Series Motor
C. D.C. Shunt Motor
D. Induction Motor

44. Main field resistance of TM-165 at 25 ^{o}C in m- ohms
A. 10 m ohm
B. 6.5 m ohm
C. 20 m ohm
D. 30 m ohm

45. Weight of complete TM-165 with pinion & axle caps is.
A. 3500 kg
B. 2800 kg
C. 3340 kg
D. 3600 kg

46. Nominal new diameter of Commutator for TM-165 in mm is
A. 422 mm
B. 200 mm
C. 550 mm
D. 500 mm

47. In bearing NU-300 EM/C4 ; C4 stands for ……
A. Class of Radial clearance

B. Bearing with extra load carrying capacity
C. Machined brass cage
D. Angle ring

48. Inner diameter of bearing NH 320EM /C4 is
A. 400 mm
B. 200 mm
C. 300 mm
D. 100 mm

49. TM-165 brush Holder assembly Spring pressure is.
A. 2 kg
B. 4.5 kg
C. 10 kg
D. 12 kg

50. Which class of insulation is used in TM-165M
A. A
B. B
C. C
D. H

51. HP of TM type 165M is
A. 600HP
B. 800HP
C. 333HP
D. 700HP

52. How many numbers of compoles are fitted in TM-165M
A. 4
B. 5

C. 6

D. 7

53. What is the condemning dia. size of comm. of Traction Motor type 165M is (diameter in mm)

A. 420 mm

B. 430 mm

C. 390 mm

D. 500 mm

54. 'K' value of 18 teeth Traction Motor pinion in mm is

A. Max. 88.72 mm to Min.86.99 mm

B. Max. 89.74 mm to Min.87.02 mm

C. Max. 90 mm to Min.88 mm

D. Max. 84.02 mm to Min.82.02 mm

55. Max. rpm of Traction Motor type 165M is……

A. 2275 rpm

B. 2375 rpm

C. 2175 RPM

D. 2475 RPM

56. At which temperature Traction Motor type -165M pinion is mounted on shaft (in degree centigrade)

A. 170°C above ambient temperature

B. 140°C above ambient temperature

C. 200°C above ambient temperature

D. 500°C above ambient temperature

57. Traction Motor type -165M pinion never be heated above

A. 100°C

B. 150°C

C. 220°C

D. 300°C

58. Which type of bearing fitted in pinion end of Traction Motor type -165

A. NU320

B. NU330

C. NU328

D. NU326

59. Which type of bearing fitted in comm. End of Traction Motor type -165

A. NU320

B. NU330

C. NH320

D. NI350

60. Gap between holder assembly and Comm. of Traction Motor type -165M (in mm) is

A. 10mm to 11mm

B. 7mm to 8 mm

C. 1.6 mm to 2.4 mm

D. 4.5 mm to 6.5 mm

61. New commutator diameter of Traction Motor type 7362 CGL make (in mm) is...

A. 300mm

B. 490mm

C. 380mm

D. 600mm

62. Minimum usable diameter of Comm. of Traction Motor type 7362 in mm is….

A. 400mm
B. 600mm
C. 360mm
D. 500mm

63. What is the brush spring pressure of Traction Motor type 7362 Brush holder

A. 3.0 kg to 3.6 kg
B. 8.0 kg to 9.0 kg
C. 9.0 kg to 10.0 kg
D. 10.0 kg to 11.0 kg

64. Reference mixer card is also known as ……..

A. 253 card
B. 186 card
C. 188 card
D. 187 card

65. Which coil are fitted in pilot valve of EDC GE Gov.

A. Coil + clutch coil
B. Stabilizing coil + clutch coil
C. Speed coil + Stabilizing coil
D. Speed coil only

66. Speed coil balancing current of GE Gov. is

A. 500MA
B. 400 MA

C. 150MA

D. 475 MA

67. Which component of GE Governor shut down the locomotive when LWS operated

A. Speed coil

B. Stabilizing coil

C. Clutch coil

D. LCR

68. In running condition (without load) the LCR position in GE Gov. is at 'O' clock

A. 1 Hours

B. 10 Hours

C. 11 Hours

D. 5 Hours

69. LCR position on Idle condition in WW Gov. is at 'O' clock

A. 11 Hours

B. 12 Hours

C. 17 Hours, 30 minute

D. 15 Hours

70. LCR position of WW Governor (Clock) on full load HP is

A. 11 Hours

B. 12 Hours

C. 08 Hours

D. 15 Hours

71. Which solenoids are operate on idle condition in WW Gov.

A. A Solenoid

B. B Solenoid
C. A Solenoid
D. None

72. Which solenoid operated when LWS worked in WW Gov. is
A. C Solenoid
B. B Solenoid
C. D Solenoid
D. None

73. Low lube oil shut down pressure setting in WW governor fitted locomotive.
A. 2.0 Kg/cm^2
B. 1.3 Kg/cm^2
C. 2.5 Kg/cm^2
D. 3.0 Kg/cm^2

74. On 3rd notch solenoid operated in WW governor
A. D Solenoid
B. A Solenoid
C. C Solenoid
D. A-C Solenoids

75. In WW Governor which solenoid operated on operation of Low Lube oil plunger.
A. C Solenoid
B. CD Solenoids
C. AD Solenoids
D. None

76. Traction Motor (make-CGL-Q7362) has total numbers of interpole…
    A. 6
    B. 10
    C. 4
    D. 8
77. Current rating of MB1 circuit breaker in WDM_2 DC/DC loco is
    A. 100 Amp
    B. 150 Amp
    C. 200 Amp
    D. 250 Amp
78. Cardex is the system used for…….
    A. Maintenance procedure
    B. Maintenance record keeping
    C. Overhauling of cards
    D. Used a term of electrical troubleshooting
79. Current rating of MB2 circuit breaker in WDM_2, DC/DC loco is
    A. 100 Amp
    B. 250 Amp
    C. 200 Amp
    D. 150 Amp
80. The higher temperature of the electrolyte in the battery caused life of battery to..
    A. Increased

B. No effect on life of battery

C. Decreased

D. Excess temp. is must for good life

81. Blowing air pressure in TG/TA is recommended between…

A. 0.2 Kg/cm^2

B. 2 to 4 Kg/cm^2

C. 8 to 10Kg/cm^2

D. Pressure of the blowing air is not specified

82. Which type of Traction Alternator used in WDP_1 loco is …..

A. TG10931AZ

B. TA10102 CW

C. TA10102 DW

D. TA10106AZ

83. The function of slip rings in Traction Alternator is

A. Work as commutator

B. Work as a current collector

C. Work for balancing of Tr. Alt. rotor

D. None of the above

84. The full form of SAR is a

A. Speed adjusting relay

B. Speed adjusting resistance

C. Safety auxiliary relay

D. None of the above

85. Generator field cover load relay operating current limit is..

A. 50 Amp

B. 100 Amp

C. 280 Amp

D. 400 Amp

86. Front light bulb is rated at voltage…

A. 32 volt

B. 24 volt

C. 12 volt

D. 72 Volt

87. Which safety is provided for diesel engine

A. Cattle Guard

B. Heat light

C. LWS

D. F/Light

88. The function of Field Control Penal in diesel Electric locomotive is.

A. To control the head light voltage

B. To control the battery charging voltage

C. To control the exciter field voltage

D. To control the Techo Generator voltage

89. The voltage limit of Traction Generator 10931 AZ is at….

A. 685V

B. 800V

C. 770V

D. 1100V

90. Total nos. of capacitors used in power rectifier panel of AC/DC locos are…….

A. 06

B. 08

C. 12

D. 04

91. In AC/DC loco time delay relay (TDR) is provided for time delay of

A. 4 seconds

B. 8 seconds

C. 1.8 seconds

D. 12 seconds

92. The generator used on WDM_2 diesel locomotive is ……

A. Shunt Generator

B. Separately excited generator

C. Compound generator

D. None of the above

93. If a supply of wire no.0 or 8 nos. breaks up, what will happen

A. Loco will not move to any direction

B. Loco will move only one direction

C. Loco will move in both direction

D. Loco will move in both direction

94. The lubrication of roller bearings in Traction Alternator/ Traction Generator is done by

A. Through greasing externally

B. No lubrication is required

C. Through gear of Aux. Gen. Exciter & idler gear

D. Once lubrication done during overhauling is sufficient

95. Ovality of Tr. Alternator slip rings is allowed up to
    A. 0.010”
    B. .002”
    C. .005”
    D. .006”
96. Current rating of a single diode used in power rectifier AR 5400 A in Amps…
    A. 1000 Amp
    B. 5000 Amp
    C. None of these
    D. 2500 Amp
97. Resistance found defective while checking power reduction through WSR relay is …
    A. BHER
    B. EFR
    C. WR 8,9,10
    D. LAR
98. Reserve control diode fitted in diesel loco is for …..
    A. Blocking the reserve flow of current to Tr. Gen.
    B. Blocking the reserve flow of current to Aux. Gen.
    C. Blocking the reserve flow of current to Techo Gen.
    D. Blocking the reserve flow of current to fuel motors
99. Which relay has lowest value of coil resistance……..
    A. ERR

B. GR

C. ERR

D. ESR-1

100. On which type of loco thyrite resistor is fitted

A. WDM_2

B. WDM_3

C. WDS_6

D. YDM_4

101. GFLOR relay is provided in AC/DC locos for safety of

A. Phase to Phase shorting of Tr. Alt.

B. Flash over between GF contacts

C. Earthing of Tr. Alternator

D. GF Contactor

102. If SAR relay is not energized what will happen

A. Engine will over speed

B. Engine will start

C. Engine will start normally but GF will not P/up

D. Engine will start normally but could not be notched up

103. OST RPM is adjusted by which SAR of ECP

A. SAR-1

B. SAR-2

C. SAR-3

D. SAR-4

104. Welding of FS contactor tips will give the indication of

A. Ground relay operating

B. EP contactor fluctuating
C. Wheel slip on Ist notch onwards
D. GF not picking up

105. If the reference voltage is more than 24.4 volts, the defects in
A. LCP
B. SP
C. GCR
D. Pilot valve

106. In MU operation both the loco can be shut down through…
A. Stop Button
B. OST
C. MUSD
D. Lube oil plunger

107. The wires connected on PCS by pass switch are ……
A. 30K-46
B. 18A-4
C. 6H-4
D. 30K-4

108. The combination of Tr. Motors across WSR-1 in parallel is
A. 1,5
B. 2,4
C. 3,4
D. 2,3

109. The combination of Tr. Motors across WSR-3 in parallel is
A. 3,6

B. 2,5

C. 3,4

D. 4,6

110. No load voltage is checked on wire No.

A. 34G-36

B. 34-36

C. GK-2-GA

D. 34E-36

111. GCR resistance is a part of …..

A. ECP

B. VRP

C. TRP

D. EXCP

112. The gap between ECC slip rings & brush holder is to be kept

A. 5mm

B. 8mm

C. 2mm

D. 15mm

113. Reverser Contactor used on diesel loco is ……

A. To change the direction of field

B. To use the Dynamic braking

C. To pass the power supply to T/Motors

D. None of the above

114. MCOS is used in WDP1 loco in case of trouble

A. Power Ground

B. Wheel Slip

C. EP Contactor fluctuates

D. Power ground or wheel slip operates

115. What is minimum length of split brush of Traction Motor type165-M when brush becomes inoperative (in mm)

A. 60 mm

B. 20 mm

C. 27.8 mm

D. 50.0 mm

GM LOCOMOTIVE

1. What is the hours power of WDP_4 & WDG_4 locomotive

   A. 3000 HP
   B. 3500 HP
   C. 4000 HP
   D. 4500 HP

2. What is the model designation of WDG_4 locomotive

   A. GT46 MAC
   B. GT46
   C. GT46PAK
   D. ALCO 251

3. What is the model designation of WDP_4 locomotive

   A. GT46 MAC
   B. GT46
   C. GT46PAK
   D. ALCO 251

4. Which type of diesel engine model is fitted in GM locomotive

   A. ALCO-251
   B. GT46
   C. 710 G3B
   D. GT 46MAC

5. Which type of diesel engine is fitted in GM locomotive

   A. Four stroke
   B. Three stroke

C. One stroke
D. Two stroke

6. What is the compression ratio of the GM locomotive

A. 16:1
B. 14:1
C. 13:1
D. 15:1

7. What is the full speed RPM of the GM locomotive engine

A. 1000 RPM
B. 904 RPM
C. 900 RPM
D. 950 RPM

8. How much the minimum speed of the GM locomotive engine without LIR (low idle relay)

A. 200 RPM
B. 250 RPM
C. 269 RPM
D. 249 RPM

9. How much the minimum speed of the GM locomotive engine with LIR

A. 200 RPM
B. 250 RPM
C. 269 RPM
D. 249 RPM

10. What is the lube oil capacity in system of GM loco?

A. 1000 Liters
B. 1100 Liters

C. 950 Liters
D. 910 Liters

11. What is the fuel tank capacity in the GM locomotive

A. 5000 Liters
B. 6000 Liters
C. 4000 Liters
D. 7000 Liters

12. What is the coolent water capacity in the GM locomotive

A. 1200 Liters
B. 1100 Liters
C. 1045 Liters
D. 1145 Liters

13. Capacity of sand box in the WDP $_4$ & WDG $_4$ locomotive

A. 12 Ft3/ box
B. 15 Ft3/ box
C. 14 Ft3/ box
D. 18 Ft3/ box

14. What is the minimum continues speed of the WDG $_4$ locomotive

A. 21.5 Kmph
B. 22.5 Kmph
C. 20.5 Kmph

D. 23.5 Kmph

15. What is the maximum speed of the WDG $_4$ locomotive

A. 150 Kmph
B. 140 Kmph
C. 120 Kmph
D. 110 Kmph

16. Which type of bogie fitted in the GM locomotive

A. Single suspension
B. Double suspension
C. Triple suspension
D. None of these

17. In the fuel oil system which type of injectors provided in the GM locomotive

A. Unit injectors
B. Injectors with HP line
C. Injector with cam
D. None of these

18. In the two stroke engine the cylinder head of the engine equipped with

A. Inlet & Exhaust valves
B. Only Inlet valves
C. Only Exhaust valves
D. None of these

19. In the GM locomotive the Turbo charger is driven by

A. Exhaust Gas
B. Gear Train

C. Gear Train & Exhaust gas
D. None of these

20. In the WDP 4 & WDG4 locomotive engine how much lube oil pumps used

A. One
B. Two
C. Three
D. Four

21. In the GM locomotive the air compressor is .....

A. Air cooled
B. Water cooled
C. Oil cooled
D. None of these

22. In the WDP $_4$ & WDG $_4$ locomotive the coolant used in compressor is

A. Engine coolant
B. Compressor coolant
C. Raw water
D. None of these

23. Air compressor the lube oil sump capacity is

A. 10 Liters
B. 12 Liters
C. 15 Liters
D. 23 Liters

24. Air compressor in the GM locomotive is

A. Single stage

B. Two stage
C. Three stage
D. Four stage

25. How many brake cylinders are used per bogie

A. 06 Nos
B. 04 Nos
C. 02 Nos
D. 05 Nos

26. Which type of bogie is used in GM locomotive
A. Fabricated bogie
B. Cast steel
C. High tensile cast steel
D. None of these

27. In GM locomotive Air brake is controlled by

A. Mechanically
B. Electrically
C. Computer
D. None of these

28. Air brake system in WDP_4 &WDG_4 loco is

A. 28LAV-1
B. 28LV-1
C. CCB-KNORR
D. None of these

29. In GM locomotive the first schedule carried out after

A. One month
B. Three month

C. Four month
D. 15 Days

30. Maximum speed of WDP_4 locomotive is

A. 120 Kmph
B. 160 Kmph
C. 150 Kmph
D. 180 Kmph

31. TM pinion and bull gear ratio in WDG_4 loco is
A. 17:90
B. 17:77
C. 65:18
D. 90:35

32. TM pinion and bull gear ratio in WDP_4 loco is
A. 17:90
B. 17:77
C. 18:65
D. 35:90

33. Total weight of WDG_4 loco is

A. 140 Tones
B. 129 Tones
C. 160 Tones
D. None of these

34. Total weight of WDP_4 loco is

A. 115.8 Tones
B. 119.8 Tones
C. 121.8 Tones
D. None of these

AIR BRAKE SYSTEM

Q. No.	ANSWER	Q. No.	ANSWER	Q.No.	ANSWER
1.	D	23.	C	45.	D
2.	A	24.	A	46.	B
3.	C	25.	D	47.	B
4.	C	26.	C	48.	B
5.	D	27.	C	49.	B
6.	A	28.	C	50.	A
7.	B	29.	A	51.	C
8.	B	30.	B	52.	B
9.	A	31.	A	53.	B
10.	A	32.	C	54.	B
11.	B	33.	B	55.	B
12.	C	34.	A	56.	A
13.	B	35.	A	57.	A
14.	A	36.	C	58.	C
15.	A	37.	B	59.	A
16.	A	38.	B	60.	D
17.	C	39.	B	61.	A
18.	A	40.	B	62.	D
19.	A	41.	C	63.	C
20.	B	42.	D	64.	D
21.	B	43.	B	65.	A
22.	C	44.	C	66.	A

SPEEDOMETER

Q. No.	ANSWER	Q. No.	ANSWER	Q.No.	ANSWER
1.	D	11.	D	21.	B
2.	B	12.	A	22.	A
3.	B	13.	D	23.	A
4.	B	14.	D	24.	C
5.	A	15.	A	25.	D
6.	A	16.	B	26.	C
7.	D	17.	B	27.	A
8.	C	18.	A	28.	C
9.	B	19.	A		
10.	B	20.	C		

ENGINE

Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER
1.	A	26.	C	51.	C
2.	B	27.	C	52.	B
3.	D	28.	C	53.	C
4.	D	29.	B	54.	B
5.	B	30.	B	55.	B
6.	A	31.	B	56.	D
7.	C	32.	A	57.	A
8.	B	33.	D	58.	D
9.	C	34.	C	59.	C
10.	B	35.	D	60.	C
11.	C	36.	C	61.	B
12.	C	37.	C	62.	C
13.	D	38.	B	63.	C
14.	A	39.	D	64.	C
15.	B	40.	D	65.	D
16.	C	41.	A	66.	D
17.	B	42.	D	67.	C
18.	D	43.	B	68.	D
19.	D	44.	A	69.	D
20.	C	45.	B	70.	B
21.	C	46.	A	71.	A
22.	B	47.	A	72.	A
23.	B	48.	C	73.	C
24.	C	49.	A	74.	C
25.	D	50.	C	75.	A

ENGINE

Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER
76.	A	83.	A	90.	A
77.	A	84.	A	91.	A
78.	B	85.	B	92.	B
79.	A	86.	A	93.	C
80.	A	87.	A	94.	B
81.	A	88.	A		
82.	C	89.	A		

UNDER TRUCK

Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER
1.	B	26.	B	51.	B
2.	A	27.	B	52.	B
3.	C	28.	B	53.	D
4.	A	29.	C	54.	B
5.	B	30.	B	55.	C
6.	C	31.	C	56.	A
7.	B	32.	B	57.	C
8.	A	33.	A	58.	D
9.	C	34.	B	59.	B
10.	C	35.	D	60.	B
11.	B	36.	A	61.	B
12.	B	37.	C	62.	B
13.	C	38.	A	63.	C
14.	B	39.	B	64.	C
15.	A	40.	A	65.	B
16.	D	41.	C	66.	C
17.	D	42.	A	67.	B
18.	A	43.	C	68.	B
19.	B	44.	D	69.	D
20.	A	45.	B	70.	C
21.	B	46.	C	71.	C
22.	C	47.	C	72.	C
23.	B	48.	D	73.	C
24.	B	49.	B	74.	C
25.	D	50.	A		

ELECTRICAL

Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER
1.	A	26.	A	51.	C
2.	C	27.	C	52.	A
3.	D	28.	A	53.	C
4.	A	29.	B	54.	A
5.	A	30.	C	55.	A
6.	A	31.	C	56.	A
7.	A	32.	C	57.	C
8.	B	33.	A	58.	B
9.	A	34.	D	59.	C
10.	A	35.	A	60.	C
11.	A	36.	C	61.	C
12.	D	37.	C	62.	C
13.	A	38.	A	63.	A
14.	A	39.	A	64.	B
15.	A	40.	A	65.	C
16.	A	41.	A	66.	D
17.	C	42.	C	67.	C
18.	D	43.	A	68.	A
19.	A	44.	C	69.	C
20.	A	45.	C	70.	D
21.	A	46.	A	71.	D
22.	A	47.	A	72.	C
23.	B	48.	D	73.	B
24.	A	49.	B	74.	C
25.	A	50.	D	75.	D

ELECTRICAL

Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER
76.	C	90.	A	104.	C
77.	C	91.	C	105.	A
78.	B	92.	B	106.	C
79.	D	93.	B	107.	D
80.	C	94.	C	108.	A
81.	B	95.	B	109.	D
82.	D	96.	C	110.	B
83.	B	97.	C	111.	A
84.	C	98.	B	112.	C
85.	C	99.	B	113.	A
86.	B	100.	B	114.	D
87.	C	101.	A	115.	C
88.	C	102.	A		
89.	C	103.	C		

GM LOCOMOTIVE

Q. No.	ANSWER	Q. No.	ANSWER	Q. No.	ANSWER
1.	C	13.	B	25.	B
2.	A	14.	B	26.	C
3.	C	15.	C	27.	C
4.	C	16.	B	28.	C
5.	D	17.	A	29.	B
6.	A	18.	C	30.	B
7.	B	19.	C	31.	A
8.	C	20.	D	32.	B
9.	A	21.	B	33.	B
10.	C	22.	A	34.	A
11.	B	23.	A	35.	A
12.	C	24.	B		

OUR OBJECTIVE

To upgrade maintenance technologies and methodologies and achieve improvement in productivity and performance of all Railway assets and man power which inter-alia would cover reliability, availability, utilisation and efficiency.

If you have any suggestions and any specific comments, please write to us.

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