

QUESTION BANK

FOR

LOCO INSPECTORS

**SUPERVISORS' TRAINING CENTRE
SOUTH EASTERN RAILWAY
KHARAGPUR**

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TRAIN OPERATION

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DIESEL LOCO OPERATION

1. How will you shoot the trouble if fuel oil pressure drops abnormally in a loco on run?
2. How will you shoot the trouble if fuel pump motor fails to work enroute?
3. What action will you take if a driver reports, while taking over the charge of a loco in loco-shed, that his engine is not cranking?
4. If fuel pump contactor drops automatically on run and does not pick up again, then how will you identify the fault and take remedial measure there to?
5. If a diesel engine cranks but does not fire then what will you do?
6. What action will you suggest to your assigned driver if he complains that his engine is not holding?
7. How will you shoot the trouble if battery discharge indication lamp is burning continuously and battery ammeter is showing discharge side?
8. While foot plating in the cab of a diesel loco, you observed that the battery ammeter is showing over-charging. What is your role as a Loco Inspector?
9. What items will you check and how will you rectify the fault if a diesel engine shuts down automatically on run?
10. How will you shoot the trouble if throttle does not respond?
11. How will you shoot the trouble if DMR is not picking up?
12. If on run, load meter suddenly fails to respond then what action will you take?
13. How will you shoot the trouble if power contactors don't pick up on opening the throttle handle?
14. What action will you take if your assigned driver complains that the GF contactor is not picking up in his loco?
15. How will you shoot the trouble if engine RPM is erratic?
16. While foot plating, you experienced explosive power ground alarm. What advice will you give to the working driver for carrying out for rectifying the fault?
17. How will you shoot the trouble if loco exhibits continuous wheel slip alarm on run?
18. How will you shoot the trouble if a loco exhibits intermittent wheel slip alarm on run?

19. The driver of an express train (having sectional booked speed above 100 km/h) complains that his loco is repeatedly exhibiting hot engine alarm in section on run. What advice will you give him to maintain punctuality of the train?
20. How will you shoot the trouble if radiator fan is not working?
21. What will you do if a loco exhibits low / poor hauling power?
22. How will you trouble-shoot if the booster air pressure does not build up to the prescribed level in a loco?
23. If MAR-pressure does not build up, then what checks are to be carried out and what actions are to be taken to get rid of the faults?
24. While examining a loco nominated to work GM-special, you noticed that the loco brakes are not acting when A9 is applied. What action will you take?
25. What action will you take if loco brakes don't get released when A9 & SA9 handles are released?
26. You were informed by the Power Controller to attend the case of a loco coming from section on the plea of 'Loco brakes are causing wheel-skidding'. How will you attend the case effectively?
27. How will you shoot the trouble if vacuum is not creating in a loco?
28. How will you shoot the trouble if brake pipe pressure does not build up?
29. A driver working a vacuum stock goods train reports in section that 'vacuum is not dropping when A9 is being applied'. What advice will you give him to attend the fault?
30. What action will you take if feed pipe pressure is not being built up to the recommended level?
31. A loco arrived your Hd. Qtr. on the plea that it was throwing oil with white smoke through the expressor exhaust. Your officer advised you to attend the case. How will you attend it?
32. What are the aspects to be checked if the brass spindle of the expressor of a loco does not project out?
33. A driver, while clearing a stable load of an air brake CC-rake from the yard, reported that the BPC (Brake Power Certificate) was invalid. How will you test the validity of BPC and certify the same? (Rolling stock)
34. What are the basic differences between WDM2 and WDG3A locomotives?

35. What are the basic differences between WDM3A and WDG3A locomotives?
36. What are the modifications done in WDM2 diesel locomotives?
37. What do you mean by auto-flasher light? How does it function?
38. What are the duties of the engine-crew in connection with auto-flasher light while leaving the shed?
39. What do you mean by centrifuge? Where is it provided in a diesel locomotive? What is its function?
40. What is an air-dryer? Where is it provided in a diesel locomotive? Is there any special advantage of fitting an air-dryer?
41. What is the role of a Loco Pilot in connection with an air-dryer?
42. What is the purpose of providing OPS2 in a diesel locomotive? What are its advantages?
43. What do you mean by 'Power Setter'? How does it work?
44. What are the special advantages of providing a twin-beam headlight? What is the procedure of changing it in case it gets fused on run?
45. What is 'GFOLR'? Where is it provided in a diesel locomotive? What is its basic purpose?
46. What is the procedure of forming a multi-unit WDM2 loco with regard to operational aspects?
47. If the leading loco fails in a multi-unit WDM2 diesel loco formation, then how should the section be cleared by working from the leading loco?
48. What are the standard positions of different switches, circuit breakers, c/o/cs, handles and valves in the leading as well as trailing loco of a WDG3A multi-unit formation?
49. What is the role of C3W-distributor valve in connection with flat-wheel of loco? (Rolling stock)
50. What are the roles of P1 & P2 pressure switches and PCS1 & PCS2 in connection with auto-flasher light?
51. How will you conduct the capability test of compressor of a loco?
52. How will you conduct the vacuum efficiency test in a loco?
53. How will you conduct the blockage test in a loco?
54. How will you conduct the BP leakage test?

- 55. How will you conduct the FP leakage test?
- 56. How will you conduct the loco brake power test (SA9)?
- 57. How will you conduct the hand brake test?
- 58. How will you conduct the dynamic brake test?

SAFE WORKING RULES

1. What is procedure of passing a gate stop signal at 'ON' in Absolute Block System?
2. What are the different procedures of passing an 'IB' stop signal at 'ON' position?
3. What do you mean by a 'conflicting' signal? What action should a Loco Pilot take if he notices a conflicting signal?
4. What do you mean by a signal 'bobbing'? What action should a Loco Pilot take if he notices a 'bobbing' signal?
5. What do you mean by a signal 'flickering'? What action should a Loco Pilot take if he notices a 'flickering' signal?
6. What is the duty of a Loco Pilot when the train is held up at the first stop signal?
7. What is the procedure of receiving a train in an obstructed line?
8. What is the procedure of receiving a train in a non-signalled line?
9. What is the procedure of despatching a train from a non-signalled line?
10. What is the procedure of despatching a train from a line provided with a common starter?
11. What is the procedure of passing a reception stop signal at 'ON' in Absolute Block System?
12. What is the procedure of passing a starter signal at 'ON' in Absolute Block System?
13. What is the procedure of passing an advance-starter signal at 'ON' in Absolute Block System?
14. What are the visibility distances of outer, home, starter (main-line and loop-line) and advance starter signals?
15. What do you mean by 'signal drooping'? What is the duty of a Loco Pilot if a signal is found drooping?
16. What action should a Loco Pilot take if, during night, a 'distant' signal displays no light?
17. In arm-type signalling system, during night, when a reception stop signal is 'off', but light extinguished, what is the duty of a Loco Pilot?

18. What is the procedure of receiving a coaching train on a goods loop?
19. How the trains shall be worked when, in single line token system, the token is lost while picking up on run?
20. What is the form no. of paper line clear ticket? What are the conditions when it is issued to a Loco Pilot?
21. What is the name of the form no. **T/A 602**? What are the circumstances under which it is issued to the Loco Pilot?
22. What is the name of the form no. **T/B 602**? When is it issued to the Loco Pilot?
23. What is the name of the form no. **T/C 602**? When is it issued to the Loco Pilot?
24. What is the name of the form no. **T/D 602**? When is it issued to the Loco Pilot?
25. What is the name of the form no. **T/A 912**? When is it issued to the Loco Pilot?
26. What is the name of the form no. **T/B 912**? When is it issued to the Loco Pilot?
27. What is the name of the form no. **T/C 912**? When is it issued to the Loco Pilot?
28. What is the name of the form no. **T/D 912**? When is it issued to the Loco Pilot?
29. What is the name of the form no. **T/806**? When is it issued to the Loco Pilot?
30. What is the name of the form no. **T/609**? When is it issued to the Loco Pilot?
31. What action a Loco Pilot should take if he experiences bad riding, attributable to permanent way works, on run?
32. What action should a Loco Pilot take if one detonator explodes in the block section on run?
33. What action should a Loco Pilot take if two detonators explode in the block section on run?
34. What action should a Loco Pilot take if three detonators explode in the block section on run?
35. What action should a Loco Pilot take if he observes a flare signal lit up in the section on run?
36. What action should a Loco Pilot take if he observes the flasher light at 'ON' condition on the adjacent line?
37. What action the Loco Pilot of an air-brake train should take if his loco shuts down automatically on a heavy ascending grade on run?
38. How are the trains worked in TSL working on double line section in Absolute Block System?

39. How are the trains worked in case of total interruption of communication in single line section in Absolute Block System?
40. How are the trains worked in case of total interruption of communication in double line section in Absolute Block System?
41. What do you mean by train parting? What are the causes of train parting?
42. What action should a Loco Pilot take in case of train parting?
43. What action the Loco Pilot of a train should take if his loco fails to haul the load in section?
44. What is the duty of a Loco Pilot if he enters in to a block section without an authority to proceed?
45. What action the Loco Pilot of a train should take if his loco fails in block section?
46. How are the trains worked in TSL working on double line section in Automatic Block System?
47. How are the trains worked in case of total interruption of communication in single line section in Automatic Block System?
48. How are the trains worked in case of total interruption of communication in double line section in Automatic Block System when signals are operative?
49. How are the trains worked in case of total interruption of communication in double line section when signals are also inoperative in automatic signalling territory?
50. How are the trains worked during prolonged failure of signals when communication is available in automatic block system single line section?
51. How are the trains worked during prolonged failure of signals when communication is available in automatic block system double line section?
52. What is the procedure of passing an auto stop signal at 'ON'?
53. What is the procedure of passing a gate stop signal at 'ON' in auto. signalling territory?
54. What is the procedure of passing a reception stop signal at 'ON' in auto. double line section?
55. What is the procedure of passing a reception stop signal at 'ON' in auto. single line section?

56. What is the procedure of passing a loop line starter signal at 'ON' in auto. double line section?
57. What is the procedure of passing a main-line starter signal at 'ON' in auto. double line section?
58. What do you mean by shunting? How many kinds of shunting are there? What are the different methods of shunting?
59. Explain the following: **a)** Flag shunting **b)** Loose shunting **c)** Hump shunting **d)** Fly shunting and **e)** Hand shunting.
60. What are the differences between **a)** Warner and Distant signal, **b)** Permissive and stop signal, **c)** SLB and BSLB, **d)** Catch siding and slip siding, **e)** Block overlap and signal overlap, **f)** Block section and Station section, **g)** 'IB' post and 'C'-class station, **h)** Block forward and Block back, **i)** MPS and Booked speed, **j)** Facing point and trailing point, **k)** Point Indicator and Trap Indicator, **l)** Traffic Block and Power Block, **m)** NRT and MRT, **n)** Absolute and Automatic block system, **o)** Special Instruction and Approved Special Instruction, **p)** Main line and Running line and **q)** Running line and Non-running line.
61. What are the rules of shunting in a 'B'-class double-line station?
62. What are the rules of shunting in a 'B'-class single-line station in two-aspect signalling system?
63. What are the rules of shunting in a 'B'-class single-line station in **MLQ / MOMA** signalling system?
64. What are the rules of shunting in an automatic block system in double line section?
65. What are the rules of shunting in an automatic block system in single line section?
66. What are the articles of a wagon prohibited for loose and fly shunting?
67. What are the various speeds of shunting at different circumstances?
68. What is the visibility distance of a tail lamp?
69. What are the conditions for taking 'off' the 'Home' signal?
70. What are the conditions for taking 'off' the 'Outer' signal?
71. What are the conditions for taking 'off' a 'Last stop signal' signal?
72. What are the conditions for taking 'off' a 'Calling-on signal' signal?

73. What are the conditions for taking 'off' the 'IB' signal?
74. What are the sequences of lowering the through-signals at a station, for run-through trains, provided with advance starter in TALQ signalling?
75. What are the sequences of lowering the through-signals at a station, for run-through trains, provided with advance starter in MLQ signalling?
76. What are the sequences of lowering the through-signals at a station, for run-through of trains, provided with advance starter in MOMA signalling?
77. What is the sequence of lowering the signals at a station for stopping a train?
78. What is the procedure of taking 'off' departure stop signals after the train has stopped at a station?
79. What are the conditions of lowering a warning signal?
80. What are the essentials of absolute block system?
81. What are the essentials of automatic block system?
82. What are the essentials of 'One Train Only' system?
83. What are the essentials of 'Train-staff and Ticket' system?
84. What are the different circumstances under which form no. T/B 409 is issued to the Loco pilot?
85. How are the trains worked in non-interlocking working, due to repairing, renewal or installation of signals and point gears?
86. What are the circumstances in which one, two, three and four detonators are used?
87. When is a flare signal used?
88. Who are the bonafide users of flare signals? How should the flare signals be stored? What is the life span of a flare signal?
89. How should the flare signals be tested? Describe the physical features of a flare signal. Describe the procedure of destroying the unserviceable flare signals.
90. Who are the bonafide users of fog signals? How should the fog signals be stored? What is the life span of a fog signal?
91. Describe the physical features of a detonator. Describe the procedure of destroying the time-expired detonators.
92. How should the detonators be tested?

93. What are the safety equipments, tools and tackles that a Loco Pilot should possess while going to work a train in open line?
94. What is the purpose of exchanging signals among the Loco Pilot, Guard and the station staff? What are the situations in which signals should be exchanged among the Loco Pilot, Guard and the station staff? What action should be taken for non-exchange of signals by any of the above staff as per SR 4.42.06 and 4.42.07?

ROLLING STOCK

1. What are the salient features of rolling stock used for freight services?
2. What are the different coaches used for coaching services. Give their salient features.
3. What are the vacuum specifications prescribed for the gauges in the engine and brake-van of the following trains: **a)** Mail and express train **b)** Passenger train and **c)** Goods train.
4. What are the air-pressure specifications prescribed for the gauges in the engine and brake-van of the following trains: **a)** Mail and express train **b)** Passenger train and **c)** Goods train.
5. What are the brake-power percentages prescribed for coaching and goods (vacuum stock) trains from originating station and enroute?
6. What are the brake-power percentages prescribed for coaching and goods (air stock) trains from originating station and enroute?
7. How will you calculate the brake-power percentage of an air-stock goods train?
8. In which categories of wagons, load-empty devices have been provided and why? How is it demarcated?
9. What is /are the factor(s) to be considered to keep a load-empty handle in 'load' or 'empty' position? What difficulty will be there if the said handle is kept in 'empty' position in the loaded wagons of a train?
10. What do you mean by an active cylinder? When and how an automatic vacuum cylinder is blanked 'off'?
11. What are piston-strokes in loaded and empty conditions of the following wagons:
a) BOI b) BOY c) BOXN and d) BCN
12. Can the vacuum- and air-stock trains be worked without brake power? If so, under whose permission and at what speed?
13. What do you mean by continuity test in a train? When and how is it conducted?
14. What do you mean by leak test of a train?
15. What are the differences between air brake and vacuum brake system?
16. What are the advantages of twin pipe over single pipe system?
17. How will you detach an air-brake sick wagon enroute?

18. How will you work an air-brake coaching train when the iron brake pipe is burst in a coach?
19. What action will you take when a particular wagon is brake binding while working a train?
20. What action will you take when the entire train is brake-binding in section?
21. What are the advantages of bogie-mounted brake system over conventional brake system?
22. What are the advantages of composite brake blocks over CI brake blocks?
23. What do you mean by JPO in connection with train examination? List out the situations in which JPO is to be made by the train crew?
24. Explain the factors that govern the validity of BPC of an air-brake CC rake?
25. Describe the procedure of clearing a stable load from roadside station where TXR depot does not exist.
26. What is the utility of a 'Brake Power Certificate'? How will it affect the working of a train if worked without BPC or with an invalid BPC?
27. What are the advantages of CC rakes over end-to-end-examination rakes?
28. Why should not the CC-rakes be allowed to ply outside the nominated circuit?
29. What are prescribed colour codes for BPCs? Describe the rules of end-to-end examination.
30. What do you mean by special CC rakes (air-bake)?
31. What do you mean by round trip CC rakes?
32. What is a wheel-flat?
33. How will you detect and measure a wheel-flat?
34. What are the permissible limits of flatness?
35. Why are the wheel-flats not desirable?
36. What are the reasons for such flat perimeter patches to develop?
37. What precautions should be taken by the operational crew so as to prevent the flat faces on wheels?
38. What corrective actions are to be taken when a flat face is detected in a running train?
39. What do you mean by hot-axle? What are the symptoms of hot-axle?

40. What is hotbox / seizure of roller bearings? What are the symptoms of hot-box / seizure of roller bearings?
41. What will you advise a Loco Pilot in case of detection of hot-axle / seizure of roller bearing in section?

ESTABLISHMENT RULES **AND** **LABOUR LAWS**

Hours of Employment Regulations (H.O.E.R)

Railway Services Conduct Rules, 1966

D & A Rules, 1968

Leave Rules

Pass Rules

HOURS OF EMPLOYMENT REGULATIONS (H.O.E.R)

1. What do you mean by **H.O.E.R.**? When was it enacted? To whom does it apply?
2. What are the statutory norms of HOER? How does it govern the working of railways employees?
3. How are the different categories of railway employees classified under HOER? Describe the features of each category.
4. Under which category do the loco-crews come under HOER? How does HOER govern their employment?
5. What do you mean by '**long-hours**' of duty of engine-crews? What measures will you adopt so as to minimize such cases of long-hours in your division?
6. What do you mean by 'Intensive', 'Continuous', 'Excluded' and 'Essentially Intermittent' workers? Explain with suitable examples.

RAILWAY SERVICES CONDUCT RULES, 1966

1. What do you mean by Railway Services Conduct Rules? For whom does it apply?
2. Describe the salient features of Railway Services Conduct Rules.
3. If a railway servant commits repeated misconduct, what action will you take to bring him back to right track?
4. What are the codes of conduct that a railway servant should maintain while in railway service? Describe the rules framed there under.
5. Describe the provisions of Railway Services Conduct Rules in connection with the following issues: **a)** Promptness and courtesy **b)** Observance of government's policies.
6. Describe the provisions of 'Railway Services Conduct Rules' in connection with 'Prohibition of sexual harassment of working women'.
7. What are the provisions made under Railway Services Conduct Rules in association with - **a)** Gifts **b)** Dowry **c)** Participation in editing any newspaper?
8. What are the provisions made under Railway Services Conduct Rules in association with 'sub-letting of govt. accommodation by the railway employee'?
9. What are the prescribed time limits for different situations, as per the provisions of Railway Services Conduct Rules, beyond which permission may be assumed to have been granted by the competent authority in the absence of any communication from him, where prior permission from the govt. is required?

D & A RULES, 1968

1. What do you understand by the term Disciplinary authority as distinct from appointing authority?
2. What do you mean by suspension?
3. When and under what circumstances a railway servant may be placed under suspension?
4. Who is the competent authority to place a non-gazetted railway servant working in a railway / production unit under suspension?
5. Is it necessary to communicate the reasons of suspension to an employee placed under suspension?
6. What payment will be admissible to a railway servant under suspension during the period of his suspension?
7. What are the circumstances in which D & A action shall be taken against a railway servant?
8. What are the different penalties under D & A rules and what punishment can be imposed under each penalty?
9. Who is the authority to institute disciplinary proceedings including issue of a charge sheet in case of a non-gazetted railway servant?
10. What are the procedures for imposing a minor penalty on a railway servant?
11. What are the procedures for imposing a major penalty charge sheet on a railway servant?
12. How will you conduct an enquiry?
13. When does it become obligatory to hold a departmental enquiry?
14. What do you mean by defence counsellor? Who can act as a defence counsellor under D & A rules?
15. What do you mean by natural justice, speaking order, censure and warning, subsistence grant, appellate authority, enquiry officer, fact-finding enquiry and ex-parte enquiry?
16. What is the distinction between 'dismissal' and 'removal' from service?

17. How will you serve a punishment order to a delinquent railway servant under D & A rules?
18. When and how an appeal against a punishment, under D & A rules, may be submitted?
19. What do you mean by revision petition / application and how is it disposed of.

LEAVE RULES

1. What kinds of leave are admissible to a regular railway employee in accordance with the norms of Liberalised Leave Rules, 1949?
2. What do you mean by 'LAP'? Explain about LAP.
3. What do you mean by 'LHAP'? Explain about LHAP.
4. What do you mean by 'Commutated Leave? Explain about commuted leave.
5. What do you mean by 'Leave not due'? Explain about leave not due.
6. What do you mean by 'Extra-ordinary Leave'? Explain about it.
7. What do you mean by 'Maternity and Paternity Leave'? Explain about these in details.
8. What do you mean by 'Study Leave'? Explain about study leave.
9. What do you mean by 'Hospital Leave'? Explain in details.
10. What do you mean by 'Special Disability Leave'? Explain in details.
11. What do you mean by 'Leave preparatory to Retirement'? Explain in details.

PASS RULES

1. What are the different kinds passes that a regular railway employee may be issued?
2. What are the different kinds of privilege passes? To whom are they admissible?
3. What are the different kinds of duty passes?
4. How many privilege passes and PTOs can a regular railway employee avail in a calendar year?
5. How many persons can be included in a pass or PTO?
6. What do you mean by family and dependent relatives in connection with pass rules?
7. What do you mean by 'School Pass'?
8. What are the periods of availability of passes?
9. What do you mean by 'Post-retirement complementary passes'?

PERMANENT WAY & WORKS

- 1) What do you mean by a 'turnout'? What do you understand by 'facing direction' and 'trailing direction' of a turnout? Indicate the various constituents of a turnout by means of a neat sketch.
- 2) What is a rail switch? Indicate the various constituents of a rail switch by means of a neat and clean diagram.
- 3) What do you mean by points and crossings? Why are they provided on railway track?
- 4) What are the evil effects of a rail-joint?
- 5) a) Which part of the railway track forms the weakest link?
b) Describe the procedure of flash butt welding.
- 6) What are the different methods of welding a rail joint?
- 7) What do you mean by **a)** Point Burst and **b)** Two-routes?
- 8) What are the special points that require attention for welding second hand rails? Draw a neat flow diagram of the operations involved in welding of second hand rails by flash butt welding technique.
- 9) Which is the only form of site welding of rail joints adopted universally? Describe the principle and types of such welding.
- 10) What are the major defects in thermite welding? What are the steps to prevent them?
- 11) What are the recent developments in welding techniques in the permanent way network of Indian Railways?
- 12) Define the following terms with reference to permanent way network of Indian Railways:
 - i) LWR
 - ii) SWR
 - iii) CWR
 - iv) Breathing length
 - v) SEJ

- 13)What do you mean by standard moving dimensions (SMD)? How are the over-dimensional consignments classified and their movements governed?
- 14)What do you mean by tractive effort and hauling power of a locomotive?
- 15) What are the different types of forces that induce heavy stresses on the railway track due to movement of rail vehicles?
- 16)What are the various forces that offer resistance to the movement of a train? Indicate the factor(s) that such resistive forces depend upon.
- 17)What do you mean by coning of wheels? How does it act as a balancing factor during the movement of a rail vehicle?
- 18)What are the defects attributable to permanent way and works that give rise to parasitic motion?
- 19)What do you mean by 'canting of rails'?
- 20)Explain the following terms :
- Degree of curve
 - Length of curve
 - Cant deficiency and cant excess
 - Super elevation
 - Cess

CONTROL ORGANIZATION

- 1) What are the different registers maintained in a Power Controller's office? State the utilities of each.
- 2) Describe the duties of DPC.
- 3) What is the role of DPC with respect to booking / relief of crews, offering locos to traffic and technical advice to engine-crews for trouble shooting of locos in section.
- 4) How will you monitor the movement of locos if asked to work in control office? How will you ensure optimum utilization of locos observing the condition that the loco arrives the home shed in time for attending the due schedule?
- 5) How will you maintain the crew-link and engine-link?
- 6) What do you mean by power plan?

INSPECTORS' DUTIES

LOAD TRIAL
LOAD FACTOR
ENGINE -, CREW - AND RAKE - LINK
SPECIFIC FUEL CONSUMPTION
FIXING OF SECTION RATION AND CALCULATION OF TRIP RATION
FOOT-PLATE INSPECTIONS AND INSPECTION OF L/C GATES, R/ROOMS & STATIONS.
CATEGORIZATION OF LOCO PILOTS
I. S .R .T
TIME TABLE
CADRE REVIEW
EMERGENCY BRAKING DISTANCE

LOAD TRIAL

1. What do you mean by load trial? What are the factors to be kept in mind while conducting load trial?

LOAD FACTOR

1. Define 'Load Factor'. How many methods are there to calculate practically the load factor?
2. Explain the fuel consumption method for calculating the load factor.
3. Explain the horsepower method for calculating load factor.

ENGINE -, CREW - AND RAKE – LINK

1. Write short-notes on :
 - a) Engine link
 - b) Crew link
 - c) Rake link

SPECIFIC FUEL CONSUMPTION

1. Explain the term 'GTKM' and 'Specific Fuel Consumption'.
2. Explain, with suitable example, the procedure of calculating the 'Specific Fuel Consumption' of a goods train.

FIXING OF SECTION RATION AND

CALCULATION OF TRIP RATION

1. What do you mean by section ration? Describe the procedure of calculating the bare section ration.
2. What are the fuel-oil allowances provided for calculating trip ration of a train?
3. What is the utility of calculating trip ration?
4. Explain, with suitable examples of goods and coaching trains, the procedure of calculating trip ration.
5. What are the tips that you will suggest to your assigned Loco Pilots for ensuring fuel economy?

FOOT-PLATE INSPECTIONS AND INSPECTION OF

L/C GATES, R/ROOMS & STATIONS

1. Why is inspection essential? What should be the quality of inspection?
2. What are the factors that you would like to consider so as to make your inspections more effective?
3. What are the minimum quotas prescribed per month for the Loco inspectors?
4. What are the aspects to be inspected, during inspection of a station, by a Loco Inspector?
5. What are the aspects to be inspected, during inspection of L/C-gates, by a Loco Inspector?
6. What are the aspects to be inspected, during inspection of a running room, by a Loco Inspector?
7. What are the aspects to be inspected, during footplate inspection, by a Loco Inspector?
8. What are the aspects to be inspected, during inspection of a station cabin, by a Loco Inspector?
9. What do you mean by ambush check and surprise night inspection?
10. What are the aspects to be inspected, during inspection of a fuel installation, by a Loco Inspector?
11. What are the aspects to be inspected, during inspection of a crew-lobby, by a Loco Inspector?
12. What are the aspects to be inspected, during inspection of a control office, by a Loco Inspector?
13. How will you inspect 'ART' and 'ARME'? Describe.

CATEGORIZATION OF LOCO PILOTS

1. On what basis and into how many categories are the Loco Pilots categorized?

I.S.R.T

1. What are the factors to be kept in mind of engine-crew for maintaining punctuality of a train?
2. What is 'Intersectional running Time'? Describe the procedure of evaluating ISRT.

TIMETABLE

1. What is the necessity of a timetable? Name and explain, in brief, the different types of timetables published by Indian Railways administration.
2. What are the contents of a working timetable?
3. What do you mean by ISRT, gross ISRT, bare ISRT, booked speed, maximum permissible speed, normal running time, minimum running time, recovery time, loco made up, loco loss and PDT or EDT (Public Departure Time or Earlier Departure Time)?
4. Explain, with a suitable example, the procedure of calculating the bare ISRT of a coaching train.
5. Explain, with a suitable example, the procedure of calculating the time loss of a coaching train due to cautious driving.

CADRE REVIEW

1. What is 'crew review'? Why is it carried out? Describe the procedure for crew review. Explain with suitable examples for review of goods and coaching cadre.

EMERGENCY BRAKING DISTANCE

1. What do you mean by 'emergency braking distance (EBD)'? For what purpose is EBD-trial conducted? Describe the procedure of conducting a trial for EBD.

CREW MANAGEMENT SYSTEM

- 1) What are the various designations of running staff? What are their scales of pay?
- 2) Make out a standardized list of crew-booking registers maintained in crew lobbies. Indicate the utility of each register.
- 3) What are the different mandatory and need-based special training courses prescribed for the running staff?
- 4) What are the mandatory tests for the running staff in connection with their running duties and health? When and how are they conducted?
- 5) What are the channels of promotion for running staff from the level of Asst. Loco Pilot?
- 6) How are the duty and rest hours allotted for the running staff at HQ as well as out station?
- 7) What do you mean by 'train ordering'? How and from whom is it received? How much time margin should be given to a crew for turning up to duty?
- 8) What are factors on which attention is to be paid by the crew-booking authority before booking a crew to work a train in open line?
- 9) What do you mean by 'act of malingering' on the part of a crewmember? What are they?
- 10) Describe the criteria that should be considered before booking a crew to work a train of a higher grade?
- 11) What are the different allowances that a running staff is entitled to?
- 12) When does a running staff become entitled for 'Breach of Rest' allowance?
- 13) Explain 'allowances in lieu of running room facilities'.
- 14) Explain 'out station detention allowances'.
- 15) Explain 'out station relieving allowances'.
- 16) Explain 'officiating allowance' for a running staff.
- 17) What is 'minimum guaranteed kilometerage' for running staff? Explain.
- 18) Explain about the incentive schemes for running staff for through goods trains.
- 19) Explain how is the kilometerage computed for the running staff in case of slow moving as well as passenger trains.

- 20)What do you mean by ghat section? In to how many classes and on what basis are the ghat sections classified. Explain how is the kilometerage computed for the running staff for working in ghat sections.
- 21)On what basis is the kilometerage for coal pilot calculated?

DISASTER MANAGEMENT

1. Describe the role of human elements in achieving safe and punctual running of trains.
2. What do you mean by an accident in the scenario of rail-transportation? Does it differ from a rail-disaster? How?
3. Describe the factors that determine whether a train-accident is 'serious' or not.
4. Describe different types of accidents in railways. Classify them according to their nature.
5. Describe various causes of accidents in railways?
6. Describe the roles of a Loco Inspector (at the H.Qtr. as well as at the disaster site) in case of a serious rail-disaster.
7. Describe the tips for prevention of railway accidents.
8. How will you counsel your assigned Loco Pilots in connection with their roles in case of occurrence of a serious rail-disaster in section?
9. Describe the standard specifications laid down by the railway administration for sounding of hooter for ordering of 'ART' and 'ARME'. Indicate the stipulated time allowed for despatch of 'ART' and 'ARME'.
10. What are the 'prohibited actions' that you will counsel your assigned Loco Pilots to carry out at the accident-site in case of a serious train-accident involving casualty of around 100 passengers?
11. What do you mean by 'High Level Committee Recommendations' in connection with disaster management in Indian Railways? Describe the important recommendations there of.
12. What are the different classes of 'ART's? Describe the important items of ART.
13. What do you mean by on-board staff? Who are covered under this category? Describe the duties of on-board staff in case of a rail disaster.
14. Describe the duties of different railway supervisors at control room and at accident-site in case of a serious rail accident involving passengers' casualties.

- 15.**What is the necessity of 'Disaster Management Planning'? Describe the different aspects framed under pre-disaster and post-disaster planning by the railway administration.
- 16.**What do you mean by 'Golden Hour Concept' in connection with rail-disaster? Describe the basic steps for effective rescue operations at accident-site.
- 17.**Who were the members of 'high-level committee' of disaster management programme in Indian Railways? Describe twenty important recommendations of the committee in connection with disaster management.

COUNSELLING

1. What do you mean by counselling? Describe the basic objectives of counselling.
2. What are the different methods of counselling? How will you assess that your counselling process has brought about a desired level of change in performance of your counselee?
3. What are the intermediate and long-term goals of counselling? As a professional counsellor, how will you attempt to eliminate the performance problem(s) of your assigned crews in respect of their level of knowledge, skills and attitude?
4. Describe the basic skills pertaining to a counselling process.
5. What do you mean by a 'case-study'? What should a case-study folder, in relation to counselling, contain?
6. Describe the traits of a good Loco Inspector in relation to counselling.
7. How will you conduct a counselling session systematically? Describe the steps involved therein.

TRAIN DRIVING TECHNIQUES

1. What is a simulator? Justify the implementation of 'Train Driving Simulator' in Indian Railways for training the loco running staff.
2. Describe the precautions that should be taken while starting a train from an ascending grade.
3. How will you start an air-brake goods train in a level section?
4. Indicate the difference(s) between starting an air-brake goods train from a light ascending grade and that starting from a heavy ascending grade.
5. What do you mean by a good start and good controlling of a goods train? How will you stop an air brake goods train in a level section?
6. What is the correct procedure of applying dynamic brake in an air brake goods train?
7. What precautions will you take while working an air brake goods train in sag or dip territory?
8. What precautions will you take to avoid stalling of an air brake goods train in a heavy ascending grade?
9. What do you mean by stall burn? How will you prevent it?
10. What do you understand by 'bunching'? How will you bunch an air brake goods train? What are the probable consequences if proper bunching is not done?
11. What are the operational faults by which tensile forces may increase in a running train?
12. What are the operational faults by which compressive forces may increase in a running train?
13. What is 'running release'? What are its probable consequences?
14. What is 'cyclic application'? What are its probable consequences?
15. Is 'cyclic application' undesirable for an air-braked high speed coaching train? State the reasons.
16. What do you mean by 'short brake application'? What are its consequences?
17. What do you understand by 'applied brakes too fast'? What are its consequences?
18. Do you feel that dynamic braking is essential for a coaching train?

REVISED POLICY ON DRUNKENNESS

- 1) What are the basic aims of the revised alcohol policy of Indian Railways? Describe the general aspects of revised alcohol policy.
- 2) Describe the reformatory aspects of revised alcohol policy of Indian Railways.
- 3) Describe the preventive aspects of revised alcohol policy of Indian Railways.
- 4) Describe the deterrent aspects of revised alcohol policy of Indian Railways.
- 5) What are the punishment norms for a drunkard railway employee as per the revised alcohol policy of Indian Railways?
- 6) What are the provisions in GR and SR in connection with the following :
 - i) Taking alcoholic drink, sedative, narcotic, stimulant drug or preparation.
 - ii) Railway servant found intoxicated
- 7) Describe how carefully should the cases of drunkenness be examined as per article **564** of Indian Railway Medical Manual.

RAJBHASHA (OFFICIAL LANGUAGE)

- 1) When and which language has been accepted as the official language by the constituent assembly? How many articles are there in our constitution about the official language?
- 2) Write down the provision(s) of official language in the first article of constitution.
- 3) Write down, in brief, the special directives of Rajbhasha in the last article of constitution.
- 4) What are the different courses of administrative Hindi, introduced by the deptt. of official languages, under Hindi Teaching Scheme? For whom are those meant?
- 5) For what purpose have the 'Rajbhasha Incentive Schemes' been introduced? What are those incentives?
- 6) When was the 'Official Language Act' passed by the parliament? How many sections are there in this act? What does the section 3.3 indicate?
- 7) When was the 'Official Language Rules' issued by the deptt. of official language? How many rules are there? According to this rule, what are the different regions of official language for implementation of Hindi?
- 8) Explain the following terms in relation to Official Language –
 - Notified office
 - Proficiency in Hindi
 - Working knowledge of Hindi

MISCELLANEOUS

- 1) Define 'Personnel Management'. What is its role and importance in production?
- 2) How recruitment to various posts / services is made on Railways?
- 3) What is the purpose of 'Industrial Disputes Act, 1947'? What are its salient features?
- 4) "Every railway servant shall maintain absolute integrity and devotion to duty and will do nothing which is unbecoming of a railway servant is all compassing and guiding rule of conduct". Explain how?
- 5) Explain, by giving example(s), the nature / circumstances of injury / death for which compensation would be admissible under 'Workmen's Compensation Act, 1932'. For what reasons the employer would not be liable to pay compensation?
- 6) Describe the personnel management organization on Indian Railways and list out its functions.
- 7) Railways provide a large number of social security measures to its employees. Please enumerate, explaining briefly any two of those.
- 8) Write short-notes :
 - Staff Benefit Fund
 - Permanent Negotiating Machinery
 - Training of Railway employees
 - Reservation and concessions for SC, ST and OBC
 - Railway zones
 - Censure
 - The Factories Act, 1948
 - Medical facilities on railway
 - Compensatory City Allowance
 - Study leave
 - Concession / reservation available to SC/ST communities on promotion
- 9) Describe the important roles of Indian Railways.
- 10) Draw an organization chart of a zonal railway. Indicate, in brief, the duties of different PHODs of a zonal railway.

- 11)**What is Commission of Railway Safety? What are the functions of this commission?
- 12)**Describe the strengths and weaknesses of Indian Railways.
- 13)**What is uni-gauge policy of Indian Railways? What are benefits of adopting this policy?
- 14)**How are the broad gauge routes of Indian Railways classified? Enlist those groups based on speed criteria.
- 15)**Write short-notes on :
a) RITES
b) IRCON
c) IRFC
d) CONCOR
e) KRCL
f) CRIS
g) IRWO
h) RDSO
i) Railway Board
- 16)**Describe the procedure for filling up the selection posts within Group – ‘C’ category?
What is the basic principle of selection?
- 17)**How is a selection board constituted for filling up the selection posts within Group – ‘C’ category? Describe the proceedings involved in a selection process?
- 18)a)** What is currency of a panel of selection for promotion to posts within group – ‘C’ category?
b) How are the vacancies assessed? Describe the eligibility criteria of staff for promotion to posts within group – ‘C’ category?
- 19)**Discuss the various types of resistances that a train comes across while in motion.
- 20)**What are the main components of a turnout? Sketch a turnout and show the components.
- 21)**Sketch a diamond crossing. Where is it used?
- 22)**Write short-notes on :
- RVNL
- IRCTC

- Rail tel
- Dieselisation and diesel traction
- Rolling stock

23)How many zonal railways exist in India? Give the names of various zonal railways and their head quarters.

24)What do you understand by 'Uni-gauge project'? List out the advantages of uniform gauge on I.R.

25)What is the staff strength of Indian Railways? List out the training institutions where the officers of I.R. are trained.

26)What do you mean by 'Imprest Store'.

27)What are the advantages of colour light signals over semaphore signals?

28)Explain the terms :

- Track circuits
- Axle counters
- Electronic Interlocking System
- Train Actuated Warning Device (TAWD)
- Train Protection and Warning System (TPWS)
- Anti-collision device (ACD)
- Train Management System (TMS)
- VHF / UHF Links
- Optical Fibre Systems
- Mobile Train radio Communication
- Primary & secondary maintenance of rakes

29) Do you feel that railway is a superior mode of surface transport as compared to other modes? Why? Enlist the essential commodities that constitute the bulk of freight traffic on Indian Railways?

30)What are the different kinds of goods trains? Explain.

31)What do you mean by line or section capacity? How is it calculated?

32)What are the measures for increasing the line capacity?

33)Explain what is 'throughput'. How can the throughput of a given section be increased?

- 34)**What is a goods marshalling yard? What are the functions of a marshalling yard?
- 35)**“Divisional Control Organization is the ‘Nerve Centre’ of railway operation on a division”. Justify the statement by describing the functions of each control wing of a division.
- 36)**Write short-notes on :
- Ordering goods trains
 - Interchange of traffic
 - Power and crew control
- 37)**What do you mean by ‘Productivity Resources’? Write down the units for measuring productivity of the following resources-
- Wagon utilization
 - Engine (Loco) utilization
 - Track utilization
- 38)** Explain the term ‘Operating Ratio’. How can the gross earnings be increased?
- 39)**Describe the measures for improving the productivity of the following resources :
- Wagon utilization
 - Locomotive utilization
 - Fuel utilization
 - Track utilization
 - Staff utilization
- 40)**List out the functions of safety organization of railway?
- 41)**List out the important manuals and rulebooks pertaining to train running?
- 42)**What are the different methods of imparting training to train-passing and running staff so as to make them thoroughly familiar with the rules in force?
- 43)**What role does a flasher light discharge on a locomotive? Write down the standard visibility distance of amber coloured flasher light, when the head light is in ‘on’, ‘dim’ and ‘off’ position?
- 44)**Identify and explain various unsafe practices in the system that have come to your notice which are likely to cause hindrance / inconvenience / accidents in train operation.

45) Write short-note on :

- Periodic Medical Examination of running staff
- Breathalyzer tests
- Psychological testing of staff
- Audio-visual indicators on locomotives
- Flashing tail lamps

46) What are the various types of accident enquiries?

47) What do you mean by 'rolling stock'? What are the different classes of rolling stock?

Describe the important objectives of rolling stock management in a railway.

48) Explain briefly the various types of locomotive classifications.

49) What are the requisites of a good locomotive?

50) What essential ingredients should be incorporated in the procedure for preventive maintenance of locomotives? Write the revised maintenance schedule for diesel locomotives.

51) What are the popular indices on which performance of locomotives is monitored?

52) Explain the term "Operation of Locomotives" under the following headings ;

- d) Locomotive driving
- e) Monitoring of Loco Pilots
- f) Crew management
- g) Power control organization

53) On what factors does the determination of trailing load of a loco depend?

54) What are the different types of self-driven traction stock?
