



(Govt. of India)
(Ministry of Railways)

QUESTION BANK ON FREIGHT STOCK



(For official use only)

IRCAMTECH/2005/M/W/QB/1.0

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Centre
for
Advanced
Maintenance
TECHnology



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FOREWORD

Standardisation of Hand Tools is an important step towards ensuring implementation of effective and uniform maintenance procedures. CAMTECH has taken an important lead in this direction by preparing this handbook giving compiled list of handtools required for open line wagon maintenance.

Detailed description of each hand tool with important parameters will prove to be useful to the maintenance depots at the time of indenting the material thereby ensuring availability of proper tools to the maintenance staff.

CAMTECH, Gwalior
December 2005

Executive Director

PREFACE

CAMTECH has already circulated a report on “Standardisation of Infrastructural facilities for Freight Stock Maintenance” and CAMTECH has prepared this handbook to supplement the same.

- Standard Quality Hand Tools are the backbone of the maintenance and repair. Sub standard/ poor quality tools may cause injury to staff and life of the tool will be less, as such while standardising tools proper material specification of tools as per job requirement should be considered. Availability of proper tools with artisan staff is necessary to enhance the productivity and quality of work.
- To standardise Hand Tools needed for maintenance of freight stock at yard and wagon depot (sick line and ROH) a consolidated list of tools has been prepared. This will ensure quality maintenance of freight stock, which in turn shall:
 - Minimise failure of rakes/wagons
 - Ensure effective and uniform maintenance procedure over various depots/sicklines/intensive examination points scattered all over Indian Railways.
 - Fatigue of artisan staff shall be minimised.
 - Avoid shortcut during maintenance
- Opinion and suggestions were gathered from various depots and seminar conducted in CAMTECH on 22-12-05 to 23-12-05 and incorporated in this hand book.

Depots visited are:

- Katni depot - West Central Railway
- MGS depot - East Central Railway

- Baad depot - North Central Railway
 - Bajwa depot - Western Railway
 - Bhilai depot - South East Central Rly
- Due to time constraints and other limitations CAMTECH could locate only limited manufacturers/suppliers. As such, the list of manufacturers/suppliers provided in the handbook is in no way exhaustive and the Railways/ Indenters/ Users are free to explore for the availability of more manufacturers/suppliers in the open market.
- The budgetary estimated cost for the tools is subjected to variation on account of market factors and/or number of units purchased.
- The list of non-sparking tools required for maintenance of tank wagons handling petroleum products are contained in appendix-A. The material used in the manufacture of non-sparking tools has mechanical properties comparable to those of the beryllium copper. Non-sparking tools have an inherent quality to eliminate sparking caused by conventional steel tools causing explosion of gases and inflammatory material, which initiate combustion.

This handbook does not supersede any instructions laid down in the “ Wagon Maintenance Manual”, Railway Board & RDSO publications and instructions given in it are for the purpose of guidance only.

CAMTECH, Gwalior
Date : 28.12.2005

(Kundan Kumar)
Director (Mech.)

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BOOK DETAILS

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CHAPTER 1

GENERAL

- 1.01 The standard wheel gauge of Goods wagon is-
- (a) 1602 mm (b) 1601 mm (c) 1600 mm (d) 1599 mm
- 1.02 The minimum wheel gauge of Goods wagon is-
- (a) 1599 mm (b) 1601 mm (c) 1600 mm (d) 1602 mm
- 1.03 The maximum wheel gauge of Goods wagon is-
- (a) 1601.5 mm (b) 1600 mm (c) 1598.5 mm (d) 1602 mm
- 1.04 Permissible variation in new wheel tread diameter for four-wheeled trolley on the same axle on BG bogie wagon is -
- (a) 0.45 mm (b) 0.5 mm (c) 0.35 mm (d) 0.3 mm
- 1.05 Permissible variation in wheel tread diameter for four-wheeled trolley on the same trolley on BG bogie wagon while changing the wheel is -
- (a) 10 mm (b) 13 mm (c) 12 mm (d) 15 mm
- 1.06 Permissible variation in wheel tread diameter for four-wheeled trolley on the same wagon on BG bogie wagon while changing the wheel is -
- (a) 13 mm (b) 25 mm (c) 30 mm (d) 28 mm
- 1.07 Permissible variation in new wheel tread diameter for six-wheeled trolley on the same axle on BG bogie wagon is -
- (a) 0.45 mm (b) 0.50 mm (c) 0.35 mm (d) 0.48 mm

- 1.08 Permissible variation in wheel tread diameter for six-wheeled trolley on the same trolley on BG bogie wagon while changing the wheel is -
(a) 5.0 mm (b) 6.0 mm (c) 10.0 mm (d) 8.0 mm
- 1.09 Permissible variation in wheel tread diameter for six-wheeled trolley on the same wagon on BG bogie wagon while changing the wheel is -
(a) 6 mm (b) 13 mm (c) 12 mm (d) 15 mm
- 1.10 Permissible variation in new wheel tread diameter for six-wheeled unit on the same axle on BG bogie wagon wheel is -
(a) 0.8 mm (b) 0.5 mm (c) 0.6 mm (d) 0.7 mm
- 1.11 Permissible variation in wheel tread diameter for six-wheeled unit on the same trolley on BG bogie wagon while changing the wheel is -
(a) 4.0 mm (b) 8.0 mm (c) 6.0 mm (d) 10.0 mm
- 1.12 Permissible variation in wheel tread diameter for six-wheeled unit on the same wagon on BG bogie wagon while changing the wheel is -
(a) 4.0 mm (b) 5.0 mm (c) 6.0 mm (d) 8.0 mm
- 1.13 Permissible variation in new wheel tread diameter for four-wheeled unit on the same axle on BG bogie wagon is -
(a) 0.3 mm (b) 0.5 mm (c) 0.7 mm (d) 0.6 mm
- 1.14 Permissible variation in wheel tread diameter for four-wheeled unit on the same wagon on BG bogie wagon while changing the wheel is -
(a) 10 mm (b) 15 mm (c) 20 mm (d) 25 mm

- 1.15 The composite Brake block in yard for air Bk. train should be changed when thickness is -
(a) 10.0 mm (b) 15.0 mm (c) 20.0 mm (d) 25.0 mm
- 1.16 The Std. Gap between wheel & bk. Block in BOX wagon is -
(a) 8 mm (b) 8.5 mm (c) 6.25 mm (d) 6.8 mm
- 1.17 Of which brake van the quick coupling is the part-
(a) BVZT (b) BVZX (c) BVZC (d) BVZM
- 1.18 The 'f' type vacuum cylinder of 533- mm diameter is used in -
(a) BWL (b) Box (c) BRH (d) BOXN
- 1.19 In BOX/BCXT wagon the distance between Headstock & end of train pipe is -
(a) 200 mm (b) 216mm (c) 300 mm (d) 516mm
- 1.20 What is the length over Headstock of the BOXN wagon?
(a) 9774 mm (b) 9784 mm (c) 9777 mm (d) 9848 mm
- 1.21 Tare weight of the BOXN wagon is -
(a) 22.37 tons. (b) 22.47 tons. (c) 22.91 tons. (d) 22.90 tons.
- 1.22 Tare weight of the BRN wagon is -
(a) 25.2 tons. (b) 24.4 tons. (c) 23.80 tons. (d) 24.80 tons.
- 1.23 What is the length over couplers of the BOXN wagon?
(a) 10713 mm (b) 10813 mm (c) 11002 mm (d) 10100 mm

- 1.24 What is the length over couplers of the BCN wagon?
(a) 15400 mm (b) 15443 mm (c) 15429 mm (d) 15562 mm
- 1.25 What is the length over couplers of the BRN wagon?
(a) 14645 mm (b) 14564 mm (c) 14332 mm (d) 14463 mm
- 1.26 Gross load of the BOXN wagon is -
(a) 78.92 t (b) 81.28 t (c) 86.78 t (d) 88.81 t
- 1.27 Gross load of the BRN wagon is -
(a) 78.92 t (b) 81.28 t (c) 81.3 t (d) 82.4 t
- 1.28 Axle load of the brake van goods (BVG) is -
(a) 14.2 t (b) 15.3 t (c) 16.3 t (d) 16.9 t
- 1.29 What is the wheel diameter on tread of the brake van goods (BVG)?
(a) 1000 mm (b) 1050 mm (c) 1060 mm (d) 1090 mm
- 1.30 In accident manual, train parting is under –
(a) J 3 class (b) J 4 class (c) J 5 class (d) J10 class
- 1.31 Overall height of BOBR wagon from rail level is –
(a) 3735 mm (b) 3998 mm (c) 4324 mm (d) 4532 mm
- 1.32 In what type of depot, the ROH of air brake wagon should not be carried out -
(a) 'A' category (b) 'B' category (c) 'C' category (d) 'D' category

- 1.33 In welding repair in UIC trolley, what RDSO pamphlet is used?
(a) R9 (b) R7 (c) R10 (d) R21.42
- 1.34 Minimum pressure required for door operation on BOBR wagon is –
(a) 5.0 kg/cm² (b) 4.92 kg/cm² (c) 3.9 kg/cm² (d) 6.3 kg/cm²
- 1.35 The 'F' type vacuum cylinder of 560 mm diameter used in –
(a) BWL (b) BOBX (c) BOX (d) BVG
- 1.36 What is the diameter of side operated hand brake wheel for BOXN wagon is –
(a) 630 mm (b) 610 mm (c) 620 mm (d) 600 mm
- 1.37 Tare weight of the BCN wagon is -
(a) 22.47 tons. (b) 25.37 tons. (c) 27.20 tons. (d) 27.80 tons.
- 1.38 What type of draw gear used in brake van goods (BVG)?
(a) Screw coupling (b) CBC (c) HT coupling (d) NT coupling
- 1.39 Maximum pressure for door operation on BOBR wagon should not exceed -
(a) 8.56 kg/cm² (b) 8.90 kg/cm² (c) 9.14 kg/cm² (d) 9.90 kg/cm²
- 1.40 Length over buffer/coupler of the brake van match truck (BVM) is –
(a) 7213 mm (b) 7313 mm (c) 7412 mm (d) 7122 mm
- 1.41 Wheel base of the brake van match truck (BVM) is –
(a) 3510 mm (b) 3515 mm (c) 3505 mm (d) 3525 mm

- 1.42 Newly built BOXN wagon first POH periodicity is –
(a) 4.5 year (b) 5.5 year (c) 6.0 year (d) 6.5 year
- 1.43 Newly built BLC containers wagon first POH periodicity is –
(a) 4.5 year (b) 2.0 year (c) 6.0 year (d) 3.5 year
- 1.44 The BOX bogie is designed for an axle load of –
(a) 20.50 t (b) 20.80 t (c) 20.30 t (d) 20.10 t
- 1.45 Board gauge track gauge is –
(a) 1676 mm (b) 1667 mm (c) 1698 mm (d) 1500 mm
- 1.46 Types of brake system used in brake van goods (BVG) is –
(a) Air brake (b) Dual brake (c) vacuum brake (d) Non of the above
- 1.47 POH of BG brake van is –
(a) 3.5 year (b) 2.0 year (c) 2.5 year (d) 3.0 year
- 1.48 Torque value of Cartridge type roller bearing cap screw is –
(a) 42.0 kg-m. (b) 40.0 kg-m. (c) 38.0 kg-m. (d) 44.0 kg-m.
- 1.49 The distances between centers of brake cylinder fulcrum bracket and the piston rod eye which shall be –
(a) 780 ± 5 mm (b) 782 ± 5 mm (c) 784 ± 5 mm (d) 788 ± 5 mm

- 1.50 The clearance between pins and bushes should not exceed -
- (a) 1.0 mm (b) 0.5 mm
(c) 1.5 mm (d) None of the above
- 1.51 Which type of composite brake block is used in freight stock of under frame mounted brake system?
- (a) 'K' type (b) 'L' type
(c) 'KL' type (d) 'Modified K' type
- 1.52 During rolling out examination, it is seen that -
- (a) Flat place on tyre (b) Smoke is coming from axle box
(c) No brake binding (d) Broken spring
- 1.53 After RDSO Recommendation, What material is used BVG brake van in place of wood dust bag?
- (a) Glass wool (b) Cottonwood
(c) Steel wood (d) None of the above
- 1.54 Broad gauge roller bearing radial clearance is –
- (a) 123 to .132 mm (b) 0.132 to 0.145 mm
(c) 0.145 to 0.19 mm (d) 0.19 to 0.25 mm
- 1.55 C- class ODC shall be moved during –
- (a) Day light (b) Day-night time
(c) Only night time (d) None of the above

- 1.56 What type of coupler used in brake van match truck (BVM)?
- (a) Screw coupling (b) CBC
(c) Non- transition (d) None of the above
- 1.57 In air brake system, the thread joints are tightened with which type of tape?
- (a) Cello tape (b) Teflon tape
(c) Paper tape (d) None of the above
- 1.58 The 'E' type vacuum cylinder of 457mm diameter is used in -
- (a) BOBR wagon (b) Box wagon
(c) Bk. van (d) Four Wheeled wagon
- 1.59 Instructions for maintenance and operation of BOX wagon, What RDSO's technical pamphlet is used?
- (a) G-71 (b) G-73 (c) G-18 (d) G-16
- 1.60 What RDSO's technical pamphlet is used, for maintenance manual of Alliance-II coupler?
- (a) G-45H (b) G-78 (c) G-62 (d) G-40
- 1.61 Instructions for inspection and maintenance of BOXN wagon fitted with CASNUB bogies and twin pipe air brake system, What RDSO's technical pamphlet is used?
- (a) G-90 (b) G-70 (c) G-97 (d) WT- 77
- 1.62 Instructions for inspection and maintenance of BOBR wagon, What RDSO's technical pamphlet is used?
- (a) G-73 (b) G-78 (c) G-97 (d) G- 16

- 1.63 Instructions for inspection and maintenance of CASNUB bogies, What RDSO's technical pamphlet is used?
(a) G-97 (b) G-86 (c) G-90 (d) G- 95
- 1.64 Instructions for inspection and maintenance of Air brake, What RDSO's technical pamphlet is used?
(a) G-97 (b) G-81 (c) G-73 (d) G- 71
- 1.65 As per Railway Board, In effective percentage of wagon in open line is –
(a) 3.5% (b) 2.5% (c) 4.0% (d) 10%
- 1.66 'A' category depot will issue BPC of CC Rake valid up to Km –
(a) 4500 Km (b) 5000 Km (c) 6000 Km (d) 6500 Km
- 1.67 Depot, other then 'A' category will issue BPC of CC rake valid up to Km –
(a) 4500 Km (b) 5000 Km (c) 6000km (d) 6500 Km
- 1.68 what time relaxation of period has been given to a loaded BOX wagon for returning for POH-
(a) After 15 days (b) After 30 days (c) Before 30 days (d) before 15 days
- 1.69 The mini rake will have composition of minimum –
(a) 10 wagon (b) 20 wagon (c) 25 wagon (d) 30 wagon
- 1.70 The free time for loading/unloading of mini rake shall be –
(a) 6 Hours (b) 8 Hours (c) 5 Hours (d) 2 Hours

- 1.71 The mini rake scheme will be applicable only to –
(a) Covered wagon (b) Open wagon (c) Tank wagon (d) Both of this
- 1.72 As per new wagon numbering scheme, first two digits will indicate-
(a) Owning Railway (b) Type of wagon (c) Year of manufacture (d) Cheek digit
- 1.73 what time relaxation of period has been given to a empty BOX wagon for returning for POH-
(a) Before 15 days (b) After 30 days (c) Before 30 days (d) before 15 days
- 1.74 What do you mean by PME?
(a) Pre medical examination (b) Pre maintenance examination
(c) Periodical maintenance examination (d) Power mechanical equipment
- 1.75 What do you mean by CC rakes?
(a) Content contact pad. (b) Close circuit rake
(c) Complete coal rake (d) Both of this

CHAPTER 2

CBC & DRAFT GEAR

- 2.01 The minimum permissible buffer height above rail line to center of H/ Stock under loaded condition is -
- (a) 1105 mm (b) 1145 mm (c) 1115 mm (d) 1030 mm
- 2.02 Standard buffer projection from Headstock is -
- (a) 650 mm (b) 635 mm (c) 620 mm (d) 660 mm
- 2.03 Min Permissible buffer projection from Headstock is -
- (a) 635 mm (b) 605 mm (c) 590 mm (d) 584 mm
- 2.04 Standard diameter of knuckle pivot pin is -
- (a) 50 mm (b) 43 mm (c) 41.28 mm (d) 34 mm
- 2.05 Permissible diameter of knuckle pivot pin is -
- (a) 41 mm (b) 38.5 mm (c) 39.5 mm (d) 40.5 mm
- 2.06 Standard diameter of Clevis pin is -
- (a) 35 mm (b) 38 mm (c) 39 mm (d) 37 mm
- 2.07 Permissible diameter of Clevis pin is -
- (a) 35.8 mm (b) 38.5 mm (c) 36.5 mm (d) 37 mm
- 2.08 Standard dimension of shank wear plate for AAR coupler is -
- (a) 12 mm (b) 8 mm (c) 6 mm (d) 14 mm

- 2.09 Standard dimension of distance between the nose of Knuckle and guard arm is -
(a) 140 mm (b) 150 mm (c) 127 mm (d) 12 mm
- 2.10 Wear limit of distance between the nose of Knuckle and guard arm is -
(a) 140 mm (b) 155 mm (c) 125 mm (d) 130 mm
- 2.11 For goods train, max. Buffer height from rail level is -
(a) 1105 mm (b) 1115 mm (c) 1015 mm (d) 1100 mm
- 2.12 The maximum permissible free slack in the draft gear in service is –
(a) 35 mm (b) 30 mm (c) 25 mm (d) 20 mm
- 2.13 No. of CBC gauge are –
(a) 5 (b) 8 (c) 12 (d) 2
- 2.14 For short case, what shall be the max buffer projection from the Headstock on BG wagon?
(a) 480 mm (b) 456 mm (c) 460 mm (d) 510mm
- 2.15 For short case, what shall be the min. buffer projection from the Headstock on BG wagon?
(a) 420 mm (b) 440 mm (c) 410 mm (d) 406mm
- 2.16 What is the max. Permissible wears in Draw Bars shackle pinhole?
(a) 5.23 mm (b) 6.35 mm (c) 7.21 mm (d) 6.69mm
- 2.17 What is the max. Permissible wear in draw Bars cotter pin hole?
(a) 10.7 mm (b) 12.3 mm (c) 12.7 mm (d) 13.1mm

- 2.18 What is the weakest link of the center buffer coupler?
(a) Knuckle (b) Draft gear (c) Lock (d) Yoke pin
- 2.19 The high capacity draft gears is -
(a) Mark -20 (b) Mark 50 (c) CF 21 (d) DF 39
- 2.20 The high capacity draft gears is -
(a) RF361 (b) RF-401 (c) RF-600 (d) RF-21
- 2.21 To Adjust buffer height for 930 mm wheel diameter on BCN wagon except CASNUB 22 W, packing piece used is –
(a) 38 mm (b) 37 mm (c) 33 mm (d) 32 mm
- 2.22 What type of center buffer coupler used in Indian Railway?
(a) APRT type (b) AARP type (c) AAR type (d) ARPA type
- 2.23 What type of head and shank are used in AAR type center buffer coupler?
(a) E&G Type (b) E&F Type (c) F&E Type (d) H&F Type
- 2.24 The yield strength of knuckle of material AAR –M- 201 Grade ‘C’ (STD) is –
(a) 180 t (b) 171 t (c) 142 t (d) 132 t
- 2.25 The yield strength of knuckle of material AAR –M- 201 Grade ‘E’ (HT) is –
(a) 180 t (b) 171 t (c) 142 t (d) 132 t
- 2.26 The yield strength of coupler body of AAR Grade ‘C’ (STD) is –
(a) 180 t (b) 169 t (c) 179 t (d) 159 t

- 2.27 The yield strength of coupler body of material AAR-M- 211 Grade 'E' (HT) is –
(a) 180 t (b) 200 t (c) 205 t (d) 211 t
- 2.28 The yield strength of the knuckle is 180 t compared to 132 t in standard coupler the draft capacity of HT coupler is –
(a) 45% higher (b) 36% higher (c) 22% higher (d) 18% higher
- 2.29 The working strength of center buffer coupler is -
(a) 100 t (b) 120 t (c) 140 t (d) 180 t
- 2.30 The diameter of knuckle pivot pin is –
(a) 40.0 mm (b) 38.0 mm (c) 37.0 mm (d) 35.0 mm
- 2.31 In (HR-40 I) Draft gear, the pack with 11 Nos of rubber pads and 10 Nos of spacer plates, when assembled in the housing with follower shall not be less than –
(a) 638 mm (b) 632 mm (c) 660 mm (d) 620 mm
- 2.32 The ultimate tensile strength of coupler body of AAR –M- 201 & 211 Grade 'C' (STD) is –
(a) 300 t (b) 320 t (c) 290 t (d) 270 t
- 2.33 The ultimate tensile strength of coupler body of AAR –M- 201 & 211 Grade 'E' (HT) is-
(a) 300 t (b) 330 t (c) 320 t (d) 370 t
- 2.34 The ultimate tensile strength of knuckle of AAR-M- 201 & 211 Grade 'C' (STD) is –
(a) 240 t (b) 250 t (c) 241 t (d) 251 t

- 2.35 The ultimate tensile strength of knuckle of AAR-M- 201 & 211 Grade 'E' (HT) is –
(a) 250 t (b) 280 t (c) 295 t (d) 305 t
- 2.36 The conventional screw coupling has a working load of –
(a) 2.9 t (b) 22.5 t (c) 24.3 t (d) 20.3 t
- 2.37 The working strength of center buffer coupler is –
(a) 180 t (b) 160 t (c) 120 t (d) 80 t
- 2.38 The working strength of Alliance –II coupler is -
(a) 100 t (b) 80 t (c) 70 t (d) 54 t
- 2.39 Which among the buffer gear assembly absorbing the buffer impact?
(a) Buffer spring (b) Plunger (c) Buffer casting (d) Spindle
- 2.40 The tractive effort of the Loco to the individual wagons is transmitted with the help of -
(a) CBC (b) Draw gear (c) Knuckle (d) Side frame
- 2.41 Material AAR –M- 201 & 211 Grade 'E' coupler is called as –
(a) High tensile (b) Non- Tensile (c) Standard (d) None of the above
- 2.42 Clevis and Clevis pin are the part of –
(a) Alliance- II coupler (b) Non- Transition coupler
(c) Transition coupler (d) Draw bar

NOTES

CHAPTER 3

WHEEL & AXLE

- 3.01 Standard diameters of wheel on tread on BOXN Wagon is -
(a) 1010 mm (b) 1000 mm (c) 950 mm (d) 906 mm
- 3.02 Minimum diameters of wheel on tread on BOXN Wagon during service is -
(a) 1000 mm (b) 960 mm (c) 906 mm (d) 915 mm
- 3.03 Standard diameter of wheel on treads on BOX Wagon is -
(a) 960 mm (b) 1000 mm (c) 906 mm (d) 860 mm
- 3.04 Minimum diameter of wheel on treads on BOX Wagon during service is -
(a) 860 mm (b) 960 mm (c) 906 mm (d) 990 mm
- 3.05 The axle load of BOXN, BCN, BRN, BOBR, BTPN wagon is -
(a) 22.9 t (b) 20.32 t (c) 16.6 t (d) 12.2 t
- 3.06 The axle load of BOX, BCX, BRH wagon is -
(a) 22.9 t (b) 20.32 t (c) 16.3 t (d) 12.2 t
- 3.07 The axle capacity of BVZC, CRT, BTAL, BTAG, BTPGL wagon is -
(a) 22.9 t (b) 20.3 t (c) 16.3 t (d) 12.2 t
- 3.08 The axle capacity of TPR, TORS, and TCL wagon is –
(a) 22.9 t (b) 20.3 t (c) 16.3 t (d) 12.2 t

- 3.09 The wheel gauge should be measured on –
(a) Off load condition (b) Loaded wagon (c) Both condition (d) Empty wagon
- 3.10 The lowest wheel dia permitted by workshop for BOXN wagon is -
(a) 919 mm (b) 906 mm (c) 925 mm (d) 860 mm
- 3.11 In CTRB the grease use per Axle box is -
(a) 455 ± 30 gms (b) 490 ± 15 gms (c) 500 ± 35 gms (d) 550 ± 20 gms
- 3.12 Maximum permissible wear on outer collar size of journals 255*127, 254*127, 229*114 are –
(a) 6.0 mm (b) 11 mm (c) 8.0 mm (d) 5.0 mm
- 3.13 RDSO has stipulated three intermediate profile BOXN/BCN wagon with flange thickness as 20,22 and -
(a) 28 mm (b) 25 mm (c) 24 mm (d) 23 mm
- 3.14 The condemning wheel diameter of BVG is -
(a) 919 mm (b) 906 mm (c) 925 mm (d) 990 mm
- 3.15 The condemning diameter of wheel of B0I wagon is -
(a) 990 mm (b) 906 mm (c) 813 mm (d) 860 mm
- 3.16 The new diameter of wheel for BOY wagon is -
(a) 990 mm (b) 1090 mm (c) 1000 mm (d) 915 mm

- 3.17 The condemning diameter of BOBR wheel is -
(a) 815 mm (b) 906 mm (c) 990 mm (d) 860 mm
- 3.18 The condemning diameter of BTPN wheel is -
(a) 813 mm (b) 990 mm (c) 906 mm (d) 860 mm
- 3.19 The condemning diameter of BWL wheel is -
(a) 813 mm (b) 906 mm (c) 915 mm (d) 860 mm
- 3.20 The radius at the root of the flange of new worn wheel profile is -
(a) 14 mm (b) 16mm (c) 18mm (d) 120 mm
- 3.21 Permissible maximum flat surface on tread on other BG wagon are –
(a) 75 mm (b) 60 mm (c) 75 mm (d) 70 mm
- 3.22 What should be permissible limit of ovality and taper on the journal?
(a) 0.5 mm (b) 0.05 mm (c) 0.1 mm (d) 0.15mm
- 3.23 Permissible maximum flat surface on tread on IRS BG wagon is –
(a) 75 mm (b) 50 mm (c) 60 mm (d) 70 mm
- 3.24 What is the minimum lateral play between axle box lug and horn check for UIC type trolleys?
(a) 20 mm (b) 22 mm (c) 18 mm (d) 12 mm

- 3.25 What is the maximum lateral play between axle box lug and horn check for UIC type trolleys?
- (a) 20 mm (b) 22 mm (c) 25 mm (d) 28 mm
- 3.26 Minimum longitudinal clearance between axle box lug and horn check for UIC type trolleys are –
- (a) 10 mm (b) 12 mm (c) 14 mm (d) 16 mm
- 3.27 Maximum longitudinal clearance between axle box lug and horn check for UIC type trolleys are –
- (a) 12 mm (b) 14 mm (c) 16 mm (d) 18 mm
- 3.28 Maximum permissible wear on length of journal size of 255*127, 254*127,229*144 are-
- (a) 6.0 mm (b) 11 mm (c) 5.0 mm (d) 8.0 mm
- 3.29 Maximum permissible wear on inner collar size of journal 255*127,254*127,229*144 are-
- (a) 6.0 mm (b) 11 mm (c) 5.0 mm (d) 8.0 mm
- 3.30 The wheel gauge measures -
- (a) The distance between flanges of two wheels on same axle.
- (b) The distance between dia and axle.
- (c) The distance between journal and bearing.
- (d) The distance between two wheel.

- 3.31 What is an integrated portion of the axle?
- (a) Cap (b) Roller bearing
(c) **Journal** (d) None of the above
- 3.32 For measuring the diameter of ovality & taper of the journal, how many locations are needed?
- (a) Two Location both the vertical and horizontal axis
(b) **Three locations both the vertical and horizontal axis**
(c) Three location only vertical axis
(d) None of the above

NOTES

CHAPTER 4

AIR BRAKE

- 4.001 Standard dimension 'e' in SAB on Goods stock is -
(a) 570 mm (b) 575 mm (c) 580 mm (d) 565 mm
- 4.002 In yard leaving, minimum Permissible dimension 'e' in SAB on Goods stock is -
(a) 555 mm (b) 570 mm (c) 565 mm (d) 580 mm
- 4.003 The colour coding of distributor valve of air brake goods stock is –
(a) Yellow (b) Black (c) Green (d) White
- 4.004 In air brake empty stock end-to-end goods rakes, The empty rake after unloading should be offered for intensive examination before-
(a) Next station (b) Next Loading (c) Next Unloading (d) 36 Hours
- 4.005 In air brake end-to end rakes, After intensive examination validity of BPC remain up to the –
(a) Next station (b) Loading point (c) Destination point (d) 72 Hours
- 4.006 Control rod diameter of air brake wagon is –
(a) 30 mm (b) 32 mm (c) 38 mm (d) 40 mm
- 4.007 Piston stroke of BOXN wagon in empty conditions is -
(a) 85 ± 10 mm (b) 70 ± 15 mm (c) 75 ± 5 mm (d) 80 ± 10 mm

- 4.008 Piston stroke of BOXN wagon in loaded conditions is -
(a) 140 ± 15 mm (b) 130 ± 10 mm (c) 120 ± 15 mm (d) 125 ± 15 mm
- 4.009 Piston stroke is empty conditions of BOY wagon is -
(a) 90 ± 10 mm (b) 90 ± 5 mm (c) 90 ± 15 mm (d) $90\pm 10/5$ mm
- 4.010 Piston stroke is loaded conditions of BOY wagon is -
(a) 135 ± 5 mm (b) 135 ± 10 mm (c) 135 ± 20 mm (d) 120 ± 10 mm
- 4.11 In air brake stock, BPC becomes invalid, if the rake is stabled in any examination yard-
(a) 24 hours (b) 36 hours (c) 48 hours (d) 12 hours
- 4.012 Dirt collector should be cleaned within-
(a) At the time of ROH (b) 2 month (c) 6 month (d) 3 month
- 4.013 What is the capacity of control reservoir in goods train?
(a) 4 Lit. (b) 6 Lit (c) 8 Lit. (d) 10 Lit.
- 4.014 How much air pressure should be dropped in brake van/ last vehicle for continuity test?
(a) 0.8 Kg/Cm² (b) 1.0 Kg/Cm² (c) 1.2 Kg/Cm² (d) 1.5 Kg/Cm²
- 4.015 The Colour of Brake Pipe in Twin pipe brake system is -
(a) Black (b) Yellow (c) Green (d) White
- 4.016 The Colour of Feed Pipe in twin pipe wagon is -
(a) Black (b) Yellow (c) Green (d) White

- 4.017 What should be the brake pipe pressure in engine?
(a) 4.8 Kg/Cm² (b) 4.7 Kg/ Cm² (c) 5.0 Kg/ Cm² (d) 6.0 Kg/ Cm²
- 4.018 The BP pressure in Brake Van of 56 -BOXN wagon load should not be less than –
(a) 4.5kg/ Cm² (b) 3.7 kg/ Cm² (c) 4.8 kg/ Cm² (d) 5.8kg/ Cm²
- 4.019 What should be the effective pressure in brake cylinder during full service application?
(a) 3.6 Kg/ Cm² (b) 3.2 Kg/ Cm² (c) 3.8 Kg/ Cm² (d) 4.1 Kg/ Cm²
- 4.020 When we release manually KE type DV, the air pressure release form -
(a) CR & AR (b) BC & AR (c) BC & CR (d) AR & DV
- 4.021 The diameter of branch pipe of BP to DV for wagon is –
(a) 25 mm (b) 20 mm (c) 13 mm (d) 22 mm
- 4.022 If ELD handle is kept on loaded position of empty wagon, the result will be -
(a) Air Brake Power (b) Brake binding (c) None of the above
- 4.023 In one BOXN wagon total no. of brake block are -
(a) 4 (b) 8 (c) 12 (d) 16
- 4.024 'A' dimension in Boxn wagon is -
(a) 70 ± 0^2 mm (b) 172 ± 3 mm (c) 175 ± 4 mm (d) $175 + 1$ mm
- 4.025 For testing Air pressure locomotive the test plate hole diameter is-
(a) 8.2 mm (b) 7.5 mm (c) 9.5 mm (d) 10 mm

4.026 D.V. is directly attached with-

- (a) Brake cylinder (b) Brake pipe (c) AR (d) Common pipe bracket

4.027 The diameter of air brake cylinder BOXN wagon is-

- (a) 300 mm (b) 355 mm (c) 360 mm (d) 315 mm

4.028 The diameter of air brake cylinder in BVZC (Wagon) is -

- (a) 300 mm (b) 295 mm (c) 305 mm (d) 315 mm

4.029 The capacity of Auxiliary Reservoir (wagon) in air brake except Bk.Van is-

- (a) 200 litre (b) 100 litre (c) 300 litre (d) 150 litre

4.030 In Single pipe system the time taken in releasing of the wagon brake is-

- (a) 60 Sec. (b) 120 Sec. (c) 210 Sec. (d) 90 Sec.

4.031 Distance between the control rod head and the barrel of SAB is named as -

- (a) 'E' dimensions (b) 'C' dimension (c) 'A' dimension (d) "d" dimension

4.032 The capacity of compressor machine for air brake testing of rake is –

- (a) 12-15 Kg/ Cm² (b) 8-10 Kg/ Cm² (c) 7-12 Kg/ Cm² (d) 7-8 Kg/ Cm²

4.033 In single pipe air brake system, BP is charged with –

- (a) 6 ± 0.2 Kg/Cm² (b) 5 ± 0.1 Kg/Cm² (c) 5.0 ± 0.2 Kg/Cm² (d) 6.0 ± 0.1 Kg/Cm²

4.034 At the originating point, minimum brake power of premium end-to-end rake is -

- (a) 85% (b) 95% (c) 90% (d) 98%

- 4.035 In twin pipe system the Auxiliary Reservoir pressure should be -
(a) 6.0 kg/ Cm² (b) 4.8 Kg/ Cm² (c) 5.0 Kg/ Cm² (d) 6.5 Kg/ Cm²
- 4.036 With The help of cut of angle cock, the air pressure in air hose is exhaust or closed -
(a) True (b) false (c) None of the above
- 4.37 The brake power of CC rake from nodal point is –
(a) 90% (b) 100% (c) 85% (d) 75%
- 4.038 Brake power certified issued for such Premium end-to-end rakes will be valid for –
(a) 7±4 days (b) 10±²₀ days (c) 15 ±3 days (d) one month
- 4.039 The amount of air pressure in control reservoir of twin pipe system is -
(a) 3.8 Kg/ Cm² (b) 6.0 Kg/ Cm² (c) 5.0 Kg/ Cm² (d) 4.8 Kg/ Cm²
- 4.040 What is the function of DC (Dirt collector)?
(a) Collect dirt (b) Collect air (c) Clean air (d) Clean CR
- 4.041 How much pressure should drop in a minute after putting a test plate in locomotive?
(a) 0.8 Kg/ Cm² (b) 1.0 Kg/ Cm² (c) 1.2 Kg/ Cm² (d) 1.5 Kg/ Cm²
- 4.042 Diameter of brake pipe and feed pipe is (In a good train)-
(a) 28 mm (b) 34 mm (c) 32 mm (d) 36 mm
- 4.043 The three branch pipe attached to common pipe bracket, where the middle pipe lead to-
(a) CR (b) DV (c) BC (d) AR

- 4.044 How many cut of angle cock are provided in a vehicle in twin pipe system-
- (a) Two (b) Four (c) Six (d) None
- 4.045 While isolating DV, the position of the handle in relation to rail line shall be
- (a) Horizontal (b) vertical (c) None of the above
- 4.046 If brake block is not releasing, pin is remove to release the brake -
- (a) Anchor link pin (b) control rod pin (c) Pull rod pin (d) equalizing pin
- 4.047 During Brake application, air flow from -
- (a) AR to BC (b) PB to BC (c) BP to BC (d) CR to BC
- 4.048 The position of handle to close angle cock is -
- (a) Horizontal to pipe line (b) Perpendicular to pipe line (c) Center to pie line
- 4.049 The position of handle to open angle cock is -
- (a) Parallel to pipe line (b) Perpendicular to pipe line (c) Center to pie line
- 4.050 The leverage Ratio is obtained by -
- (a) Brake cylinder (b) Tie Rod (c) Empty Rod (d) L/E Dives
- 4.051 BP pressure in working train is -
- (a) 6.0 Kg/ Cm² (b) 5.5 Kg/ Cm² (c) 5.0 Kg/ Cm² (d) 15.2 Kg/ Cm²
- 4.052 The colour for brake power certificate for Premium end-to-end rake is-
- (a) Green (b) White (c) Pink (d) Yellow

- 4.053 The en-route Brake power percentage of goods train should be -
(a) 85% (b) 75% (c) 95% (d) 90%
- 4.054 For testing DV the time required for brake cylinder draining from 3.8 to .04 kg/cm² is -
(a) 30-40 sec (b) 40-50 sec (c) 45-60 sec (d) 50-75 sec
- 4.055 What is the piston stroke of BVZC wagons?
(a) 50±10 mm (b) 70±10 mm (c) 85±10 mm (d) 90± 5 mm
- 4.056 What is the empty piston stroke of BOBR/BOBRN wagon is -
(a) 70±10 mm (b) 75±10 mm (c) 80±10 mm (d) 100±10 mm
- 4.057 The diameter of piston rod of 355-mm brake cylinder is -
(a) 40 mm (b) 38 mm (c) 30 mm (d) 25mm
- 4.058 The diameter of piston rod of 300-mm brake cylinder is –
(a) 40 mm (b) 36 mm (c) 32 mm (d) 30 mm
- 4.059 'A' dimension of the BOBRN wagon is -
(a) 29+₋₂ 0 mm (b) 27+₋₂ 0 mm (c) 33± 2 mm (d) 25+₋₅ 2 mm
- 4.060 What is the colour of BPC of air brake system?
(a) Red (b) Pink (c) Green (d) Yellow
- 4.061 What is the colour of BPC of air brake CC rake?
(a) Red (b) Pink (c) Green (d) Yellow

4.062 During brake release, air from BC goes to -

- (a) AR (b) CR (c) DV (d) Atmosphere

4.063 In twin pipe system, the FP is directly joined to branch pipe of -

- (a) CR (b) BC (c) DV (d) AR

4.064 The max. Air pressure in BC after brake release is -

- (a) 4.8 Kg/ Cm² (b) 5 Kg/ Cm² (c) 0.0 Kg/ Cm² (d) 2.5 Kg/ Cm²

4.065 The max. Air pressure in BP during application is -

- (a) 4.8±1 Kg/ Cm² (b) 5.0 Kg/ Cm² (c) 3.8 ± 0.1Kg/ Cm² (d) 3.8 Kg/ Cm²

4.066 The capacity of AR for wagon is-

- (a) 200 lit. (b) 200 lit. (c) 100 lit. (d) 150 lit.

4.067 In conventional air Brake system, the diameter of brake cylinder is-

- (a) 255 mm (b) 155 mm (c) 355 mm (d) 455 mm

4.068 The air pressure during charging in single pipe system is -

- i In AR- (a) 5 kg/ cm² (b) 5.2 kg/ cm² (c) 6.1 kg/ cm² (d) 5.5 kg/ cm²
ii In CR- (a) 6 kg/ cm² (b) 5 kg/ cm² (c) 6.1 kg/ cm² (d) 5.5 kg/ cm²
iii In BP- (a) 6 kg/ cm² (b) 5 kg/ cm² (c) 6.1 kg/ cm² (d) 5.5 kg/ cm²

4.069 As per population of air brake stock the percentage of distribution value should be kept as spares -

- (a) 10% (b) 2% (c) 5% (d) 10%

- 4.070 The diameter of ball in internal ball valve of cut of angle cock is -
(a) 15 mm (b) 13 mm (c) 17 mm (d) 10 mm
- 4.071 The diameter of air brake cylinder for BVZC is -
(a) 400 mm (b) 300 mm (c) 355 mm (d) 295 mm
- 4.072 The diameter of Std. Air brake Pressure gauge is-
(a) 60 mm (b) 70 mm (c) 90 mm (d) 100 mm
- 4.073 What type of cut of angle cock fitted in goods stock?
(a) Flat type (b) Ball type (c) Square type (d) None of the above
- 4.074 Full form of BP is -
(a) Big pipe (b) Brake pipe (c) Bent pipe (d) None of the above
- 4.075 For testing DV the time required for filling BC in single pipe system from 0-36 kg/cm² is -
(a) 20-25 sec (b) 18-30 sec (c) 15-25 sec (d) 30-40 sec
- 4.076 What should be the pressure in feed pipe?
(a) 3.8 Kg/cm² (b) 5.0 Kg/Cm² (c) 6.0 Kg/Cm² (d) none of the above
- 4.077 When DV is working condition the position of DV handle is -
(a) Vertical (b) Horizontal (c) Inclined (d) Parallel
- 4.078 “e” dimension for SAB-600, in wagon is -
(a) 444 – 474 mm (b) 555-575 mm (c) 500- 575 mm (d) 440- 575 mm

4.079 Control rod of SAB when rotated for one round, control rod head moves by a distance of -

- (a) 6.0 mm (b) 4.0 mm (c) 2.0 mm (d) 1.0 mm

4.080 Piston stroke of the BVZC is -

- (a) 60 ± 10 mm (b) 70 ± 10 mm (c) 65 ± 10 mm (d) 75 ± 10 mm

4.081 For testing DV the time required for charging CR from 0-48 kg/cm² is -

- (a) 290 ± 20 sec (b) 150 ± 20 sec (c) 185 ± 25 sec (d) 200 ± 20 sec

4.082 In air brake system branch pipe of DV to AR is connected via common pipe bracket is -

- (a) At the bottom (b) In Middle (c) At Top (d) To AR

4.083 The type of joint for FP& BP is -

- (a) Grip seal (b) Flange (c) Thread coupling (d) knuckle

4.084 In air brake system branch pipe of DV to BC is connected via common pipe bracket is -

- (a) At the bottom (b) In Middle (c) At the Top (d) To AR

4.085 FP charges -

- (a) AR (b) CR (c) DV (d) BP

4.086 Which equipments are not charged, when C3W DV is isolated in twin pipe system?

- (a) Brake cylinder only (b) Control reservoir and brake cylinder
(c) Control reservoir and auxiliary reservoir (d) Auxiliary reservoir and Brake cylinder

4.087 The leakage rate in BP or FP in air brake system is -

- (a) $04 \text{ kg/ cm}^2 / \text{Min}$ (b) $0.25 \text{ kg/ cm}^2 / \text{Min}$
(c) $0.3 \text{ kg/ cm}^2 / \text{Min}$ (d) $0.1 \text{ kg/ cm}^2 / \text{Min}$

- 4.088 The pressure of Auxiliary reservoir makes to work -
- (a) Common pipe bracket (b) Brake cylinder
(c) Control Reservoir (d) DV
- 4.089 With what pressure of AR twin pipe system works -
- (a) BP Pressure only (b) FP Pressure only
(c) BP&FP Pressure (d) BC Pressure
- 4.090 In single pipe system works -
- (a) BP Pressure (b) FP Pressure
(c) BP& FP Pressure (d) none of the above
- 4.091 In wagon, hand brake is used when -
- (a) Standing in yard (b) Running in down gradient
(c) Running in up gradient (d) None of the above
- 4.092 SAB adjust clearance between -
- (a) Wheel and brake block (b) Tie Rod and Brake block
(c) Anchor pin to control rod (d) None of the above
- 4.093 The M.R. pressure of engine should be-
- (a) 6.0 to 8.0 Kg/ Cm² (b) 8.0 to 10.0 Kg/ Cm²
(c) 10.0 to 12.0 Kg/ Cm² (d) 12.0 to 15.0 Kg/ Cm²

4.094 What do you mean of SWTR?

- (a) Single wagon test rubber (b) Single wagon test rig
(c) Sliding wagon test ring (d) None of the above

4.095 In an air brake goods wagon in empty condition the handle of E/L box if kept in loaded condition, it resettled in -

- (a) Brake winding (b) Brake power
(c) Poor brake power (d) None of the above

4.96 SAB fitted in-

- (a) End pull rod (b) Main pull rod
(c) Control rod (d) Dead equalizing lever

4.97 Dropping BP pressure to do full service application is -

- (a) 2.0 to 3.0 kg/ cm² (b) 3.0 to 3.2 kg/ cm²
(c) 1.3 to 1.6 kg/ cm² (d) 1.5 kg/ cm²

4.98 The function of dirt collector is to segregate dirt portion from the air -

- (a) After coming DV (b) Before coming to DV (c) None of the above

4.99 What is the function of Control reservoir in air Brake system?

- (a) To control the air pressure (b) To control the DV main valve
(c) To control the brake system (d) To control the AR

4.100 Auxiliary reservoir is assisting in –

- (a) Charging of DV (b) Charging of BP
(c) Sanding air to BC (d) Charging of CR

- 4.101 When isolating handle of C3W type DV is kept in horizontal at charging position -
- (a) Piston rods of BC come out (b) Piston rod of BC close not come out
(c) Brake applies and releases (d) Nothing happens
- 4.102 the control reservoir is mounted on the other face of –
- (a) Distributor valve (b) Brake cylinder
(c) Common pipe bracket (d) Axially reservoir
- 4.103 Cut of angle cock can be fitted with –
- (a) Feed pipe only (b) Brake pipe only
(c) Feed pipe & brake pipe both (d) None of the above
- 4.104 BP & FP Air hose pipe can be fitted to cut off angle cock by-
- (a) Socket (b) Coupling
(c) Flange (d) Nut
- 4.105 The main BP pressure in brake van of working train with 56 wagon is -
- (a) $4.8 \pm 0.1 \text{kg/cm}^2$ (b) $4.5 \pm 0.1 \text{kg/cm}^2$ (c) $6.0 \pm 0.1 \text{kg/cm}^2$ (d) None of the above
- 4.106 While some defect is notice in brake pipe in twin pipe system, the train can be worked as single pipe system -
- (a) By passing BP (b) Not worked
(c) Work, any change (d) None of the above
- 4.107 If C3W type DV is manually released, pressure is released from -
- (a) AR (b) Control reservoir
(c) Brake cylinder (d) All above

4.108 Full form of AR is -

- (a) Accident of reservoir
- (b) Axle ring
- (c) Auxiliary reservoir
- (d) None of the above

4.109 Full form of BC is -

- (a) Brake control
- (b) Beside coach
- (c) Brake cylinder
- (d) None of the above

4.110 The positions of Cut of angle cock handle while open is -

- (a) Parallel to pipe
- (b) Perpendicular to pipe
- (c) None of the above
- (d) Parallel to pipe & Perpendicular to pipe

4.111 The full form of CR is -

- (a) Central Reservoir
- (b) Cylindrical Reservoir
- (c) Control reservoir
- (d) None of the above

4.112 During twin pipe charging position, air pressure in Auxiliary Reservoir is -

- (a) 6.5kg/ cm²
- (b) 5.8 kg/ cm²
- (c) 6.0 kg/ cm²
- (d) None of the above

4.113 What shall be the function of check valve of C3W type distributor valve?

- (a) Charging the AR
- (b) Charging the CR
- (c) Charging the BC
- (d) None of the above

4.114 For by pass the special device essential is -

- (a) FP &BP exhauster
- (b) FP&BP reactor
- (c) By pass coupler
- (d) BP FP jointer

- 4.115 In twin pipe system, the BP is directly jointed to branch pipe of -
- (a) AR (b) BC
(c) DV (d) Common pipe bracket.
- 4.116 BC vent plug is used for-
- (a) Brake application (b) Brake release
(c) Air leakage to stop (d) Air pressure maintenance
- 4.117 Brake system can be defective due to-
- (a) Train movement (b) Airflow
(c) Bk. application & release (d) Cattle run over
- 4.118 The length of air hose is -
- (a) 796 +-6 mm (b) 784+-6 mm
(c) 790+-6.1 mm (d) 660+-6 mm
- 4.119 In air brake system, during sensitivity test Brake should apply when the rate of drop of air pr in BP is -
- (a) 0.3 kg/ cm² in 3 sec (b) 0.4 kg/ cm² in 4 sec
(c) 0.5 kg/ cm² in 5 sec (d) 0.6 kg/ cm² in 6 sec
- 4.120 In air brake system, during insensitivity test Brake should not apply when the rate of drop of air pr in BP is -
- (a) 0.8 kg/ cm² in 8 sec (b) 0.4 kg/ cm² in 4 sec
(c) 0.5 kg/ cm² in 5 sec (d) 0.3 kg/ cm² in 60 sec

- 4.121 the permissible leakage rate in air brake system in centrifugal dirt collector is -
(a) 02 kg/ cm²/min (b) 0.2 kg/ cm²/min
(c) 0.20 kg/ cm²/min (d) No leakage
- 4.122 To uncouple BP or FP air hose it is essential to
(a) Open adjacent angle cock (b) Close adjacent angle cocks
(c) Close supply of air from loco (d) None of the above
- 4.123 In air Bk. system the rate of leakage should not be more then -
(a) 0.025 kg/ cm²/min (b) 0. 25 kg/ cm²/min
(c) 0.0025 kg/cm²/min (d) 0.255 kg/ cm²/min
- 4.124 For running 1200mt long train, it is essential to have -
(a) Single pipe graduated release air bk. System
(b) Twin pipe graduated release air bk. System
(c) Single & double pipe-graduated release air bk. System
(d) None of the above
- 4.125 In working train having 56 wagon, the air pressure in Bk. van is -
(a) 0.25 kg/ cm² less then 5kg/ cm² (b) 0. 2 kg/ cm²/min less then 5kg/ cm²
(c) 4.8 kg/ cm² (d) None of the above
- 4.126 For releasing Brakes, SAB is rotated -
(a) Toward end panel clockwise (b) Toward trolley in clockwise
(c) Toward trolley in anticlockwise (d) Toward end panel Anti clockwise

- 4.127 The std. free heights and exert force of BC return spring is -
- (a) 600 mm- 200 kg/cm² (b) 700 mm- 250 kg/cm²
(c) 730 mm- 125 kg/cm² (d) 800 mm- 100 kg/cm²
- 4.128 The ELB device indicator plate shows -
- (a) Yellow empty, black loaded (b) Blue empty, black loaded
(c) White empty, black loaded (d) black empty, blue loaded
- 4.129 When isolating handle of KE type DV is kept in horizontal at charging position -
- (a) Piston rods of BC come out (b) Piston rod of BC close not come out
(c) Brake applies and releases (d) Nothing happens
- 4.130 The trouble shooting for branch pipe broken of DV to BC is -
- (a) Pipe to be tightened by wire and DV,AR to be isolated followed by manual releasing
(b) Pipe to be tightened by wire,release brake by rotating SAB and run train
(c) Non of the above
- 4.131 The first step of releasing brake binding in conventional A/B system is to -
- (a) Open vent plug of BC (b) Rotate SAB
(c) Take out pin of SAB (d) Isolate DV & release manually.
- 4.132 The total no. of MU washer in a twin pipe wagon is –
- (a) 4 (b) 4 palm & rubber sealing ring
(c) 4 coupling head no washer (d) 6

- 4.133 The Type of dirt collector, used in wagon is -
- (a) 2-way (b) 3-way
(c) Branch pipe of BP to DV (d) In BP
- 4.134 The trouble shooting for twin pipe system, AR broken is -
- (a) Isolate DV and release brake (b) Isolate DV, AR & release brake
(c) Release BC & open vent plug BC (d) By-pass AR
- 4.135 After isolating DV, handle should be -
- (a) Tightened with thread (b) Keep horizontal and tightened with wire
(c) Tightened with wire (d) Open the handle
- 4.136 The function of double release valve of the DV is -
- (a) To release the brake automatically
(b) To release the BC pressure
(c) To release the brake manually when a spring brief pull is given to the lever
(d) To release brake pipe pressure on AR chamber
- 4.137 The function of Non return valve used in air brake system is -
- (a) To prevent flow of BP (b) To prevent flow of air from AR to FP
(c) To prevent flow of Air from CR to BP (d) To prevent CR to be charged
- 4.138 The function of main valve is to supply requisite amount of pressure into the brake cylinder when-
- (a) BP pressure is reduced (b) FP pressure is reduced
(c) BP &FP is also reduced (d) BP pressure is reduced

4.139 The main valve in DV exhausts pressure from brake cylinder to atmosphere, when

- (a) BP pressure is reduced
- (b) BP pressure is raised
- (c) FP is reduced
- (d) FP pressure is raised

4.140 What type of grease to be used after cleaning and inspection all parts of slack adjuster?

- (a) Graphite grease
- (b) Servogan - 2
- (c) Servo- germ 4
- (d) None of the above

4.141 The function of Return spring provided in air brake cylinder is -

- (a) To push the spring out side the piston
- (b) To push the piston inside the cylinder
- (c) To push the deed lever
- (d) To push the control rod

4.142 Air Hoses are connected to-

- (a) Feed pipe cut of angle cocks only
- (b) Brake pipe cut of angle cocks only
- (c) Brake pipe & Feed pipe cut of angle cocks both
- (d) None of the above

4.143 If DV is having leakage -

- (a) Isolate DV
- (b) Close the isolating cock of the AR
- (c) Close the isolating cock of the BP/FP branch pipe
- (d) None of the above

4.144 'A' dimension is measured between-

- (a) SAB barrel & control rod head
- (b) SAB nut & control rod nut
- (c) Anchor pin & Control Rod head
- (d) None of the above

4.145 POH periodicity DV is done -

- (a) 6 year or 5 Lakh km which ever is earlier
- (b) 5 year or 5 Lakh km which ever is earlier
- (c) 4 year
- (d) 4 year or 4 Lakh km which ever is earlier

4.146 The vent hole, provided in the cut of angle cock to exhaust (when angle cock is closed)-

- (a) Air hose side air pressure into atmosphere
- (b) Twin pipe side air pressure to atmosphere
- (c) None of the above

4.147 In case air brake CC rake are used as mini rakes, Close circuit pattern will be followed with BPC being valid for –

- (a) 2000 Km or 20 days Whichever is earlier
- (b) 4500 Km or 20 days Whichever is earlier
- (c) 6000 Km or 30 days Whichever is earlier
- (d) 3000 Km or 10 days Whichever is earlier

CHAPTER 5

BOGIE

- 5.001 Standard thickness of UIC/CASNUB bogies composite brake block is-
- (a) 60 mm (b) 45 mm (c) 55 mm (d) 58 mm
- 5.002 Permissible thickness of UIC/CASNUB bogies composite brake block is -
- (a) 20 mm (b) 10 mm (c) 9.0 mm (d) 8 mm
- 5.003 Standard clearance between side bearers on UIC stock is-
- (a) 3 mm (b) 4 mm (c) 6 mm (d) 5 mm
- 5.004 Permissible clearance between side bearers on UIC stock is-
- (a) 6 mm (b) 4 mm (c) 3 mm (d) 2 mm
- 5.005 How many types of CASNUB version in Indian Railway have been used?
- (a) 4 (b) 6 (c) 10 (d) 7
- 5.006 What is the permissible variation in a group for load bearing & sunbber spring?
- (a) 2.0 mm (b) 3.0 mm (c) 4.0 mm (d) 5.0 mm
- 5.007 The length of brake block of BOXN wagon is –
- (a) 350 mm (b) 400 mm (c) Not specified (d) 450 mm
- 5.008 Variation in camber between any two spring on a bogie under load should not exceed –
- (a) 10 mm (b) 11 mm (c) 13 mm (d) 14 mm

- 5.009 What is the Std. thickness of brake block of BOXN wagon is –
(a) 52 mm (b) 54 mm (c) 56 mm (d) 58 mm
- 5.010 How many side frame fitted in CASNUB trolley / bogie?
(a) 2 (b) 1 (c) 3 (d) Nil
- 5.011 What is the axle load of CASNUB trolley expects CASNUB 22HS?
(a) 19.2 ton (b) 22.9 ton (c) 20.3 ton. (d) 20.9 ton
- 5.012 What is the new wheel diameter CASNUB 22 w (Retrofitted)?
(a) 1000 mm (b) 960 mm (c) 956 mm (d) 946 mm
- 5.013 What type of side bearers fitted in CASNUB 22w bogie?
(a) CC type (b) Roller type (c) EM Type
- 5.014 What type of side bearers fitted in CASNUB 22w(m) bogie?
(a) CC type (b) Spring type (c) Roller type
- 5.015 What type of pivot used in CASNUB 22w trolley?
(a) IRS type (b) spherical type (c) other type
- 5.016 What type of pivot used in CASNUB 22w(m), 22NL and other type of CASNUB trolley?
(a) IRS type (b) UIC spherical type (c) other type
- 5.017 What is the nominal leteral clearance between side frame & bolster in CASNUB 22HS?
(a) 18 mm (b) 10 mm (c) 25 mm (d) 22 mm

- 5.018 What is the wear limit of axle box/adopter sides (Cylindrical roller bearing) in CASNUB bogie?
- (a) 3 mm (b) 2 mm (c) 4 mm (d) 5 mm
- 5.019 What is the nominal lateral clearance between side frame & bolster in CASNUB 22W, 22WM, 22NL, 22NLB?
- (a) 16 mm (b) 11mm (c) 18 mm (d) 20 mm
- 5.020 What is the nominal longitudinal clearance between side frame & Axle box/adopter of 22W(M) bogie?
- (a) 5 mm (b) 8 mm (c) 10 mm (d) 12 mm
- 5.021 What is the nominal longitudinal clearance between side frame & Axle box/adopter 22W, 22W(Retro) trolley?
- (a) 2 mm (b) 4 mm (c) 6 mm (d) Nil
- 5.022 What is the nominal lateral clearance between side frame & axle box/adopter Casnub 22NL, 22NLB, 22HS bogie?
- (a) 18 mm (b) 16 mm (c) 22 mm (d) 25 mm
- 5.023 What is the standard wheel profile use in CASNUB bogie after the route radius?
- (a) 1 in 20 (b) 1 in 22 (c) 1 in 18 (d) 1 in 25
- 5.024 What is the condemning wheel diameter in all CASNUB versions?
- (a) 916 mm (b) 906 mm (c) 936 mm (d) 963 mm

- 5.025 What the condemning dimension of narrow jaw/wide jaw Adopter thrust shoulder?
(a) 0.4 mm (b) 0.6mm (c) 0.7 mm (d) 0.9 mm
- 5.026 What the condemning/wear limit of narrow jaw/wide jaw Adopter crown lugs?
(a) 2 mm (b) 4 mm (c) 6 mm (d) 8 mm
- 5.027 What is the leteral clearance between side frame & Axle box/adopter Casnub 22W, 22W(M)?
(a) 18 mm (b) 16 mm (c) 22 mm (d) 25 mm
- 5.028 What is the wear limit of axle box/adopter crown seat (Cylindrical roller bearing) in CASNUB bogie?
(a) 2 mm (b) 3 mm (c) 3.5 mm (d) 4.5 mm
- 5.029 What is the wear limit of axle box/adopter side lugs (Cylindrical roller bearing) in CASNUB bogie?
(a) 2 mm (b) 3 mm (c) 4 mm (d) 5 mm
- 5.030 What is the new renewal/dimension of axle box sides (Cylindrical roller bearing) in CASNUB bogie?
(a) 270 mm (b) 264 mm (c) 266 mm (d) 268 mm
- 5.031 What the worn/condemning dimension of axle box sides (Cylindrical roller bearing) in CASNUB bogie?
(a) 266 mm (b) 262 mm (c) 264 mm (d) 260 mm

- 5.032 What is the new renewal/dimension of axle box side lugs (Cylindrical roller bearing) in CASNUB bogie?
- (a) 136 mm (b) 134 mm (c) 130 mm (d) 132 mm
- 5.033 What is the new/renewal dimension of wide jaw adopter crown lugs?
- (a) 155mm (b) 156mm (c) 154 mm (d) 152 mm
- 5.034 What the worn/condemning dimension of axle box/adopter side lugs (Cylindrical roller bearing) in CASNUB bogie
- (a) 136 mm (b) 140 mm (c) 132 mm (d) 134 mm
- 5.035 What is the new renewal/dimension of axle box crown seat (Cylindrical roller bearing) in CASNUB bogie?
- (a) 32.5 mm (b) 36.5 mm (c) 37.5 mm (d) 38.5 mm
- 5.036 What the worn/condemning dimension of axle box crown seat (Cylindrical roller bearing) in CASNUB bogie?
- (a) 32 mm (b) 31mm (c) 33 mm (d) 34 mm
- 5.037 What is the new renewal/dimension of axle box crown lugs (Cylindrical roller bearing) in CASNUB bogie?
- (a) 160 mm (b) 159 mm (c) 158 mm (d) 157 mm
- 5.038 What is the new/renewal dimension of narrow jaw adopter crown lugs?
- (a) 154.5 mm (b) 155.5 mm (c) 156.5 mm (d) 157.5 mm

- 5.039 What is the wear limit of wide/narrow jaw adopter crown seat?
(a) 2.5 mm (b) 3.5 mm (c) 4.5 mm (d) 5.5 mm
- 5.040 What is the new/renewal dimension of wide jaw adopter bore seat to crown seat?
(a) 46.5mm (b) 47.5mm (c) 48.5 mm (d) 49.5 mm
- 5.041 What is the new/renewal dimension of narrow jaw adopter bore seat to crown seat?
(a) 25.2 mm (b) 26.2 mm (c) 28.5 mm (d) 27.5 mm
- 5.042 What is the new/renewal dimension of modified wide jaw adopter bore seat to crown seat?
(a) 20.5 mm (b) 25.5 mm (c) 30.5 mm (d) 35.5 mm
- 5.043 What the worn/condemning dimension of axle box crown lugs (Cylindrical roller bearing) in CASNUB trolley?
(a) 165 mm (b) 166 mm (c) 167 mm (d) 168 mm
- 5.044 Worm limit of wide jaw adopter bore seat to crown seat is-
(a) 45 mm (b) 247 mm (c) 48 mm (d) 49 mm
- 5.045 Worm/condemning limit of modified wide jaw adopter bore seat to crown seat is-
(a) 25 mm (b) 22 mm (c) 27 mm (d) 29 mm
- 5.046 Worm/condemning limit of narrow jaw adopter bore seat to crown seat is-
(a) 20 mm (b) 22.5 mm (c) 22.7 mm (d) 24.5 mm

- 5.047 How many type of adopters used in CASNUB trolley?
(a) 2 (b) 1 (c) 3 (d) 4
- 5.048 What is the wear limit of wide/narrow jaw adopter side lugs?
(a) 1.0 mm (b) 3.0 mm (c) 5.0 mm (d) 2.0 mm
- 5.049 New/Renewal dimension of wide jaw adopter side lugs is -
(a) 130 mm (b) 132 mm (c) 134 mm (d) 131mm
- 5.050 New/Renewal dimension of narrow jaw adopter side lugs is -
(a) 100 mm (b) 97 mm (c) 99 mm (d) 92 mm
- 5.051 Worm/condemning limit of wide jaw adopter side lugs is -
(a) 140 mm (b) 136 mm (c) 134 mm (d) 132 mm
- 5.052 Worm/condemning limit of narrow jaw adopter side lugs is -
(a) 101 mm (b) 102 mm (c) 103 mm (d) 104 mm
- 5.053 The condemning size of BK block of goods stock is -
(a) 30 mm (b) 10 mm (c) 20 mm (d) 15 mm
- 5.054 Free camber of 10 plated laminated spring of BOX type wagon is -
(a) $47+6/-0$ mm (b) 49 mm (c) 52 mm (d) 58 mm
- 5.055 Free camber of 13 plated laminated spring used to IRS type four-wheeled stock is –
(a) 75.5 mm (b) $76+6/-0$ mm (c) 78.2 mm (d) 51.5 mm

- 5.056 Free camber of 9(Nine) plated laminated spring used to CRT wagon is -
(a) 55 mm (b) 57 mm (c) 58 mm (d) 59 mm
- 5.057 Nominal free height of inner spring of Casnub bogie except 2HS is –
(a) 260 mm (b) 262 mm (c) 264 mm (d) 266 mm
- 5.058 Clearance along the length of shackle pin assembly with shackle plate, scroll Iron, spring eye and cotter for vacuum brake stock is -
(a) Max. 1.5 mm (b) Max 2.00 mm (c) Max 2.5-mm (d) Max. 3 mm
- 5.059 What is the clearance between shackle pin diameter and shackle plate hole?
(a) Max. 1.5 mm (b) max 2.00 mm (c) max 1.0-mm (d) max. 2.5 mm
- 5.060 What is the nominal thickness of elastomeric pad of Casnub bogie?
(a) 49 mm (b) 46 mm (c) 48 mm (d) 52 mm
- 5.061 Condemning size of elastomeric pad for Casnub bogie is -
(a) 44 mm (b) 43 mm (c) 42 mm (d) 40 mm
- 5.062 Nominal dimension of side bearer rubber pad for Casnub bogie is -
(a) 114 mm (b) 116 mm (c) 118 mm (d) 120 mm
- 5.063 Condemning size of side bearer rubber pad for Casnub bogie is -
(a) 111 mm (b) 110 mm (c) 109 mm (d) 108 mm

- 5.064 IS– spec of lubricant used to lubricate center pivot of the Casnub trolley?
(a) IS: 495 (b) IS: 449 (c) IS :455 (d) None of the above
- 5.065 Maintenance manual of Casnub bogie is –
(a) G 97 (b) G 80 (c) G 95 (d) G 72
- 5.066 The nominal inside length of the shackle for BOX bogie is –
(a) 330 ± 1 mm (b) $332+1/-0$ mm (c) 333 ± 2 mm (d) 325 ± 1 mm
- 5.067 New dimension of side frame anti-Rotation lug for all Casnub bogie is –
(a) 520 mm (b) 522 mm (c) 524 mm (d) 528 mm
- 5.068 New pedestal crown roof for 22NL/NLB/HS Casnub bogie is –
(a) 300 mm (b) 320 mm (c) 323 mm (d) 330 mm
- 5.069 For BOX/UIC wagons, condemning limit of lateral clearance between axle box lug and horn Check is -
(a) 25 mm (b) 28 mm (c) 23 mm (d) 20 mm
- 5.070 The new limit of lateral clearance available between spring buckle and horn gap stiffener for UIC bogie is –
(a) 28 mm (b) 25 mm (c) 30 mm (d) 32 mm
- 5.071 What is the wear limit of axle box crown lugs (cylindrical roller bearing) in CASNUB bogie?
(a) 2 mm (b) 3 mm (c) 4 mm (d) 5 mm

5.072 Thickness of 10-platted bearing spring plate for BOX bogie is –

- (a) $16+0.32/-0.24$ mm (b) $18+3.0/-2.0$ (c) $15+0.32/-0.24$ (d) $17+0.32/-0.24$

5.073 For BOX/ UIC wagons, the new limit of nominal lateral clearance between axle box lug and horn Check is -

- (a) 25 mm (b) 23 mm (c) 28 mm (d) 20 mm

5.074 Condemning dimension of side frame anti-Rotation lug for all Casnub bogies is –

- (a) 530 mm (b) 522 mm (c) 528 mm (d) 524 mm

5.075 Length of 10 platted bearing spring for BOX bogie is –

- (a) 1205 ± 3 mm (b) 1200 ± 3 mm (c) 1155 ± 3 mm (d) 1185 ± 3 mm

5.076 Size of eye 10 platted bearing spring for BOX bogie is –

- (a) $34+1/-0$ mm (b) 33 ± 2 mm (c) $36+1/-0$ mm (d) 38 ± 2 mm

5.077 Wear limit of pedestal sides for Casnub bogie is –

- (a) 1 mm (b) 2 mm (c) 4 mm (d) None of the above

5.078 New dimension of all Casnub bogie crown sides is –

- (a) 151 mm (b) 152 mm (c) 154 mm (d) 155 mm

5.079 New dimension of 22W, 22W(M) Casnub bogie pedestal sides is –

- (a) 100 mm (b) 105 mm (c) 110 mm (d) None of the above

- 5.080 New dimension of 22 NL/NLB/HS Casnub bogie pedestal sides is –
(a) 80 mm (b) 85 mm (c) 81 mm (d) 82 mm
- 5.081 Wear limit of pedestal crown roof for Casnub bogie is –
(a) 4 mm (b) 5 mm (c) 6 mm (d) 3 mm
- 5.082 New pedestal crown roof for 22W(M) Casnub bogie is –
(a) 310 mm (b) 318 mm (c) 320 mm (d) 322 mm
- 5.083 Distance between new pedestal jaw (long) of Casnub bogie is –
(a) 230 mm (b) 232 mm (c) 234 mm (d) 236 mm
- 5.084 Wear limit of pedestal jaw (long) of 22NL/NLB/HS Casnub bogie is –
(a) 2 mm (b) 3 mm (c) 4 mm (d) 5 mm
- 5.085 Distance between new pedestal jaw (short) of 22NL/NLB/HS Casnub bogie is –
(a) 182 mm (b) 186 mm (c) 188 mm (d) 190 mm
- 5.086 New dimension of pedestal jaw for Casnub 22W, 22W(Retro) bogie is –
(a) 270 mm (b) 272 mm (c) 268 mm (d) 190 mm
- 5.087 New dimension of pedestal jaw for Casnub 22W(M) bogie is –
(a) 270 mm (b) 274 mm (c) 278 mm (d) 290 mm
- 5.088 Wear limit of crown sides for Casnub bogie is –
(a) 4.0 mm (b) 3.0 mm (c) 2.0 mm (d) 5.0 mm

- 5.089 New dimensions of bolster column inner gibs of all Casnub bogies are –
(a) 144 mm (b) 136 mm (c) 138 mm (d) 132 mm
- 5.090 Wear limit of bolster column inner gibs of all Casnub bogies are –
(a) 2.0 mm (b) 5.0 mm (c) 6.0 mm (d) 8.0 mm
- 5.091 New dimensions of over bolster land surface of all Casnub bogies are –
(a) 444 mm (b) 446 mm (c) 448 mm (d) 450 mm
- 5.092 New dimension of over rotation stop lugs of all Casnub bogies are –
(a) 516 mm (b) 518 mm (c) 520 mm (d) 522 mm
- 5.093 Wear limit of bolster land surface of all Casnub bogies are –
(a) 2.0 mm (b) 3.0 mm (c) 5.0 mm (d) 7.0 mm
- 5.094 Wear limit of bolster rotation stop lug of all Casnub bogies are –
(a) 1.0 mm (b) 2.0 mm (c) 3.0 mm (d) 5.0 mm
- 5.095 Nominal free height of snubber spring of Casnub bogie except 22 HS is –
(a) 260 mm (b) 270 mm (c) 282 mm (d) 294 mm
- 5.096 Nominal free height of inner spring of Casnub 22 HS bogie is –
(a) 261 mm (b) 252 mm (c) 243 mm (d) 246 mm
- 5.097 Nominal free height of sunbber spring of Casnub 22 HS bogie is –
(a) 291 mm (b) 294 mm (c) 296 mm (d) 293 mm

- 5.098 New dimension of bolster column outer gibs of Casnub bogie is -
(a) 224 mm (b) 234 mm (c) 243 mm (d) 246 mm
- 5.099 New dimension of bolster column outer gibs of Casnub 22HS bogie is –
(a) 232 mm (b) 236 mm (c) 241 mm (d) 243 mm
- 5.100 Wear limit of bolster column outer gibs of Casnub bogie is –
(a) 2.0 mm (b) 3.0 mm (c) 5.0 mm (d) 6.0 mm
- 5.101 New dimension of friction shoes wedge block of Casnub bogie is –
(a) 60 mm (b) 62 mm (c) 63 mm (d) 61 mm
- 5.102 Condemning dimension of friction shoes wedge block of Casnub bogie is –
(a) 54 mm (b) 56 mm (c) 58 mm (d) 8.0 mm
- 5.103 Wear limit of vertical surface in friction shoes wedge block of Casnub bogie is –
(a) 5.0 mm (b) 6.0 mm (c) 7.0 mm (d) 8.0 mm
- 5.104 Wear limit of slope surface in friction shoes wedge block of Casnub bogie is –
(a) 1.0 mm (b) 2.0 mm (c) 3.0 mm (d) 4.0 mm
- 5.105 Nominal free height of outer spring of Casnub bogie is –
(a) 260 mm (b) 262 mm (c) 264 mm (d) 266 mm

5.106 What type of side bearers fitted in CASNUB 22HS trolley?

- (a) Metal CC type (b) Spring loaded CC type side bearer & PU type
(c) Roller type (d) none of the above

5.107 Which types of steel are used in side frame column friction plates of Casnub bogie?

- (a) Mild steel (b) Carbon steel
(c) Silico manganese steel (d) None of the above

CHAPTER 6

VACUUM

- 6.01 What is the period/interval of over hauling Vacuum Brake cylinder?
(a) 15-24 months (b) 18-24 months (c) 24-36 months (d) none of the above
- 6.02 What is the validity of BPC for vacuum brake system?
(a) 1000 Km. (b) 800 Km. (c) 1200 Km. (d) 600 Km.
- 6.03 The maximum Leakage rate while turning out Loco from shed-
(a) 7 Cm/Min. (b) 5 Cm/Min. (c) 10 Cm/Min. (d) 8 Cm/Min.
- 6.04 The atmospheric air pressure is -
(a) 1.303 Kg/ Cm² (b) 2.5 Kg/ Cm² (c) 1.9 Kg/ Cm² (d) 1.03 Kg/Cm²
- 6.05 The vacuum brake system is dependent on 51cm of vacuum which given pressure of -
(a) 0.9 kg/ Cm² (b) 0.7 kg/ Cm² (c) 0.1 kg/ Cm² (d) 02 kg/ Cm²
- 6.06 The air pressure required in loco for leakage test in vacuum brake system is -
(a) 2.0 kg/ Cm² (b) 5.0 kg/ Cm² (c) 7.0 kg/ Cm² (d) 10.0 kg/ Cm²
- 6.07 The capacity of reservoir for 560- mm 'F' type vacuum cylinder is -
(a) 0.1596 cu.m (b) 0.226 cu.m (c) 0.1896 cu.m (d) 0.1926 cu.m
- 6.08 The total height of the pan for 457-mm 'F' type vacuum cylinder is -
(a) 150 mm (b) 160 mm (c) 140 mm (d) 130 mm

- 6.09 Vacuum cylinder is divided into two chambers by -
(a) Release valve (b) Piston rod (c) Rolling ring (d) Joint ring
- 6.10 In four wheels Tank wagon, the diameter & No. of vacuum cylinder is/are -
(a) 457 mm 'E' type-2 (b) 457 mm 'E' type-I (c) 533 mm 'E' type-I
- 6.11 During creation of Vac./Application of brakes, the 'F' type vacuum cylinder of 560-mm diameter reservoir is directly connected to -
(a) Release valve (b) train pipe (c) Upper chamber (d) Lower chamber
- 6.12 The no. of cylinder in 533 mm diameter 'F' type in BRH wagon is -
(a) 2 (b) 3 (c) 4 (d) 1
- 6.13 The Colour of BPC of vacuum brake system is -
(a) Red (b) Green (c) Yellow (d) Pink
- 6.14 For inspection of hose pipe & siphon pipe it is essential to create vacuum is -
(a) 460 mm (b) 400 mm (c) 225 mm (d) 255 mm
- 6.15 The type of SAB used in vacuum brake wagon is -
(a) DRV-2-600 (b) DRV-2-450 (c) DRV-2-300 (d) None of the above
- 6.16 The diameter of rolling ring for 560 mm 'F' type vacuum cylinder is -
(a) 13.1-17.5 mm (b) 13.1-13.5 mm (c) 12.1-127.5 mm (d) 10.1-11.2 mm
- 6.17 Which type of vacuum cylinder used in BOB, BOBS, BOBX wagon?
(a) E-457 type (b) E- 533 type (c) F- 560 type (d) F-610 type

- 6.18 Which type of vacuum cylinder used in all 16-ton axles loads wagons except BVG, BVH?
(a) E- 457 type (b) E- 533 type (c) F-533 type (d) F-560 type
- 6.19 560-mm vacuum cylinder means it is diameter of -
(a) Barrel (b) Piston head (c) Lower pan (d) Vac. cylinder
- 6.20 The machine required for testing of vacuum brake system -
(a) Compressor (b) Vacuum pump (c) Exhauster (d) AC machine
- 6.21 For testing of loco vacuum, diameter of hole of the test plate is -
(a) 6mm (b) 7.5mm (c) 8 mm (d) 8.5 mm
- 6.22 The validity period for examined empty UIC rake/Vacuum brake BPC to reach the loading point is -
(a) One day (b) Two day (c) Three day (d) Four day
- 6.23 The size of ball valve passage in vacuum brake cylinder is -
(a) 6.0 mm (b) 8.0 mm (c) 10 mm (d) 11 mm
- 6.24 In vacuum brake, Minimum clearance bolster stuffing box & crank shaft after destruction of vacuum is -
(a) 35 mm (b) 20 mm (c) 25 mm (d) 30 mm
- 6.25 What is the shape of the barrel in vacuum brake cylinder?
(a) Square (b) Semi Sparical (c) Sparical (d) Cylindrical
- 6.26 SAB DRV -2 600 is fitted on-
(a) WGSCM (b) BOX (c) WGS (d) BKH

- 6.27 In Which type of vacuum cylinder it is easy to change the rolling ring is?
(a) 'F' type (b) 'E' type (c) 'B' type (d) None of the above
- 6.28 Standard dimension 'A' in SAB on BOX wagons is -
(a) 50 mm (b) 52 mm (c) 55 mm (d) 85 mm
- 6.29 Permissible dimension 'A' on BOX wagons is -
(a) 52 mm (b) 50 mm (c) 55 mm (d) 51 mm
- 6.30 Standard dimension of piston stroke in empty condition in BOX wagon is -
(a) 150 mm (b) 130 mm (c) 90 mm (d) 110 mm
- 6.31 Standard dimension of Piston stroke of loaded condition in Box-wagon is -
(a) 130 mm (b) 150 mm (c) 110 mm (d) 180 mm
- 6.32 The BPC of ballast train is valid for -
(a) 3 day (b) 7 day (c) 15 day (d) 30 day
- 6.33 What minimum distance is being maintained between adjacent two tracks for intensive examination?
(a) At least 3m (b) At least 3.5 m (c) At least 4.0 m (d) At least 2.0 m
- 6.34 What is the allowed leakage rate of one wagon in vacuum brake in one min.?
(a) Not more then 70 mm (b) Not more then 20 mm
(c) Not more then 50 mm (d) Not more then 30 mm

- 6.35 What is the allowed leakage rate of one rake in vacuum brake in one min.?
- (a) Not more than 100 mm/min. (b) Not more than 130 mm/min.
(c) Not more than 150 mm/min. (d) Not more than 180 mm/min.
- 6.36 In the 'F' type vacuum cylinder of 560-mm diameter release valve used is -
- (a) Double branch release valve 'F' (b) Single branch release valve 'E'
(c) Single branch release valve 'F' (d) None of the above
- 6.37 In the 'E' type vacuum cylinder of 533-mm diameter release valve used is -
- (a) Single branch release value 'E' (b) Single branch release value 'F'
(c) Double branch release value 'E' (d) None of the above
- 6.38 In working train, what is the standard level of vacuum in goods train?
- (a) 53 Cm and 47 Cm (b) 50 Cm and 44 Cm
(c) 55 Cm and 50 Cm (d) 46 Cm and 38 Cm
- 6.39 In Box wagon, the diameter & no. of vacuum cylinder is/are -
- (a) 610 mm 'E' type-2 (b) 610 mm 'F' type-2
(c) 560 mm 'F' type-2 (d) 533 mm 'F' type-2
- 6.40 In vacuum brake system the train pipe is connected by -
- (a) Grip seal joint (b) Flange joint
(c) Thread coupling & 'T' joint (d) Welding joint

- 6.41 Swan neck is fitted on train pipe at -
- (a) Centre of train pipe (b) Joint of train pipe
(c) None of the above (d) End of train pipe
- 6.42 Vacuum cylinder is divided between two chambers are -
- (a) Left chamber & Right chamber (b) Upper chamber & lower chamber
(c) Chamber 90 Degree & 60-degree (d) Chamber 90 degree & 90-degree chamber
- 6.43 The vacuum brake testing procedure is called as –
- (a) Single car-testing (b) Balance vacuum testing
(c) Ultra sound testing (d) Single wagon test ring
- 6.44 The hose pipe are connected to each other with the help of -
- (a) Coupling head (b) Palm end
(c) Universal coupling (d) None of the above
- 6.45 Which type of vacuum cylinder use in BWL, BWT wagon is -
- (a) 533m 'F' type (b) 533 mm 'E' type
(c) 560 mm 'F' type (d) 610mm 'F' type
- 6.46 The Syphon pipe is fitted on vacuum brake -
- (a) Between release valve & train
(b) Between release valve & vac. reservoir
(c) Vac. reservoir & van reservoir
(d) None of the above

6.47 In vacuum brake at release position, free lift is essential between -

- (a) Stuffing box & crank arm head of 25mm
- (b) 13 mm between Fork of crank arm & piston rod cotter
- (c) Piston rod & pin of 25 mm
- (d) None of the above

NOTES

CHAPTER 7

UNDER FRAME/ BODY

- 7.01 The inside length (riveted) tolerance permitted in the new wagon construction is -
(a) ± 5 mm (b) ± 3 mm (c) ± 4.5 mm (d) ± 2.5 mm
- 7.02 The inside length (welded) tolerance permitted in the new wagon construction is -
(a) $+8/-3$ mm (b) $+7/-3$ mm (c) $+5/-3$ (d) $+3/-0$ mm
- 7.03 The inside width tolerance are permitted in the new wagon construction is -
(a) ± 3 mm (b) ± 5 mm (c) ± 7 mm (d) ± 2 mm
- 7.04 The inside height tolerance permitted in the new wagon construction is -
(a) ± 5 mm (b) ± 3.5 mm (c) ± 3 mm (d) ± 4 mm
- 7.05 In new wagon construction what shall be the tolerance between bogie pivot centers (riveted)?
(a) ± 1 mm (b) ± 1.5 mm (c) ± 2 mm (d) ± 3 mm
- 7.06 In new wagon construction what shall be the tolerance between bogie pivot centers (welded)?
(a) $+5/-2$ mm (b) $+3/-2$ mm (c) $+7/-5$ mm (d) $+15/-0$ mm
- 7.07 In new wagon construction what is the door opening (vertical or horizontal) tolerances permitted?
(a) $+2/-0$ mm (b) $+0/-3$ mm (c) $+3/-0$ mm (d) $+5/-4$ mm

- 7.08 In new wagon, what is the door length tolerance permitted?
(a) +2/-3 mm (b) +4/-3 mm (c) +5/-0 mm (d) +0/-5 mm
- 7.09 In new wagon, what is the door width tolerance permitted?
(a) +5/-0mm (b) +0/-5 mm (c) +0/-3 mm (d) +3/-0 mm
- 7.10 What shall be tolerance permitted between door centerline to centerline of door hinge in a new wagon?
(a) +2/-1 mm (b) +2.5/-1.5 mm (c) ± 1.5 mm (d) ± 2.5 mm
- 7.11 What shall be the tolerance on dimensions of length of barrel measured over the center of non-pressure tank wagon?
(a) +10/-5 mm (b) +10/-3 mm (c) +15/-10 mm (d) +5/-10 mm
- 7.12 What shall be the tolerance of non-pressure tank wagon barrel diameter including ovality?
(a) ± 3 mm (b) ± 4 mm (c) ± 5 mm (d) None of the above
- 7.13 What shall be the tolerance on dimension of inside dia of main hole of non- pressure tank wagon barrels?
(a) ± 4 mm (b) ± 5 mm (c) ± 3 mm (d) ± 3.5 mm
- 7.14 The box bogie is designed for an axle load is -
(a) 22.1 t (b) 20.3 t (c) 21.9 t (d) 16.8 t
- 7.15 How many bearing springs used in primary suspension for UIC bogie -
(a) 4 (b) 6 (c) 8 (d) 10

- 7.16 For UIC trolley, the thickness of sole plate is -
- (a) 4 mm (b) 6 mm (c) 8 mm (d) 10mm
- 7.17 What type of electrode is used in drew bar reclamation?
- (a) B & E type (b) D & B type (c) D & E type (d) A & E type
- 7.18 The primary lock clearance of BOBR door is –
- (a) 3 mm (b) 5 mm (c) 7 mm (d) 4 mm

NOTES

CHAPTER 8

TANK WAGON

- 8.01 Pay load of BTPN tank wagon is –
(a) 58.88 tons (b) 54.28 tons (c) 55.80 tons (d) 52.3 tons
- 8.02 Axle load of BTPN tank wagon is –
(a) 20.32 tons (b) 22.35 tons (c) 21.35 tons (d) 25.22 tons
- 8.03 Cleaning of bitumen barrel is carried out with –
(a) Kerosene oil (b) patrol (c) ledium (d) None of the above
- 8.04 Inspection of thickness of H₂SO₄ barrel carried out with –
(a) D- meter (b) C- meter (c) L- meter (d) MN – meter
- 8.05 Barrel length of BTPN tank wagon is –
(a) 11460 mm (b) 11550 mm (c) 11458 mm (d) 12100 mm
- 8.06 Barrel diameter of BTPN tank wagon is –
(a) 2860 mm (b) 2850 mm (c) 2840 mm (d) 2830 mm
- 8.07 Distance between copular to coupler of BTPN tank wagon is –
(a) 12420 mm (b) 12560 mm (c) 12600 mm (d) 12345 mm
- 8.08 During Hydraulic testing of master valve of tank wagon, the water to be filled up to be –
(a) 130 Cm (b) 150 Cm (c) 180 Cm (d) 200 Cm

- 8.09 Thickness of rubber lining of fragile disc and safety bent is –
(a) 3 mm (b) 5 mm (c) 4 mm (d) 6 mm
- 8.10 Distance between Headstock to Headstock of BTPN tank wagon is –
(a) 11499 mm (b) 11569 mm (c) 11491 mm (d) 11591 mm
- 8.11 What is the inside barrel diameter of the TPGLR tank wagon?
(a) 2100 mm (b) 2230 mm (c) 2300 mm (d) 2330 mm
- 8.12 Length over Headstock of the TPGLR tank wagon is -
(a) 9252 mm (b) 8382 mm (c) 9632 mm (d) 4326 mm
- 8.13 Tare weight of the TPGLR tank wagon is -
(a) 17.82 t (b) 17.32 (c) 18.2 t (d) 17.1 t
- 8.14 The mechanical code of bogie Patrol tank wagon fitted with pneumatic brake is -
(a) BTPAN (b) LBM (c) LBM (d) LCT
- 8.15 The mechanical code of bogie Liquefied anhydrous ammonia gas tank wagon is -
(a) BTAL & BTALN (b) TBS & BTSA (c) AST & TSMBA (d) TBT & MBTOX
- 8.16 The mechanical code of caustic soda tank wagon is -
(a) CTB & CTBS (b) TCS & BTCS (c) THA & BTCS (d) TCS & MBTS
- 8.17 The mechanical code of Lubricating oil tank wagon is -
(a) MBTOV (b) TORX (c) TRP (d) BTCS

- 8.18 The mechanical code of bitumen tank wagon type is -
(a) TBT (b) TBAT (c) TRP (d) TPR
- 8.19 No of safety valves fitted in sulphuric acid tank is -
(a) One (b) Two (c) Three (d) None of the above
- 8.20 No. of pressure release valve fitted in sulphuric acid tank is -
(a) One (b) Two (c) Three (d) None of the above
- 8.21 No. of safety valve fitted in liquefied petroleum gas tank is -
(a) One (b) Two (c) Three (d) None of the above
- 8.22 Codal life of Tank wagon is -
(a) 35 year (b) 45 year (c) 50 year (d) 25 year
- 8.23 No of safety vent with frangible disc fitted in sulphuric acid tank wagon is -
(a) One (b) Two (c) Three (d) None of the above
- 8.24 How many no of safety vent with frangible disc fitted in liquid chlorine tank wagon is -
(a) One (b) Two (c) Three (d) None of the above
- 8.25 What is the hydraulic test pressure in the barrel of chlorine tanks wagon?
(a) 43.7 kg/ Cm² (b) 47.8 kg/ Cm² (c) 41.23 kg/ Cm² (d) 49.93 kg/ Cm²
- 8.26 What is the hydraulic test pressures in a barrel of LPG tanks wagon?
(a) 26.36kg/ Cm² (b) 23.7 kg/ Cm² (c) 28.33 kg/ Cm² (d) 33.23 kg/ Cm²

- 8.27 In the tank wagon, close the master valve after -
(a) Un loading (b) Loading (c) Running (d) None of the above
- 8.28 In the tank wagon, close the vapour extractor cock after -
(a) Un loading (b) Loading (c) Running (d) None of the above
- 8.29 What is the estimated weight of Phosphoric acid tank barrel?
(a) 6.54 t (b) 7.54 t (c) 7.12 t (d) 8.27 t
- 8.30 The diameter of master valve of BTPN tank wagon is –
(a) 90 mm (b) 100 mm (c) 110 mm (d) 200 mm
- 8.31 What is the density of LPG at 55° C?
(a) 0.470 to 0.499 (b) 0.499 to 0.677 (c) 0.677 to 0.899 (d) 0.899 to 0.999
- 8.32 Thickness of barrel plate (Cylindrical portion) of BTPGL tank barrel is-
(a) 10 mm (b) 12 mm (c) 15 mm (d) 18 mm
- 8.33 Thickness of barrel plate (Dished ends) of BTPGL tank barrel is –
(a) 10 mm (b) 12 mm (c) 15 mm (d) 17 mm
- 8.34 Volumetric capacity of BTALN tank barrel is –
(a) 60.66 Cu.m (b) 66.60 Cu.m (c) 70.33 Cu.m (d) 71.12 Cu.m
- 8.35 Corrosion allowance of BTALN tank barrel is –
(a) 1.0 mm (b) 1.5 mm (c) 2.0 mm (d) 2.5 mm

- 8.36 What type of brake system used in BTAL tank wagon?
(a) Air brake (b) Vacuum brake (c) Bogie mounted brake (d) Duel brake
- 8.37 Volumetric capacity of Liquefied Chlorine tank barrel is –
(a) 15.22 Cu.m (b) 12.175 Cu.m (c) 14.22 Cu.m (d) 17.15 Cu.m
- 8.38 Overall width of Liquid Chlorine tank wagon is –
(a) 2708 mm (b) 2705 mm (c) 2805 mm (d) 2900 mm
- 8.39 Working pressure of BTPN safety valve is –
(a) 1.4 Kg/cm² (b) 4.1 Kg/cm² (c) 2.1 Kg/cm² (d) 1.2 Kg/cm²
- 8.40 Bogie centers of Phosphoric acid tank wagon are –
(a) 8000 mm (b) 8400 mm (c) 8800 mm (d) 8900 mm
- 8.41 Interval of POH in four-wheel tank wagon is –
(a) 4.5 and 3.5 year (b) 4.0 and 3.5 year
(c) 3.0 and 4.0 year (d) 4.0 and 5.0 year
- 8.42 Interval of POH in TCL and THA tank wagon is –
(a) 2.0 year (b) 5.5 year
(c) 3.5 year (d) 4.0 year
- 8.43 Interval of ROH in BTPN tank wagon is –
(a) 16 month (b) 20 month
(c) 18 month (d) 24 month

- 8.44 Cleaning of H_2SO_4 tank wagon is carried out with –
- (a) 1.9 to 2 % Sodium phosphate (b) 0.5 to 1 % Sodium phosphate
(c) 2 to 3% Sodium phosphate (d) None of the above
- 8.45 Air tightens test pressure of master valve is –
- (a) 0.35 to .056 kg/ Cm^2 (b) 0.45 to 0.65 kg/ Cm^2
(c) 0.65 to 0.75 kg/ Cm^2 (d) None of the above
- 8.46 What is the type of coupler used in BTPGL tank wagon?
- (a) Screw coupling (b) HT coupling
(c) NT coupling (d) Transition CBC Knuckle type
- 8.47 Hydraulic Testing of BTAL, BTALN tank barrel is carried at –
- (a) 58 kg/ Cm^2 (b) 55.5 kg/ Cm^2
(c) 56.3 kg/ Cm^2 (d) 59.0 kg/ Cm^2
- 8.48 Hydraulic Testing of TCL tank barrel is carried out at –
- (a) 44.5 kg/ Cm^2 (b) 48.3 kg/ Cm^2
(c) 47.3 kg/ Cm^2 (d) 43.7 kg/ Cm^2
- 8.49 What is the location of safety valves fitted in liquefied petroleum gas tank wagon?
- (a) Inside dome (b) Outside dome
(c) Outside on barrel (d) None of the above

8.50 What is the location of safety valve fitted in caustic soda tank wagon?

- (a) Inside dome
- (b) Outside dome
- (c) Outside on barrel
- (d) None of the above

8.51 What is the location of safety valve fitted in sulphuric acid tank wagon?

- (a) Inside dome
- (b) Outside dome
- (c) Outside on barrel
- (d) None of the above

NOTES

CHAPTER 9

CONTAINER WAGON

- 9.01 Condemning limit of BLC wheel set is –
(a) 900 mm (b) 800 mm (c) 670 mm (d) 780 mm
- 9.02 Maximum height of side frame from Rail level of container bogie type LCCF 20 (C) trolley is –
(a) 851 mm (b) 715 mm (c) 932 mm (d) 786 mm
- 9.03 In BLC wagon, width over sole bar at centre line wagon is –
(a) 2200 mm (b) 2100 mm (c) 2150 mm (d) 2180 mm
- 9.04 For lifting the container, force required to lift the container on automatic twist lock is-
(a) 1050 Kg (b) 1000 Kg (c) 1100 Kg (d) 11590 Kg
- 9.05 How many load side bearers are fitted in BLC wagon?
(a) 4 (b) 6 (c) 5 (d) 2
- 9.06 What is the measurement of 'A' dimension of BFKI?
(a) 65 ± 5 mm (b) 67 ± 3 mm (c) $60+2$ mm (d) $58+3$ mm
- 9.07 In place of empty load box what device is used in BLC wagon?
(a) BSD (b) LSD (c) SDF (d) SAB

- 9.08 As per RDSO standard what shall be the Max. Allowed speed of BFKI?
(a) 75 Km/h (b) 80 Km/h (c) 100 Km/h (d) 110Km/h
- 9.09 What is the material specification of BLC wagon trolley?
(a) Cast steel (b) Low cast steel (c) Steel (d) Micro steel
- 9.10 At the time of load distribution what is the percentage of load come on centre pivot?
(a) 10% (b) 15% (c) 20% (d) 25%
- 9.11 Length of over Slack less draw bar for B-car of BLC wagon is –
(a) 14566 mm (b) 13156 mm (c) 12212 mm (d) 14763 mm
- 9.12 What shall be maximum length of container platform in BLC wagon?
(a) 30 feet (b) 28 feet (c) 299 feet (d) 32 feet
- 9.13 The standard height of platform for BLC wagon from Rail level is –
(a) 1010 mm (b) 1015 mm (c) 1009 mm (d) 1100 mm
- 9.14 The axle load capacity of BLC wagon is –
(a) 20.10 ton. (b) 20.32 ton. (c) 21.10 ton. (d) 23.10 ton.
- 9.15 The tare weight of A-car of BLC wagon is –
(a) 21.20 ton. (b) 19.10 ton. (c) 19.80 ton. (d) 20.22 ton.
- 9.16 The tare weight of B- car of BLC wagon is –
(a) 18.10 ton. (b) 19.10 ton. (c) 19.80 ton. (d) 20.20 ton.

- 9.17 Length of over Headstock to Headstock for A-car of BLC wagon is –
(a) 13650 mm (b) 13625 mm (c) 13555 mm (d) 13365 mm
- 9.18 In BLC wagon, height of slackness drowbar system from Rail level is –
(a) 890 mm (b) 848 mm (c) 845 mm (d) 910 mm
- 9.19 Length of over coupler for A-car of BLC wagon is –
(a) 14566 mm (b) 14556 mm (c) 14655 mm (d) 14255 mm
- 9.20 How many automatic twist locks used in BLC wagon?
(a) 6 (b) 8 (c) 10 (d) 12
- 9.21 Distance between bogie centers of BLC wagon is –
(a) 9678 mm (b) 9687 mm (c) 9765 mm (d) 9675 mm
- 9.22 Height of side frame bottom from Rail level of container bogie type LCCF 20 (C) trolley is –
(a) 149 mm (b) 156 mm (c) 178 mm (d) 123 mm
- 9.23 Rake carrying capacity of the BLC wagon is –
(a) 40 wagons 90 TEUs (b) 45 wagons 90 TEUs
(c) 40 wagons 80 TEUs (d) 48 wagons 90 TEUs
- 9.24 Which type of side bearer arrangement used in BLC trolley?
(a) Electromatic (b) constant contact type
(c) Spring loaded side bearer (d) None of the above

- 9.25 Which type of trolley used in BLC wagon?
- (a) UIC trolley (b) Cast steel bogie type LCCF 20 (C)
(c) IRS trolley (d) Diamond frame trolley
- 9.26 For automatic locking & for lifting of automatic twist lock how much force is Kg required, respectively?
- (a) 600 & 1000 Kg (b) 800 & 1200 Kg
(c) 1000 & 500 Kg (d) 500 & 1350 Kg
- 9.27 What type of roller bearing used in BLC wagon?
- (a) Cartage type (b) tapered two-row cartridge roller bearing
(c) Spherical type (d) plan bearing
- 9.28 What is the loading capacity of containers in BLC wagon?
- (a) Two 20' or one 40' (b) Two 22' or one 45'
(c) Three 15' or two 20' (d) Two 20' or one 45'
- 9.29 Name the type of coupling used in BLC wagon?
- (a) CBC & SLD (b) HT CBC
(c) Screw coupling (d) Slackness draw bars

CHAPTER 10

ABBREVIATIONS

WRITE THE FULL FORMS OF THE FOLLOWING: -

- 1 ART
- 2 AAR
- 3 AR
- 4 ARME
- 5 BKH
- 6 BVZI
- 7 BOY
- 8 BOBX
- 9 BOBC
- 10 BOXC
- 11 BOXR
- 12 BOXS
- 13 BOXT
- 14 BOI
- 15 BC
- 16 BCXR
- 17 BCXT
- 18 BVGT
- 19 BVGC
- 20 BTA

21	BTE
22	BTK
23	BTL
24	BTM
25	BTP
26	BTV
27	BTPN
28	BTAP
29	BTALN
30	BOBR
31	BLC
32	BC
33	BPC
34	BP
35	BWL
36	CT
37	CRT
38	CS
39	CLW
40	C&W
41	CR
42	CDD
43	CRS
44	CME

45	CRSE
46	CPB
47	CAMTECH
48	CRB
49	COFMOW
50	CRIS
51	CBC
52	CTRB
53	DV
54	D&A
55	DLW
56	DMRC
57	DCW
58	ELB
59	FOIS
60	FP
61	FO .
62	GM
63	HB
64	HSD
65	HDD
66	IRCON
67	ICF
68	IVRS

- 69 IRCA
- 70 IRWO
- 71 IRFC
- 72 IRIMEE
- 73 KRC
- 74 K
- 75 LHB
- 76 LDO
- 77 MBTSA
- 78 OP
- 79 ODC
- 80 PEV
- 81 PEASD
- 82 RDSO
- 83 PRS
- 84 RCF
- 85 RITES
- 86 RSC
- 87 RRB
- 88 SWTR
- 89 SMF
- 90 SAB
- 91 SPTM
- 92 TPGLR

- 93 **THA**
- 94 **TCL**
- 95 **UTS**
- 96 **V**
- 97 **VB**
- 98 **WAP**
- 99 **WT**
- 100 **WWP**

NOTES

ANSWERS: -**GENERAL**

1.01 – (c)	1.02 – (a)	1.03 – (d)	1.04 – (b)	1.05 – (b)	1.06 – (b)
1.07 – (b)	1.08 – (b)	1.09 – (a)	1.10 – (b)	1.11 – (c)	1.12 – (c)
1.13 – (b)	1.14 – (d)	1.15 – (a)	1.16 – (c)	1.17 – (c)	1.18 – (c)
1.19 – (b)	1.20 – (b)	1.21 – (b)	1.22 – (b)	1.23 – (a)	1.24 – (c)
1.25 – (a)	1.26 – (b)	1.27 – (c)	1.28 – (c)	1.29 – (d)	1.30 – (c)
1.31 – (a)	1.32 – (d)	1.33 – (b)	1.34 – (b)	1.35 – (c)	1.36 – (b)
1.37 – (c)	1.38 – (a)	1.39 – (c)	1.40 – (a)	1.41 – (c)	1.42 – (c)
1.43 – (c)	1.44 – (c)	1.45 – (a)	1.46 – (c)	1.47 – (b)	1.48 – (b)
1.49 – (b)	1.50 – (c)	1.51 – (b)	1.52 – (c)	1.53 – (a)	1.54 – (c)
1.55 – (a)	1.56 – (b)	1.57 – (b)	1.58 – (d)	1.59 – (d)	1.60 – (c)
1.61 – (b)	1.62 – (a)	1.63 – (d)	1.64 – (a)	1.65 – (b)	1.66 – (c)
1.67 – (a)	1.68 – (b)	1.69 – (b)	1.70 – (c)	1.71 – (a)	1.72 – (b)
1.73 – (c)	1.74 – (c)	1.75 – (b)			

CBC & DRAFT GEAR

2.01 – (d)	2.02 – (b)	2.03 – (d)	2.04 – (c)	2.05 – (c)	2.06 – (b)
2.07 – (c)	2.08 – (c)	2.09 – (c)	2.10 – (d)	2.11 – (a)	2.12 – (c)
2.13 – (b)	2.14 – (b)	2.15 – (d)	2.16 – (b)	2.17 – (c)	2.18 – (a)
2.19 – (b)	2.20 – (a)	2.21 – (b)	2.22 – (c)	2.23 – (b)	2.24 – (d)
2.25 – (a)	2.26 – (b)	2.27 – (c)	2.28 – (b)	2.29 – (b)	2.30 – (a)
2.31 – (b)	2.32 – (c)	2.33 – (b)	2.34 – (d)	2.35 – (c)	2.36 – (b)
2.37 – (c)	2.38 – (d)	2.39 – (a)	2.40 – (b)	2.41 – (a)	2.42 – (c)

WHEEL & AXLE

3.01 – (b)	3.02 – (c)	3.03 – (b)	3.04 – (a)	3.05 – (b)	3.06 – (b)
3.07 – (b)	3.08 – (c)	3.09 – (a)	3.10 – (a)	3.11 – (a)	3.12 – (d)
3.13 – (b)	3.14 – (d)	3.15 – (b)	3.16 – (c)	3.17 – (b)	3.18 – (c)
3.19 – (d)	3.20 – (a)	3.21 – (b)	3.22 – (c)	3.23 – (a)	3.24 – (a)
3.25 – (c)	3.26 – (b)	3.27 – (d)	3.28 – (b)	3.29 – (a)	3.30 – (a)
3.31 – (c)	3.32 – (b)				

AIR BRAKE

4.001 – (b)	4.002 – (a)	4.003 – (a)	4.004 – (b)	4.005 – (c)	4.006 – (b)
4.007 – (a)	4.008 – (b)	4.009 – (a)	4.010 – (b)	4.011 – (a)	4.012 – (a)
4.013 – (b)	4.014 – (b)	4.015 – (c)	4.016 – (d)	4.017 – (c)	4.018 – (c)
4.019 – (c)	4.020 – (c)	4.021 – (b)	4.022 – (b)	4.023 – (b)	4.024 – (a)
4.025 – (b)	4.026 – (d)	4.027 – (b)	4.028 – (c)	4.029 – (b)	4.030 – (a)
4.031 – (c)	4.032 – (b)	4.033 – (b)	4.034 – (b)	4.035 – (a)	4.036 – (a)
4.037 – (b)	4.038 – (b)	4.039 – (c)	4.040 – (c)	4.041 – (b)	4.042 – (c)
4.043 – (d)	4.044 – (b)	4.045 – (a)	4.046 – (c)	4.047 – (a)	4.048 – (b)
4.049 – (a)	4.050 – (d)	4.051 – (c)	4.052 – (a)	4.053 – (d)	4.054 – (c)
4.055 – (b)	4.056 – (d)	4.057 – (a)	4.058 – (d)	4.059 – (b)	4.060 – (c)
4.061 – (d)	4.062 – (d)	4.063 – (d)	4.064 – (c)	4.065 – (c)	4.066 – (c)
4.067 – (c)	4.068 i – (a)	4.068 ii – (b)	4.068 iii – (b)	4.069 – (c)	4.070 – (d)
4.071 – (b)	4.072 – (d)	4.073 – (b)	4.074 – (b)	4.075 – (b)	4.076 – (c)
4.077 – (a)	4.078 – (b)	4.079 – (c)	4.080 – (b)	4.081 – (c)	4.082 – (b)
4.083 – (b)	4.084 – (a)	4.085 – (a)	4.086 – (b)	4.087 – (b)	4.088 – (b)
4.089 – (b)	4.090 – (a)	4.091 – (a)	4.092 – (a)	4.093 – (b)	4.094 – (b)
4.095 – (a)	4.096 – (b)	4.097 – (c)	4.098 – (b)	4.099 – (b)	4.100 – (c)
4.101 – (a)	4.102 – (c)	4.103 – (c)	4.104 – (d)	4.105 – (a)	4.106 – (a)
4.107 – (d)	4.108 – (c)	4.109 – (c)	4.110 – (a)	4.111 – (c)	4.112 – (c)
4.113 – (a)	4.114 – (c)	4.115 – (d)	4.116 – (b)	4.117 – (d)	4.118 – (d)
4.119 – (d)	4.120 – (d)	4.121 – (d)	4.122 – (b)	4.123 – (b)	4.124 – (b)

4.125 – (c)	4.126 – (c)	4.127 – (b)	4.128 – (a)	4.129 – (c)	4.130 – (a)
4.131 – (d)	4.132 – (a)	4.133 – (b)	4.134 – (b)	4.135 – (c)	4.136 – (c)
4.137 – (b)	4.138 – (a)	4.139 – (b)	4.140 – (b)	4.141 – (b)	4.142 – (c)
4.143 – (a)	4.144 – (a)	4.145 – (a)	4.146 – (a)	4.147 – (b)	

BOGIE

5.001 – (d)	5.002 – (a)	5.003 – (b)	5.004 – (a)	5.005 – (c)	5.006 – (b)
5.007 – (c)	5.008 – (c)	5.009 – (d)	5.010 – (a)	5.011 – (b)	5.012 – (c)
5.013 – (b)	5.014 – (a)	5.015 – (a)	5.016 – (b)	5.017 – (c)	5.018 – (a)
5.019 – (c)	5.020 – (c)	5.021 – (a)	5.022 – (b)	5.023 – (a)	5.024 – (b)
5.025 – (c)	5.026 – (b)	5.027 – (d)	5.028 – (c)	5.029 – (b)	5.030 – (d)
5.031 – (b)	5.032 – (c)	5.033 – (b)	5.034 – (a)	5.035 – (b)	5.036 – (c)
5.037 – (b)	5.038 – (b)	5.039 – (b)	5.040 – (c)	5.041 – (b)	5.042 – (b)
5.043 – (c)	5.044 – (a)	5.045 – (b)	5.046 – (c)	5.047 – (c)	5.048 – (b)
5.049 – (a)	5.050 – (b)	5.051 – (b)	5.052 – (c)	5.053 – (b)	5.054 – (a)
5.055 – (b)	5.056 – (b)	5.057 – (b)	5.058 – (a)	5.059 – (c)	5.060 – (b)
5.061 – (c)	5.062 – (a)	5.063 – (c)	5.064 – (a)	5.065 – (c)	5.066 – (b)
5.067 – (b)	5.068 – (c)	5.069 – (a)	5.070 – (b)	5.071 – (c)	5.072 – (a)
5.073 – (d)	5.074 – (c)	5.075 – (b)	5.076 – (c)	5.077 – (b)	5.078 – (b)
5.079 – (b)	5.080 – (c)	5.081 – (b)	5.082 – (b)	5.083 – (d)	5.084 – (c)
5.085 – (d)	5.086 – (a)	5.087 – (c)	5.088 – (a)	5.089 – (b)	5.090 – (b)
5.091 – (a)	5.092 – (b)	5.093 – (b)	5.094 – (c)	5.095 – (d)	5.096 – (c)
5.097 – (d)	5.098 – (b)	5.099 – (c)	5.100 – (c)	5.101 – (d)	5.102 – (a)
5.103 – (c)	5.104 – (c)	5.105 – (a)	5.106 – (b)	5.107 – (c)	

VACUUM

6.01 – (b)	6.02 – (b)	6.03 – (a)	6.04 – (d)	6.05 – (b)	6.06 – (a)
6.07 – (a)	6.08 – (c)	6.09 – (c)	6.10 – (b)	6.11 – (c)	6.12 – (a)
6.13 – (d)	6.14 – (d)	6.15 – (a)	6.16 – (a)	6.17 – (b)	6.18 – (a)
6.19 – (c)	6.20 – (c)	6.21 – (c)	6.22 – (d)	6.23 – (b)	6.24 – (c)

6.25 – (d)	6.26 – (b)	6.27 – (a)	6.28 – (a)	6.29 – (a)	6.30 – (b)
6.31 – (d)	6.32 – (d)	6.33 – (c)	6.34 – (c)	6.35 – (b)	6.36 – (a)
6.37 – (a)	6.38 – (d)	6.39 – (c)	6.40 – (a)	6.41 – (d)	6.42 – (b)
6.43 – (b)	6.44 – (c)	6.45 – (b)	6.46 – (b)	6.47 – (b)	6.48 – (b)

UNDER FRAME / BODY

7.01 – (a)	7.02 – (b)	7.03 – (a)	7.04 – (c)	7.05 – (d)	7.06 – (a)
7.07 – (b)	7.08 – (c)	7.09 – (b)	7.10 – (c)	7.11 – (b)	7.12 – (a)
7.13 – (c)	7.14 – (b)	7.15 – (a)	7.16 – (c)	7.17 – (c)	7.18 – (b)

TANK WAGON

8.01 – (b)	8.02 – (a)	8.03 – (a)	8.04 – (a)	8.05 – (c)	8.06 – (b)
8.07 – (a)	8.08 – (b)	8.09 – (b)	8.10 – (c)	8.11 – (c)	8.12 – (b)
8.13 – (c)	8.14 – (a)	8.15 – (a)	8.16 – (b)	8.17 – (b)	8.18 – (a)
8.19 – (d)	8.20 – (a)	8.21 – (d)	8.22 – (b)	8.23 – (a)	8.24 – (d)
8.25 – (a)	8.26 – (b)	8.27 – (a)	8.28 – (b)	8.29 – (a)	8.30 – (b)
8.31 – (a)	8.32 – (c)	8.33 – (d)	8.34 – (a)	8.35 – (b)	8.36 – (b)
8.37 – (b)	8.38 – (b)	8.39 – (a)	8.40 – (c)	8.41 – (b)	8.42 – (a)
8.43 – (d)	8.44 – (b)	8.45 – (a)	8.46 – (d)	8.47 – (c)	8.48 – (d)
8.49 – (a)	8.50 – (c)	8.51 – (d)			

BLC WAGON

9.01 – (d)	9.02 – (d)	9.03 – (b)	9.04 – (b)	9.05 – (a)	9.06 – (c)
9.07 – (b)	9.08 – (c)	9.09 – (a)	9.10 – (a)	9.11 – (c)	9.12 – (b)
9.13 – (c)	9.14 – (b)	9.15 – (b)	9.16 – (a)	9.17 – (b)	9.18 – (c)
9.19 – (a)	9.20 – (b)	9.21 – (d)	9.22 – (a)	9.23 – (b)	9.24 – (c)
9.25 – (b)	9.26 – (a)	9.27 – (b)	9.28 – (a)	9.29 – (a)	

Abbreviations

1	ART	Accident and tool van or relief train.
2	AAR	American association of Rail Road
3	AR	Auxiliary reservoir.
4	ARME	Accident relief and medical equipment
5	BKH	Open wagon hopper
6	BVZI	Bogie covered brake van fitted with ICF trolley & pneumatic brakes.
7	BOY	Open wagon with straight CBC
8	BOBX	Open wagon hopper with centre and side discharge arrangement
9	BOBC	Open wagon hopper with centre discharge arrangement
10	BOXC	Open BOX wagon with straight CBC at both side and also with straight CBC at one end transition coupler at the other end.
11	BOXR	Open box wagon with screw coupling
12	BOXS	BOX wagon with swing cum-flap doors and sliding roofs.
13	BOXT	Open BOX wagon with transition couplings
14	BOI	Open wagon gondola
15	BC	Bogie Covered wagon
16	BCXR	Covered BOX wagons with screw couplers.
17	BCXT	Covered BOX wagon with transition couplers.
18	BVGT	Covered brake van with CBC and transition type coupling on both sides.

19	BVGC	Covered brake van with CBC and high coupling draft gear with screw coupling at the other end.
20	BTA	Tank wagon acid.
21	BTE	Tank wagon liquid caustic soda.
22	BTK	Tank wagon Kerosene.
23	BTL	Tank wagon heavy oil.
24	BTM	Tank wagon molasses.
25	BTP	Tank wagon petrol.
26	BTV	Tank wagon vegetable oil.
27	BTPN	Bogie patrol tank wagon.
28	BTAP	Bogie tank wagon for alumina type.
29	BTALN	Bogie liquefied anhydrous ammonia gas tank wagons.
30	BOBR	Bogie open bottom rapid discharge hopper wagon.
31	BLC	Bogie low height container flat wagon.
32	BC	Brake cylinder.
33	BPC	Brake power certificate.
34	BP	Brake pipe.
35	BWL	Bogie well wagon
36	CT	Tours car
37	CRT	Covered wagon with lightweight transition type CBC
38	CS	Covered wagon, Salt.

39	CLW	Chittranjan locomotive works.
40	C&W	Carriage and Wagon.
41	CR	Control reservoir.
42	CDD	Compact disk drive
43	CRS	Commissioner of Railway safety.
44	CME	Chief mechanical Engineer
45	CRSE	Chief Rolling Stock Engineer
46	CPB	Common pipe bracket
47	CAMTECH	Center for advanced maintenance technology.
48	CRB	Chairman Railway board
49	COFMOW	Central organization for modernization of workshops.
50	CRIS	Central for Railway information system.
51	CBC	Center buffer coupler.
52	CTRB	Cartridge type roller bearing
53	DV	Distributor valve
54	D&A	Discipline and appeal rules.
55	DLW	Diesel locomotive works
56	DMRC	Delhi metro rail corporation Ltd.
57	DCW	Diesel component works
58	ELB	Empty load box
59	FOIS	Freight operating information system.

60	FP	Feed pipes.
61	FO	Furnace oil
62	GM	General manager.
63	HB	Hand brake
64	HSD	High speed diesel.
65	HDD	Hard disc drives.
66	IRCON	Indian railway construction corporation Ltd.
67	ICF	Integral coach factory.
68	IVRS	Interactive voice response system.
69	IRCA	Indian Railway conference association.
70	IRWO	Indian Railway welfare organization.
71	IRFC	Indian Railway finances corporation Ltd.
72	IRIMEE	Indian railway institute of mechanical & electrical engineering.
73	KRC	Konkan Railway corporation.
74	K	Open wagon
75	LHB	Link Halfman Boseh
76	LDO	Light Diesel oil
77	MBTSA	Sulphuric acid tank wagon.
78	OP	Oil pressure.
79	ODC	Over dimensional consignment.
80	PEV	Passenger emergency valve

81	PEASD	Passenger emergency Alarm signal device
82	RDSO	Research, Design and standard organization.
83	PRS	Public reservation system.
84	RCF	Rail coach factory.
85	RITES	Rail India technical and economy services Ltd.
86	RSC	Railway staff college.
87	RRB	Railway recruitment board.
88	SWTR	Single wagon test ring
89	SMF	Sealed maintenance free.
90	SAB	Slack adjuster barrel.
91	SPTM	Self printing ticket machine.
92	TPGLR	4- Wheeled liquefied petroleum gas tank wagon.
93	THA	Hydrochloric acid tank wagon.
94	TCL	Liquid chlorine tank wagon.
95	UTS	unreserved ticket system.
96	V	Brake van. Ordinary.
97	VB	Rest van ordinary.
98	RWF	Rail wheel Factory.
99	WT	Water tight.
100	WWP	Worn wheel profile

DIMENSION CHART OF WAGON

APPENDIX-i

PARTICULARS	BOXN	BCN	BRN	BTPN	BTCS	TPGLR	BOBR	BTAP	Bogie Phosphoric acid tank wagon	8-Axle BG wall type Special wagon	BTALN	BTPGL	THA	BLC	
														CAR-A	CAR-B
Length Over Headstock (mm)	9784	14500	13716	11491	9784	8382	10671	11400	12000	26160	16600	18000	5537	CAR-A	CAR-B
Length Over Coupler (mm)	10713	13429	14645	12420	10713	9652	11600	12329	12929	27442	17529	19282	6807	13625	12212
Length Inside / Length of Wall (mm)	9784	14494	13716	11458	9780	8382	8732	-	9270	7500	16325	17944	5312	13625	12212
Width/ Diameter Inside (mm)	2950	1944	2845	3126	2560	2300	3500	3200	2550	2930	2449	-	2210	2100	2100
Inside Height / Height Of Wall (mm)	3225	2490	-	4265	4110	4125	3735	4350	3897	1080	4265	4004	4070	1009	1009
Wheel Base (mm)	2000	2000	2000	2000	2000	4878	2000	2000	2000	2000	2000	2000	3505	2000	2000
Bogie Center (mm)	6524	10000	9144	9144	6524	--	7571	8300	8800	17960	11570	12970	-	9675	8812
Journal Size (mm)	144.5	144.5	144.5	144.5	-	120	144.5	-	-	-	130	130	127	-	144.5
Journal Center (mm)	2260	2260	2240	2240	2260	1955	2260	2260	2260	2360	2240	-	1955	2260	2260
Wheel Dia on Tread (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1092	840	840
Max. Axle Load (t)	20.32	20.32	20.32	20.32	20.32	16.32	20.32	20.3	20.32	20.3	20.3	20.32	16.26	20.32	20.32
Tare Weight (t)	22.47	27.2	24.4	27	26	18.2	26	26.28	28.28	66.56	49.13	45.78	12.19	19.1	18
Pay Load (t)	58.81	54.08	56.9	54.28	55.28	14.3	55.28	53.96	53	96	32.13	35.5	20.32	61	61
Gross Load (t)	81.28	81.28	81.3	81.28	81.28	32.5	81.28	81.28	81.28	162.56	81.26	81.28	32	80.1	79
Ratio Gross Load/ Tear Loading	3.62	2.99	3.33	2.01	2.12	-	2.12	-	-	-	-	4.21	-	-	-
Carrying Capacity Per Meter (t/m)	7.59	5.27	5.55	6.54	7.59	-	7	6.59	-	-	-	1.84	-	-	-
Floor Area (Sq. m)	28.86	42.67	34	-	-	-	-	-	-	-	-	-	-	-	-
Cubic/ Loadable Volume Capacity	56.28	104.37	-	70.91	36.75	-	57.2	65.4	34.35	-	60.66	74.97	18.6	-	-
Total Brake Power (Empty) In Kg.	18900	18900	18900	-	-	-	-	-	-	-	-	-	-	18595	17574
Total Brake Power (Loaded) In Kg.	33692	33642	33642	-	-	-	-	-	-	-	-	-	-	35184	33357
Coupling Arrangement				Std CBC	Std. CBC	Buffer arrangement	Non-Transition CBC	Std CBC	Std. CBC	Transition CBC	Std. CBC	Transition CBC	Buffer Type	Std. CBC	
	Std. CBC	Std.CBC	Std. CBC												
Length of Barrel (mm)	-	-	-	11458	9780	8350	-	8745	11294	-	16325	17960	5312	-	SDB
Diameter Inside of Barrel (mm)	-	-	-	2850	2300	2300	-	2300	2000	-	2200	2400	2210	-	-
Thickness Of Dished End (mm)	-	-	-	12	10	16	-	-	12	-	25	17	11	-	-
Loadable Volume	-	-	-	68.13	36.81	-	-	-	-	-	-	95% of	-	-	-
Working Pressure (Kg/cm ²)	-	-	-	1.4	2	15.85	-	-	4	-	22.15	15.85	-	-	-
Test Pressure (Kg/cm ²)	-	-	-	2.8	4.5	21.65	-	-	5.9	-	-	21.1	-	-	-
Thickness of Barrel Plate (mm)	-	-	-	8	10	14	-	-	8	-	25	15	10	-	-
Bogie Arraignment	Casnub all version	Casnub all version	Casnub all version	Casnub 22w(M)	Casnub all version	Four wheeled	Casnub 22w(M)	Casnub all version	Fabricated UIC Bogie	Fabricated UIC Bogie	Fabricated UIC Bogie	Fabricated UIC Bogie	Four wheeled	Container bogie type LCCF-20(C)	
Brake System	Air Brake	Air Brake			Air Brake	Vacuum		Air Brake	Air brake	Vacuum	Air Brake	vacuum	Vacuum	Air Brake	

Status of Bogie Clearances to be mentioned During ROH

- i) After dismantling the bogies, full gauging should be done and all measurements recorded.
- ii) For all bearing surfaces whether these are having provision of liners or not, the recommended dimensions of Important locations of CASNUB bogies after ROH are as follows:

Sr. No.	Surface/Component	Nominal Size	Condemning size	Depot dimensions (in mm)
(1)	S.F. pedestal jaw 22 W (M)	278	286	281
(2)	S.F. pedestal jaw (short)	190	198	193
(3)	S.F. pedestal jaw (long)	236	244	239
(4)	S.F. anti-rotation lug	522	528	524.5
(5)	S.F. column sides	216	206	212
(6)	Thickness of S.F. column friction plate	10	6	8.5
(7)	Side of pedestal			
	(a) In short jaw in short jaw bogie.	81	77	79.5
	(b) In 22 W (M)	105	101	103.5
(8)	Pedestal crown sides (for all bogies)	152	144	149
BOLSTER				
(9)	Bolster land surface	444	438	441.5
(10)	Thickness of slope surface liner	8	3	6
(11)	Bolster rotation slope lug	518	512	515.5
(12)	Bolster column gib;			
	Inner	136	146	140
	Outer	234	244	238
C/PIVOT				
(13)	Thickness of vertical wall	19	11	16.0
(14)	Wear in bowl area	-	4	1.5
BREAK BEAM POCKET				
(15)	thickness of pocket liner	5	2	3.5
GAUGE				
(16)	Wear in vertical surface	-	7	3.0
(17)	Wear in slope surface	-	3	1.0

As per G-95/railway board letter No. 93/M/(N)/951/37 Dated-26.3.04

THE SOURCES OF THE ANSWER OF THE QUESTION ARE: –

IMPORTANT RULE BOOKS AND REFERENCES: -

- i. IRCA Conference Rules Part III (2000) - Rules for Maintenance, Examination and Interchange of Goods Stock (BG & MG System) of Indian Government Railways
- ii. RDSO's Technical Pamphlet G-16 - Instructions for Maintenance and Operation of Box Wagons
- iii. RDSO's Technical Pamphlet G-40 - Manual of Instructions for Anhydrous Ammonia Tank.
- iv. RDSO's tech. Pamphlet No. G-55H/Aug.76 Instructions for maintenance and operation of hydrochloric acid tank wagon type THA.
- v. RDSO's tech. Pamphlet No. G-62/June.77 Maintenance manual of alliance II coupler
- vi. Indian Railways Code for the Mechanical Department (Workshops)

- vii. RDSO's Technical Pamphlet G-65 Instructions for inspection and maintenance of TPGLR
- viii. RDSO's Technical Pamphlet G-70 Instructions for inspection and maintenance of BOXN wagons fitted with CASNUB Bogies and twin pipe air brake system.
- ix. RDSO's tech. Pamphlet No. G-71 Maintenance manual for phosphoric acid tank wagon.
- x. RDSO's Technical Pamphlet G-73 Instructions for inspection and maintenance of BOBR
- xi. RDSO's tech. Pamphlet No. G-79 Instructions for operation and maintenance for BTAL/BTALN
- xii. RDSO's Technical Pamphlet G-81 Instructions for inspection and maintenance of CTRB
- xiii. RDSO's tech. Pamphlet No. G-82 Instructions for operation and maintenance BG bogie tank wagon for alumina type BTAL.
- xiv. RDSO's tech. Pamphlet No. G-83 Instructions for operation for maintenance of BTCS wagon
- xv. RDSO's Technical Pamphlet G-86 Instructions for inspection and maintenance of BTPGL/BTPGLN
- xvi. RDSO's Technical Pamphlet G-90 Instructions for inspection and maintenance of BTPN
- xvii. RDSO's Technical Pamphlet G-92 Instructions for inspection and maintenance of Slack Adjuster type IRSA 450 & 600
- xviii. RDSO's Technical Pamphlet G-95 Instructions for inspection and maintenance of CASNUB Bogies
- xix. RDSO's Technical Pamphlet G-97 Instructions for inspection and maintenance of Air Brakes
- xx. RDSO's Technical Pamphlet No. WT-77-1 & WT-79-1 for inspection and maintenance of 20.3 Tonnes Roller Bearing and 16.3 Tonnes Roller Bearing axle boxes fitted wagons.
- xxi. Modern rolling stock guide by P.C Gupta.
- xxii. Wagon maintenance manual

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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