

2013

Syllabus for
examination
against
filling up of
ex-cadre post
of
STC/KGP

Annexure-SI

Sub: Syllabus for examination against filling up of ex-cadre post of
Sr. Lecturer for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

- a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation , Inter Departmental Co-operation
- b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.
- c) **Material Management:** Consumables, Imprest stores, methodology of revising imprest, various registers to be maintained, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis. Tender and Contract, Budget, M&P Prog, WP &RSP
- d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites
- e) **Reliability Engineering, Quality and Safety:** Basic concept of reliability Engineering and methods of improving reliability (including definition of various terms related with reliability engineering); Reliability study of various Mech. Equipment's and suggested measures for improvement of reliability of Mech. Assets
- f) **General Engineering (Mech):** Manufacturing process, Applied Mechanics, Thermodynamics, Strength of Materials, Engineering Drawing and Design, Fluid Mechanics, Engineering Mathematics.
- g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-SII

Sub: Syllabus for examination against filling up of ex-cadre post of **Sr.Lecturer (Estt.)** for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

- a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation, Inter Departmental Co-operation, Communication Techniques.
- b) **Material Management:** Consumables, Imprest stores, various registers to be maintained, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap.
- c) **Labour Laws & Personal Matters:** Railway Structure and organization, General conditions of Railway service, Railway Service Conduct Rule-1966,Railway Servants D&A Rules-1968, Manpower Planning, Leave Rules ,Pass Rules ,Welfare Measures, HOER, Labour Laws, WC Act-1923, Factory Act-1948 ,Industrial Dispute Act ,Payment Wages Act-1936
Industrial Relations, Retirement Benefits & Pension Rules, Letter Drafting Notices, Speaking Order etc., Budget, Opening of Service Sheet , Casual Labour & Substitutes ,Selection Procedure ,Seniority Rules , Pay Fixation , Office Procedure , CAT & Court Cases
- d) **Basic knowledge of Computer:** Various terminologies in used, Role of Computers in daily life, advantages, various railway oriented web sites
- e) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-SIII

Sub: Syllabus for examination against filling up of ex-cadre post of
Ch Inst (Elect) for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation , Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, methodology of revising imprest, various registers to be maintained, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Trade theory:** Traction Distribution system (25kv and 2 x 25 kv), SCADA, OHE, Station working Rules, Operation and maintenance of Circuit breakers, Safety issues related to TRD, Train Lighting; Air-Conditioning & Refrigeration; Power Distribution; Illumination; D.C. Motors; AC Motor; Transformer; Energy conservation Act; Qyoto Protocol; Green House Effect; Carbon Trading; Star rating ; Pumps; Clean Development Mechanism.

f) **General Electrical Engineering:** Current & Ohm's law; Simple D.C. Circuit; Network Analysis; Magnetism and Electromagnetism ; D.C Generator and D,C, Motor; Batteries; Fundamental of AC; Single phase and three phase Current;

g) **Basic Electronics:** Classification of electronic components, theory of passive components-LCR, Active components-Semiconductors physics, construction and operating principle, specification and testing of Power Diodes, Zener Diodes. LEDs, BJTs, UJT, MOSFET, SCR,GTO and IGBT; Control of 3 phase drives

h) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-SIV

Sub: Syllabus for examination against filling up of ex-cadre post of
Ch Inst (C&W) for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation , Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, methodology of revising imprest, various registers to be maintained, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis. Tender and Contract, Budget, M&P Prog, WP &RSP

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Trade theory:** Preventive maintenance schedule of coaches & Wagon; Maintenance manuals for goods, coaching, IRCA Rules stock; Types of maintenance schedule of coaches in open line; Measures to prevent coach failures, measures to improve customer satisfaction from coaching stock. Types of maintenance schedule of wagons in open line; ROH of wagons; Measures to reduce en-route detachment; Dimensional measurements and specifications of vital components of coaches and wagons; Brake systems including common problems like vacuum/pressure, trouble brake binding, etc; Salient design aspects of high speed CONCOR container flat wagons; Instruction for operation and maintenance of BOBR; Equipment failure – roller bearing train parting, etc. Derailment investigation – measurements to be taken and their analysis; Handling of dangerous commodities, symbols of their loading in wagons, precautions

f) Basic Mechanical Engineering.

g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-SV

Sub: Syllabus for examination against filling up of ex-cadre post of
Ch Inst (Diesel/Mech) for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation, Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, methodology of revising imprest, various registers to be maintained, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis. Tender and Contract, Budget, M&P Prog, WP &RSP

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Trade theory:** Types of IC Engines and working, classification; Tractive effort-speed characteristics and coefficient of Adhesion; Supercharging principles, methods and various testing parameters. Air and vacuum brakes, Fuel oil system, Lube oil system, Water cooling system, **Loco maintenance procedures**, wheel specification, bearing fitment, suspension system, Anti Collision Device-Operation and maintenance, WDG3A loco and bogie, Unit cam shaft, piston, piston ring, 251 plus cylinder head, valves, Double helix fuel injection pump, Fuel injection tube, Plate type lube oil cooler, Centrifugal lube oil cleaner, Air Drier. Load Box Testing.

f) Basic Mechanical Engineering.

g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

10. Various tests : Load Box test, Dry run test, Hot Engine test etc and troubles: PG, Wheel slip etc. Preventive maintenance, Maintenance facilities, Category of loco failure, Trouble shooting, Outage calculation.

Part – II

MICROPROCESSOR BASED CONTROLLED LOCOMOTIVE AND EMD LOCOMOTIVE: Salient features of Microprocessor based control system (MEP 660) and advantages of this control system (MEP 660) in Diesel locomotive. Working principal of MEP 660 system in Diesel locomotive. Control circuits. Different type of sensors and its theory of working. Various components of MEP controlled Diesel locomotive. Additional features of MEP Version – 3 controlled Diesel locomotive. Excitation control, Auxiliary voltage control system, Auxiliary control and Control unit of MEP Version -3 controlled Diesel locomotive. Trouble shooting.

EMD LOCO

Power Electronics, SCR, IGBT etc. Difference between EMD type locomotive and other locomotives. Starting of EMD type locomotive engine. Controls and Indicating Devices. Power transmission system. . Safety devices of EMD type locomotive. Electrical Rotating equipments details.14 Electrical systems such as excitation, speed control, dynamic brake etc.

Sub: Syllabus for examination against filling up of ex-cadre post of
Ch. Loco Instructor (Simulator) for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

- a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation, Inter Departmental Co-operation
- b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.
- c) **Material Management:** Consumables, Imprest stores, methodology of revising imprest, various registers to be maintained, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis. Tender and Contract, Budget, M&P Prog, WP &RSP
- d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites
- e) **Basics on Diesel Loco :** Types of IC Engines and working, classification; Tractive effort and Adhesion; **Working principles-** Supercharging, Air and vacuum brakes, Fuel oil system, Lube oil system, Water cooling system, wheel specification, bearing fitment, suspension system, Anti Collision Device-Operation, WDG3A loco and bogie ; fuel injection pump, Fuel injection tube, Plate type lube oil cooler, Centrifugal lube oil cleaner, Air Drier, Feature of an ideal transmission in Diesel Loco, DC-DC, AC-DC, AC-AC transmission; Various types of rotating equipments such as TG, TM,EG, AG, DB Blower, CCEM,ECC, TACHO, Fuel Booster Motor-Description, Common problems and remedy; excitation systems, Dynamic brake system, Transition system, Microprocessor based controls; Types of Governors ; Various safety devices and alarm fitted in Loco;
Simple trouble shooting and recent modifications
- f) **C&W:** Brake systems of Wagons and coaches Brake binding, train parting, BPC and GDR
- g) **Track-Train Dynamics and Operation :**Basic knowledge of track and its defect; Classification of stations, Systems of working, Signaling systems, OPT Forms, Whistle code, Abnormal working, Shunting, Accidents & Disaster ; Train handling on Level Terrain, Light ascending Terrain, Light descending Terrain, Heavy ascending Terrain, Heavy descending Terrain, Cresting Grade, Hump Territory, Dip territory, Undulating Grade, Curvature, Ghat section, Banker operation, MU Operation, Train Parting due to improper train handling.
- h) Extract from GR & SR and Operating manual specially concept of working time table , interlocking , ODC, Precedence of trains etc
- i) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Sub: Syllabus for examination against filling up of ex-cadre post of
Ch. Instructor (Running) for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation, Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, methodology of revising imprest, various registers to be maintained, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis. Tender and Contract, Budget, M&P Prog, WP &RSP

d) **Basic knowledge of Computer:** Various terminologies **used**, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Basics on Diesel Loco :** Types of IC Engines and working, classification; Tractive effort and Adhesion; **Working principles-** Supercharging, Air and vacuum brakes, Fuel oil system, Lube oil system, Water cooling system, wheel specification, bearing fitment, suspension system, Anti Collision Device-Operation, WDG3A loco and bogie helix fuel injection pump, Fuel injection tube, Plate type lube oil cooler, Centrifugal lube oil cleaner, Air Drier, Feature of an ideal transmission in Diesel Loco, DC-DC, AC-DC, AC-AC transmission; Various types of rotating equipments such as TG, TM,EG, AG, DB Blower, CCEM,ECC, TACHO, Fuel Booster Motor-Description, Common problems and remedy; excitation systems, Dynamic brake system, Transition system, Microprocessor based controls; Types of Governors ; Various safety devices and alarm fitted in Loco; **Simple trouble shooting and recent modifications**

f) **C&W:** Brake systems of Wagons and coaches Brake binding, train parting, BPC and GDR

g) **Train Dynamics and Operation:** Classification of stations, Systems of working, Signaling systems, OPT Forms, Whistle code, Abnormal working, Shunting, Accidents; Train handling on Level Terrain, Light ascending Terrain, Light descending Terrain, Heavy ascending Terrain, Heavy descending Terrain, Cresting Grade, Hump Territory, Dip territory, Undulating Grade, Curvature, Ghat section, Banker operation, MU Operation, Train Parting due to improper train handling.

h) Extract from GR & SR and Operating manual specially concept of working time table , interlocking , ODC, Precedence of trains etc

h) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-SIX

Sub: Syllabus for examination against filling up of ex-cadre post of **Instructor (Diesel/Mech)** for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation, Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Trade theory:** Types of IC Engines and working, classification; Tractive effort-speed characteristics and coefficient of Adhesion; Supercharging principles, methods and various testing parameters. Air and vacuum brakes, Fuel oil system, Lube oil system, Water cooling system, **Loco maintenance procedures**, wheel specification, bearing fitment, suspension system, Anti Collision Device-Operation and maintenance, WDG3A loco and bogie, Unit cam shaft, piston, piston ring, 251 plus cylinder head, valves, Double helix fuel injection pump, Fuel injection tube, Plate type lube oil cooler, Centrifugal lube oil cleaner, Air Drier. Load Box Testing.

f) Basic Mechanical Engineering.

g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-SX

Sub: Syllabus for examination against filling up of ex-cadre post of **Instructor (Diesel/Elect)** for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation, Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, various registers to be maintained, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Trade theory:** Preventive maintenance of Diesel Loco (Elect-Part) ; Various types of transmission, Feature of an ideal transmission in Diesel Loco, DC-DC, AC-DC, AC-AC transmission; Various types of rotating equipments such as TG, TM,EG, AG, DB Blower, CCEM,ECC, TACHO, Fuel Booster Motor-Description/Repair/Testing, Common problems and remedy; excitation systems, Dynamic brake system, Transition system,- Circuit analysis, defects and remedy; Microprocessor based controls; Types of Governors-Overhauling & testing ; Various safety devices and alarm fitted in Loco; Load Box Testing.

f) Basic Electrical Engineering

g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-SXI

Sub: Syllabus for examination against filling up of ex-cadre post of **Instructor (C&W)** for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation, Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Trade theory:** Preventive maintenance schedule of coaches & Wagon; Maintenance manuals for goods, coaching, IRCA Rules stock; Types of maintenance schedule of coaches in open line; Measures to prevent coach failures, measures to improve customer satisfaction from coaching stock. Types of maintenance schedule of wagons in open line; ROH of wagons; Measures to reduce en-route detachment; Dimensional measurements and specifications of vital components of coaches and wagons; Brake systems including common problems like vacuum/pressure, trouble brake binding, etc; Salient design aspects of high speed CONCOR container flat wagons; Instruction for operation and maintenance of BOBR; Equipment failure – roller bearing train parting, etc. Derailment investigation – measurements to be taken and their analysis; Handling of dangerous commodities, symbols of their loading in wagons, precautions.

f) Basic Mechanical Engineering.

g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-SXII

Sub: Syllabus for examination against filling up of ex-cadre post of
Instructor (Electronics) for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

- a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation, Inter Departmental Co-operation
- b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.
- c) **Material Management:** Consumables, Imprest stores, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.
- d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites
- e) **Trade theory: Electronics-** functions and development; **Conductors, Insulators, Semiconductors-** Properties, Band theory, Atomic structure; **Resistors-**Types, colour code; **Capacitors-** Construction, Capacitive Reactance, Practical applications, colour code etc; **Inductor-** Construction, Impedance, Practical applications; **Transformers-** Construction, Mutual and self inductance, Specification, **Semiconductor material-** Construction, importance and properties, Crystal structure, Electron and hole current, "N" Type and "P" Type semiconductors, Practical applications, **P-N Junction** – Practical application, V-I characteristics curve, **N-P-N Junction and P-N-P Junction** – Practical application, V-I characteristics curve. Gate- AND, OR, NOR, XOR, combination of basic gates, Truth tables. **Electronic circuit drawing/Design and analysis.**
- f) **Basic Mechanical Engineering.**
- g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-SXIII

Sub: Syllabus for examination against filling up of ex-cadre post of **Lecturer** for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation , Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Reliability Engineering, Quality and Safety:** Basic concept of reliability Engineering and methods of improving reliability (including definition of various terms related with reliability engineering); Reliability study of various Mech. Equipment's and suggested measures for improvement of reliability of Mech. Assets

f) **General Engineering (Mech):** Manufacturing process, Applied Mechanics, Thermodynamics, Strength of Materials, Engineering Drawing and Design, Fluid Mechanics, Engineering Mathematics.

g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-SXIV

Sub: Syllabus for examination against filling up of ex-cadre post of **Instructor (EMU)** for STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

- a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation , Inter Departmental Co-operation
- b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.
- c) **Material Management:** Consumables, Imprest stores, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.
- d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites
- e) **Trade theory:** Equipment layout, Power and control circuit, Pneumatic circuits etc. Design aspect of EMUs, Power and control circuits and trouble shooting, Bogies, wheel sets, gears, spring, snubber, buffers, CBC, Air dryer. Locomotives testing, maintenance and trouble shooting; Basic operation and maintenance of Transformers, Rectifiers, Traction Motors, Brake equipments, Pantograph, electronics. Train Lighting; Energy conservation Act; Green House Effect; Carbon Trading; Clean Development Mechanism.
- f) **General Electrical Engineering:** Current & Ohm's law; Simple D.C. Circuit; Network Analysis; Magnetism and Electromagnetism ; D.C Generator and D,C, Motor; Batteries; Fundamental of AC; Single phase and three phase Current; Basic Electronics .
- g) **Basic Electronics:** Classification of electronic components, theory of passive components-LCR, Active components-Semiconductors physics, construction and operating principle, specification and testing of Power Diodes, Zener Diodes. LEDs, BJTs, UJT, MOSFET, SCR,GTO and IGBT; Control of 3 phase drives
- h) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

2013

Syllabus for
examination
against filling up of
ex-cadre post of
RWTI and
Centralised C&W
Training School/ KGP

Annexure-RI TO

Sub: Syllabus for examination against filling up of ex-cadre post of **Training Officer(SSE/Weld)/RWTI-KGP** under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation , Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, methodology of revising imprest, various registers to be maintained, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis. Tender and Contract, Budget, M&P Prog, WP &RSP

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites.

e) **Reliability Engineering, Quality and Safety:** Basic concept of reliability Engineering and methods of improving reliability (including definition of various terms related with reliability engineering); Reliability study of various Mech. Equipment's and suggested measures for improvement of reliability of Mech. Assets

f) **Trade theory:** Welding Safety, Firefighting, Weld gauge; Welding Rectifier; Transformer; Semi automatic sub-merged Arc welding; Bench vices; Power Hacksaw; Grinder, Electric arc welding including CO2 & MIG/TIG; Gas cutting; Welding defects, inspection, & testing of welds; Protective clothing; Reclamation/repairs of components by welding; selection of electrodes; Incentive scheme of Workshop/ Job card; Specification of electrodes; Electrode driers; Fume hazards; H₂ , O₂ and C₂H₂ gases;

g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-CII C&W

Sub: Syllabus for examination against filling up of ex-cadre post of **C&W Instructor** for CTC/KGP under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197dtd. 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation, Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Trade theory:** Preventive maintenance schedule of coaches & Wagon; Maintenance manuals for goods, coaching, IRCA Rules stock; Types of maintenance schedule of coaches in open line; Measures to prevent coach failures, measures to improve customer satisfaction from coaching stock. Types of maintenance schedule of wagons in open line; ROH of wagons; Measures to reduce en-route detachment; Dimensional measurements and specifications of vital components of coaches and wagons; Brake systems including common problems like vacuum/pressure, trouble brake binding, etc; Salient design aspects of high speed CONCOR container flat wagons; Instruction for operation and maintenance of BOBR; Equipment failure – roller bearing train parting, etc. Derailment investigation – measurements to be taken and their analysis; Handling of dangerous commodities, symbols of their loading in wagons, precautions.

f) Basic Mechanical Engineering.

g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-RIIIW

Sub: Syllabus for examination against filling up of ex-cadre post of **Weld. Instructor** for RWTI/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

B) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

c) **Trade theory:** Welding Safety, Firefighting, Weld gauge; Welding Rectifier; Transformer; Semi automatic sub-merged Arc welding; Bench vices; Power Hacksaw; Grinder, Electric arc welding including CO₂ & MIG/TIG; Gas cutting; Welding defects, inspection, & testing of welds; Protective clothing; Reclamation/repairs of components by welding; selection of electrodes ; Incentive scheme of Workshop/ Job card; Specification of electrodes; Electrode driers; Fume hazards; H₂ , O₂ and C₂H₂ gases;

d) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

2013

Syllabus for
examination
against filling up of
ex-cadre post of
BTC (BASIC
TRAINING
CENTRE)/KGPW

Annexure-BI Ch

Sub: Syllabus for examination against filling up of ex-cadre post of **Chief Instructor** for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

- a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation , Inter Departmental Co-operation
- b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.
- c) **Material Management:** Consumables, Imprest stores, methodology of revising imprest, various registers to be maintained, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis. Tender and Contract, Budget, M&P Prog, WP &RSP
- d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites
- e) **Reliability Engineering, Quality and Safety:** Basic concept of reliability Engineering and methods of improving reliability (including definition of various terms related with reliability engineering); Reliability study of various Mech. Equipment's and suggested measures for improvement of reliability of Mech. Assets
- f) **General Engineering (Mech):** Production Technology, Applied Mechanics, Thermodynamics, Strength of Materials, Engineering Drawing and Design, Fluid Mechanics, Engineering Mathematics.
- g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIIC

Sub: Syllabus for examination against filling up of ex-cadre post of **Sr. Instructor (Carriage)** for BTC/KGPW under PSTC:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation , Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Trade theory:** Safety, Firefighting, Use of Pneumatic and Hydraulic portable tools, Mech. Fasteners, washer, sealing, locking of bolts, Clearance/Fits/Tolerance, PVC & Epoxy laying, Cushioned seats; Brake gear-Repair/Adjustment; Analysis of wheel defects; corrosion on Coaching stock/prevention/modification etc. Electric arc welding including CO₂ & MIG/TIG; Gas cutting; Lubricants, Bearing/defect/maintenance ; Special features of BEML Bogie, ICF, FIAT, IR-20 Bogie- checking/repairs; Train lighting; Overhauling & Testing of Air Brake Equipment including Bogie mounted Brake system /Vacuum Brake; Roller Bearings maintenance; UST of Axles; CBC; Incentive scheme of Workshop/ Job card ; Maintenance manuals for coaching stock; Types of maintenance schedule of Coaches ; Salient design aspects of high speed trains like SHATAPDI, JANA SATAPDI & RAJDHANI including LHB Coaches; Equipment failure – train parting, etc. Derailment investigation – measurements to be taken and their analysis; Handling of dangerous commodities, precautions

f) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIIL

Sub: Syllabus for examination against filling up of ex-cadre post of
Sr. Instructor (LOCO) for BTC/KGPW under PSTC:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

- a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation , Inter Departmental Co-operation
- b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.
- c) **Material Management:** Consumables, Imprest stores, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.
- d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites
- e) **Trade theory:** Safety, Firefighting, Machine drawings, Use of Pneumatic and Hydraulic portable tools, Mech. Fasteners, washer, sealing, locking of bolts, Clearance/Fits/Tolerance, Process of Heat treatment, gauges, templates Drilling, Shaping & Slotting Machines, Planers, Grinders; Lathe machines and different attachments & Cutting tools, JIGS and FIXURES; Hydraulic and Pneumatic circuits; Material handling equipment; Forging of ferrous and non-ferrous metals; Electric arc welding including CO₂ & MIG/TIG; Gas cutting; Lubricants, Types of Bearing/defect/maintenance ; Incentive scheme of Workshop/ Job card ;
- f) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIIW

Sub: Syllabus for examination against filling up of ex-cadre post of
Sr. Instructor (Wagon) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation , Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Trade theory:** Safety, Firefighting, Use of Pneumatic and Hydraulic portable tools, Mech. Fasteners, washer, sealing, locking of bolts, Clearance/Fits/Tolerance,: Brake gear-Repair/Adjustment; Analysis of wheel defects; corrosion on freight stock/prevention/modification etc. Electric arc welding including CO₂ & MIG/TIG; Gas cutting; Lubricants, Bearing/defect/maintenance ; Special features of Wagons; Overhauling & Testing of Air Brake Equipment including Bogie mounted Brake system /Vacuum Brake; Roller Bearings maintenance; UST of Axles; CBC; UIC/CASNUB components checking/repairs ; Incentive scheme of Workshop/ Job card ; Maintenance manuals for goods, IRCA Rules stock; Types of maintenance schedule of wagons ; Salient design aspects of high speed CONCOR container flat wagons; Instruction for operation and maintenance of BOBR; Equipment failure – train parting, etc. Derailment investigation – measurements to be taken and their analysis; Handling of dangerous commodities, symbols of their loading in wagons, precautions

f) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIID

Sub: Syllabus for examination against filling up of ex-cadre post of **Sr. Instructor (Diesel)** for BTC/KGPW under STC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Role of Senior Supervisors & Managerial skill:** Role of Supervisors, Leadership, Intrinsic Motivation, Inter Departmental Co-operation

b) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

c) **Material Management:** Consumables, Imprest stores, stock verification, stock and non-stock items, material procurement including inspection, passing of stores bills, surplus stores and its disposal including scrap, ABC analysis.

d) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

e) **Trade theory:** Types of IC Engines and working, classification; Tractive effort-speed characteristics and coefficient of Adhesion; Supercharging principles, methods and various testing parameters. Air and vacuum brakes, Fuel oil system, Lube oil system, Water cooling system, **Loco maintenance procedures**, wheel specification, bearing fitment, suspension system, Anti Collision Device-Operation and maintenance, WDG3A loco and bogie, Unit cam shaft, piston, piston ring, 251 plus cylinder head, valves, Double helix fuel injection pump, Fuel injection tube, Plate type lube oil cooler, Centrifugal lube oil cleaner, Air Drier. Load Box Testing.

f) Basic Mechanical Engineering.

g) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIIIF

Sub: Syllabus for examination against filling up of ex-cadre post of **Jr. Instructor-I (Fitter)** for BTC/KGPW under PSTC:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

B) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

c) **Trade theory:** Safety, Firefighting, Machine drawings, Use of Pneumatic and Hydraulic portable tools, Mech. Fasteners, washer, sealing, locking of bolts, Clearance/Fits/Tolerance, , Files, Chisel, Micrometer, screw gauges, Vice, Grinders ;Electric arc welding including CO₂ & MIG/TIG; Gas cutting ; PVC, Epoxy lying; Checking & welding repairs of BEML Bogie, ICF, FIAT, IR-20 Bogie; Draw Gear, Buffer & Head stock; Types of Bearings & Lubricators on wagons including BOBRN and BTPN ; corrosion; Material handling equipment; Air-Brake system including bogie mounted brake system, Incentive scheme of Workshop/ Job card ;

d) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIIIE

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-I (Elect) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

b) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

c) Trade theory: Traction Distribution system (25kv and 2 x 25 kv), SCADA, OHE, Station working Rules, Operation and maintenance of Circuit breakers, Safety issues related to TRD, Train Lighting; Air-Conditioning & Refrigeration; Power Distribution; Illumination; D.C. Motors; AC Motor; Transformer; Carbon Trading; Star rating

d) **General Electrical Engineering & Basic Electronics:** Current & Ohm's law; Simple D.C. Circuit; Magnetism and Electromagnetism ; D.C Generator and D,C, Motor; Batteries; Fundamental of AC; Single phase and three phase Current. Semiconductors; P-N junction, N-P-N junction, LED,

e) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIIIW

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-I (Welder) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

B) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

c) **Trade theory:** Welding Safety, Firefighting, Weld gauge; Welding Rectifier; Transformer; Semi automatic sub-merged Arc welding; Bench vices; Power Hacksaw; Grinder, Electric arc welding including CO₂ & MIG/TIG; Gas cutting; Welding defects, inspection, & testing of welds; Protective clothing; Reclamation/repairs of components by welding; selection of electrodes ; Incentive scheme of Workshop/ Job card; Specification of electrodes; Electrode driers; Fume hazards; H₂ , O₂ and C₂H₂ gases;

d) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIIID-M

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-I (Diesel-Mech) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

b) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

c) **Trade theory: Trade theory:** Types of IC Engines and working, classification; Supercharging principles, methods and various testing parameters. Air and vacuum brakes, Fuel oil system, Lube oil system, Water cooling system, **Loco maintenance procedures**, wheel specification, bearing fitment, suspension system, Anti Collision Device- Operation and maintenance, WDG3A loco and bogie, Unit cam shaft, piston, piston ring, 251 plus cylinder head, valves, Double helix fuel injection pump, Fuel injection tube, Plate type lube oil cooler, Centrifugal lube oil cleaner, Air Drier. Load Box Testing.

e) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIIIM

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-I (Machinist) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

B) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

c) **Trade theory:** Safety, Firefighting, Machine drawings, Use of Pneumatic and Hydraulic portable tools, Mech. Fasteners, washer, sealing, locking of bolts, Clearance/Limits /Fits/Tolerance, , Files, Chisel, Micrometer, screw gauges, Vice, Grinders ; Lathe machines, Wheel lathe & its various attachment, settings and operations; Drilling , shaping & slotting machines , Planers and Grinders ; Working of CNC Machines; Types of wheel used in rolling stocks, wheel defects, standard & worn out wheel profiles; Material handling equipment; Incentive scheme of Workshop/ Job card ;

d) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIIIT

Sub: Syllabus for examination against filling up of ex-cadre post of **Jr. Instructor-I (Turner)** for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

B) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

c) **Trade theory:** Safety, Firefighting, Machine drawings, Use of Pneumatic and Hydraulic portable tools, Mech. Fasteners, washer, sealing, locking of bolts, Clearance/Limits /Fits/Tolerance, , Files, Chisel, Micrometer, screw gauges, Vice, Grinders ; Lathe machines, Wheel lathe & its various attachment, settings and operations; Drilling , shaping & slotting machines , Planers and Grinders ; Working of CNC Machines; Types of wheel used in rolling stocks, wheel defects, standard & worn out wheel profiles; Material handling equipment; Incentive scheme of Workshop/ Job card ;

d) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIIIP

Sub: Syllabus for examination against filling up of ex-cadre post of **Jr. Instructor-I (Painter)** for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

B) **Basic knowledge of Computer:** Various terminologies used, Role of Computers in daily life, advantages, various railway oriented web sites

c) **Trade theory:** Safety, Firefighting, Types of Rolling stocks used on Indian Railways, Painting schedule of coaches including LHB; Use of Manual & automatic painting equipments, Grit/sand Blasting, electrostatic painting, Details about painting booth; Types of paints, Fillers, Putty, Primers, PU paints specification and properties; surface preparation for painting and phosphating; Safety during painting, Incentive scheme of Workshop/ Workshop accounting/Job card;

d) **Rajbhasha:** Basic Knowledge on Rajbhasha (Hindi Official language)

Annexure-BIVF

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-II (fitter) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

b) **Trade theory:** Safety, Firefighting, Machine drawings, Use of Pneumatic and Hydraulic portable tools, Mech. Fasteners, washer, sealing, locking of bolts, Clearance/Fits/Tolerance, , Files, Chisel, Micrometer, screw gauges, Vice, Grinders ;Electric arc welding including CO₂ & MIG/TIG; Gas cutting ; PVC, Epoxy lying; Checking & welding repairs of BEML Bogie, ICF, FIAT, IR-20 Bogie; Draw Gear, Buffer & Head stock; Types of Bearings & Lubricators on wagons including BOBRN and BTPN ; corrosion; Material handling equipment; Air-Brake system including bogie mounted brake system, Incentive scheme of Workshop/ Job card ;

Annexure-BIVE

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-II(Elect) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

b) **Trade theory:** Traction Distribution system (25kv and 2 x 25 kv), SCADA, OHE, Station working Rules, Operation and maintenance of Circuit breakers, Safety issues related to TRD, Train Lighting; Air-Conditioning & Refrigeration; Power Distribution; Illumination; D.C. Motors; AC Motor; Transformer; Carbon Trading; Star rating

c) **General Electrical Engineering & Basic Electronics:** Current & Ohm's law; Simple D.C. Circuit; Magnetism and Electromagnetism ; D.C Generator and D,C, Motor; Batteries; Fundamental of AC; Single phase and three phase Current. Semiconductors; P-N junction, N-P-N junction, LED,

Annexure-BIVW

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-II (Welder) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

b) **Trade theory:** Welding Safety, Firefighting, Weld gauge; Welding Rectifier; Transformer; Semi automatic sub-merged Arc welding; Bench vices; Power Hacksaw; Grinder, Electric arc welding including CO₂ & MIG/TIG; Gas cutting; Welding defects, inspection, & testing of welds; Protective clothing; Reclamation/repairs of components by welding; selection of electrodes ; Incentive scheme of Workshop/ Job card; Specification of electrodes; Electrode driers; Fume hazards; H₂ , O₂ and C₂H₂ gases;

Annexure-BIVD-M

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-II(Diesel-Mech) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

b) **Trade theory: Trade theory:** Types of IC Engines and working, classification; Supercharging principles, methods and various testing parameters. Air and vacuum brakes, Fuel oil system, Lube oil system, Water cooling system, **Loco maintenance procedures**, wheel specification, bearing fitment, suspension system, Anti Collision Device-Operation and maintenance, WDG3A loco and bogie, Unit cam shaft, piston, piston ring, 251 plus cylinder head, valves, Double helix fuel injection pump, Fuel injection tube, Plate type lube oil cooler, Centrifugal lube oil cleaner, Air Drier. Load Box Testing.

Annexure-BIVM

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-II (Machinist) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

b) **Trade theory:** Safety, Firefighting, Machine drawings, Use of Pneumatic and Hydraulic portable tools, Mech. Fasteners, washer, sealing, locking of bolts, Clearance/Limits /Fits/Tolerance, , Files, Chisel, Micrometer, screw gauges, Vice, Grinders ; Lathe machines, Wheel lathe & its various attachment, settings and operations; Drilling , shaping & slotting machines , Planers and Grinders ; Working of CNC Machines; Types of wheel used in rolling stocks, wheel defects, standard & worn out wheel profiles; Material handling equipment; Incentive scheme of Workshop/ Job card ;

Annexure-BIVT

Sub: Syllabus for examination against filling up of ex-cadre post of **Jr. Instructor-II (Turner)** for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

b) **Trade theory:** Safety, Firefighting, Machine drawings, Use of Pneumatic and Hydraulic portable tools, Mech. Fasteners, washer, sealing, locking of bolts, Clearance/Limits /Fits/Tolerance, , Files, Chisel, Micrometer, screw gauges, Vice, Grinders ; Lathe machines, Wheel lathe & its various attachment, settings and operations; Drilling , shaping & slotting machines , Planers and Grinders ; Working of CNC Machines; Types of wheel used in rolling stocks, wheel defects, standard & worn out wheel profiles; Material handling equipment; Incentive scheme of Workshop/ Job card ;

Annexure-BIVP

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-II (Painter) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

b) **Trade theory:** Safety, Firefighting, Types of Rolling stocks used on Indian Railways, Painting schedule of coaches including LHB; Use of Manual & automatic painting equipments, Grit/sand Blasting, electrostatic painting, Details about painting booth; Types of paints, Fillers, Putty, Primers, PU paints specification and properties; surface preparation for painting and phosphating; Safety during painting, Incentive scheme of Workshop/ Workshop accounting/Job card;

Annexure-BIVCT

Sub: Syllabus for examination against filling up of ex-cadre post of
Jr. Instructor-II (Carpenter) for BTC/KGPW under PSTC/KGP:

Ref: WPO/KGPW's letter No.1287/Panel/STC & BTC/3197 dated 05-09-2013

Syllabus:

a) **Labour Laws & Personal Matters:** Establishment rules, Leave Rules, Pay and Allowance, Pension and PF Rules, Pass Rules. Hours of Employment Regulation, Conduct Rules-1966, Discipline and Appeal Rules-1968.

b) **Trade theory:** Safety, Firefighting, Types of Rolling stocks used on Indian Railways, Classification of timbers, selection of timber, types of Indian timber, seasoning of wood, various types of defects in timber; Classification of tools, marking, measuring, inspecting tools, Cutting/Planning/Boring and Drilling tools ,Striking and Fixing, Miscellaneous tools ; Various types of joints, joints used in railways, Care and maintenance of joints , Reading and understanding drawings, Marking of drawing and cutting patterns ; Auxiliary materials, Natural Fibre, Thermoset Composite (NFTC) & Fibre Reinforced Plastic (FRP), Technology, properties & advantages, Fitment of FRP items and Modules; Incentive scheme of Workshop/ Workshop accounting/Job card