

REVISED SYNOPSIS, SESSION PLAN & SYLLABUS OF IRSEE BATCH PROBATIONARS - PHASE - II
(Total 6 Weeks = 120 Sessions)

w.e.f. IRSEE-2017 Batch

03.07.2018

FACULTY DESIGN. With NAME (S/Shri)	SUBJECTS & TOPICS	Nos. of Sessions				
		Classroom	LAB	Sub.Exam.	Outside Visits	TOTAL
P/Loco (NMR) (TRS-Conv.Loco)	Traction Rolling Stock (Maintenance) - Conventional Locomotives - 01. POH& MTR of Electric Locomotives. 02. UES& Must Change Items, RSP, M&P and idea of budget. 03. Bogie repairs. 04. Traction Motor Maintenance. 05. Case Studies of Unscheduled Liftings. 06. Reliability and performance of Loco, Analysis of Failures, FRPCPY and Reliability action plan (RAP) for important failure prone equipments like SIV, MPCS etc. 07. MSG items, latest developments in TRS. 08. Advancement and latest development in loco like DPWCS, Vigilance Control Device(VCD). 09. Various SMIs, TC & Modification Sheets issued by RDSO.	10	2	1	0	15
AP/PSTC (NDT) (Conv.EMU/MEMU)	EMU/MEMU (Conventional) - 01. Reliability and performance of EMU & MEMU.	2	0	0	0	
** Exam. for 50 Marks will be taken for TRS(Maintenance)-Conventional Loco & Conventional EMU/MEMU						
SP/A (SND) (TRS-3 PH Loco)	Traction Rolling Stock (Maintenance) - 3 Phase Locomotives- 01. POH & MTR of Electric Locomotives & EMUs. 02. UES & Must Change Items, RSP, M&P and idea of budget. 03. Bogie repairs. 04. Traction Motor Maintenance. 05. Under-frame- Springs, Gears, wheels, axle-box, wheel-profile. 06. Roller Bearings, fits & tolerances. 07. Case Studies of Unscheduled Liftings. 08. Reliability and performance of Loco, Analysis of Failures and Reliability action plan for important failure prone equipment like Traction converters, Auxiliary converters, sensors etc. 09. MSG items, latest developments in TRS. 10. Advancement and latest development in 3 phase loco and EMU like DPWCS, VCD, AWS/TPWS, Train Set, HOG. 11. Various SMIs, TC & Modification Sheets issued by RDSO.	10	2	1	4	17
** Exam. for 50 Marks will be taken for TRS(Maintenance)-3 Phase Loco & 3 Phase EMU/MEMU						
Lecturer (CMR) (Traction Operation)	Traction Rolling Stock (Operations) - 1. Trouble shooting of locos- Electrical and Pneumatic. 2. SPAD-causes and precautions to avoid. 3. Tips for good engineman-ship to avoid stalling, parting, Wheel-skidding. 4. Axle locking and wheel floating for conventional & 3 Phase locos. 5. Line Haul Cost, LHC calculation and controlling factors. 6. Traction Mechanics-Adhesion, Tractive effort etc. 7. Crew Review and Crew Review calculation. 8. Classification of accidents, Accident Enquiry & Management (including issues related to C&W, engg, S&T, traffic operation etc.), CRS inquiry.	9	0	1	0	10

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P/Traction (ATD) (Traction Distribution)	Traction Distribution - 1. Study of drawings (LOP, SED etc.). 2. Protective scheme of 25 kV Traction Substation. 3. Maintenance Schedules of OHE, PSI & TSS and ATD maintenance issues. 4. Types of TRD Break Downs/Disaster Management. 5. Panto entanglements. 6. Various types of traction-tariff, Regulatory Authorities. 7. Latest developments in TRD, OLIVIR-G, 2x25KV system, High Reach OHE for DFC. 8. MSG Meeting Items, SMIs & Technical Circulars issued by RDSO. 9. RE Projects - Appraisal & Justification and execution. 10. Commissioning and CRS inspection.	13	2	1	0	16
** Exam. for 50 Marks will be taken for Traction Distribution(TRD)						
SP/GS (HRK) (TL&AC-LHB)	TL & AC - LHB Coaches - 1. Failures of LHB equipment & remedial Action Plan. 2. Fire in coaches - causes, remedies & case-studies. 3. LHB Coaches - depot-maintenance, downloading of failure-data. 4. Manufacturing & POH activities of coaches. 5. Reliability Action Plan & Instructions of Rly. Board. 6. MSG Meeting Items. 7. Important SMIs & Modification sheets issued by RDSO.	7	2	1	0	10
P/Electronics (HKS) (TL&AC-ICF)	TL & AC - ICF Coaches - 1. Failures of TL & AC equipment & remedial Action Plan. 2. Fire in coaches - causes, remedies & case-studies. 3. Depot-maintenance, downloading of failure-data. 4. Manufacturing & POH activities of coaches. 5. 16/20 Point Action Plan & Instructions of Rly. Bd. 6. MSG Meeting Items. 7. Important SMIs & Modification sheets issued by RDSO 8. DOs & DONTs on Works Contract & Vigilance - Case Studies. 9. PPP mode of contracting.	5	2	0	4	11
** Exam. for 50 Marks will be taken for TL&AC - LHB Coaches and TL&AC - ICF Coaches						
SP/GS (HRK) (Gen.Services)	General Services - 1. Failures of distribution transformers and Safety devices. 2. Electrical Fires in stationary installations - Causes and Prevention. 3. I.E. Act, Rules, Energy Conservation Act. 4. Welding systems, energy metering. 5. Energy efficient Lighting technology & SCADA in General Services. 6. Power supply Management, Tariff, Open Access, Power Trading, SLDC. 7. Power factor improvement and Methodology of BEE for energy conservation.	4	0	1	0	5
** Exam. for 50 Marks will be taken for General Services and Green Energy & Energy Conservation						

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SP/M (AKM) (Green Energy)	Green Energy & Energy Conservation - 1. Global Warming, Green Energy & Role of Electrical Engineers. 2. BEE's latest Directives, Building Code (ECBC). 3. Solar PV system & solar water heating. 4. Wind energy system. 5. Solar cum wind energy hybrid system. 6. Latest Policies of MNRE.	5	2	0	4	11
** Exam. for 50 Marks will be taken for General Services and Green Energy & Energy Conservation						
SP/M (AKM) (Condition Monitoring)	Non Destructive Tests - 1. Introduction to Non-destructive Testing (NDT). 2. Magnetic Particle Testing. 3. Liquid Penetrate Testing. 4. Eddy Current Testing. 5. Ultrasonic Testing. 6. Acoustic Emission Testing. 7. Thermal Imaging (Infra Red) Testing. 8. Radiography Testing.	4	2	1	0	7
** Exam. for 50 Marks will be taken for Condition Monitoring Only.						
P/Electronics (HKS) (Computer)	Computers - 1. Advance features of MS Office. 2. Cloud Computing. 3. e- Security, e-procurement, e-tendering & e-governance. 4. Use of Indian Language (Rajbhasha) on Computers. 5. Networking.	4	4	0	0	8
YOGA CLASSES	Bi-Weekly One Class will be planned for Yoga	0	4	0	0	4
GRAND TOTAL OF SESSIONS INCLUDING EXAM.		73	22	7	12	114

NOTE :- Existing Phase-II of 9 Weeks will be reduced by 1 Week in Rev.78 Weeks Trg.Schedule and further again reduced by 2 Weeks since, Energy Audit Course of 2 Weeks has not been added in Rev.78 Week Trg. Schedule which has to be added by instruction of Rly.Board's L.No.2012/Elect.(G)/152/4/Pt. Dtd. 20.06.2018.