



<b>SUBJECT NAME</b>	<b>INDUSTRIAL SAFETY, FIRST AID &amp; FIRE FIGHTING</b>
<b>SUBJECT CODE</b>	<b>MRT-06</b>
<b>MODULE</b>	<b>MSE, MJR &amp; MJI</b>

<b>SL NO.</b>	<b>TOPIC</b>	<b>TIME IN HRS</b>
1	Causes of fire; Identification of unsafe conditions and unsafe acts	02
2	Identifying and handling of various types of fire extinguishers	04
3	Precautions to be taken while extinguishing fire	02
4	Render first aid to the burn injuries Render first aid to persons affected by suffocation; Communication	02
5	Scope and Rules of first Aid; Structure and function of body	02
6	General idea about circulation of blood; Wound & Hemorrhages; Dressing & Bandages	02
7	Shock & its management; Asphyxia & Artificial respiration	02
8	Injuries to bones & joints - fractures; Unconsciousness and General rules for the treatments of unconsciousness person	02
9	Practical demonstration of Transport of injured persons, stretcher exercises, preparing and blanketing stretcher, Basic Life Support Training	03
10	Principles of Accident, Causation & its Prevention, Unsafe Acts & Unsafe Conditions	03
11	House Keeping, EOT Crane Operation & Material Handling, 5S	02
12	Safety on Small Tools, Electrical Appliances, Welding & cutting gases, Working on heights	02
13	Use of PPE, Mock Drills	03
14	Role of Supervisors on Safety, Accident Reporting & Investigations	02
15	Review	03
	<b>Total</b>	<b>36</b>

<b>SUBJECT NAME</b>	<b>TENDERS &amp; CONTRACT MANAGEMENT</b>
<b>SUBJECT CODE</b>	<b>MRT-07</b>
<b>MODULE</b>	<b>MSE, MJR &amp; MJJ</b>

<b>SL NO.</b>	<b>TOPIC</b>	<b>TIME IN HRS</b>
1	Introduction on Estimate preparation to sanctioning and from Detailed Estimate to entering into contract agreement	02
2	Overview of contract management	02
3	Types of contracts, revenue contracts / work contracts, schedule of powers for approval of works, works programme	03
4	Service Contracts, GCC for services, SBD	03
5	Initiation of tenders, Types of tenders, Selection of tenders Sanction to float tender & Tender notice	03
6	Preparation of tender documents, Elements of tender document, General conditions of contract, Special conditions of contract, Tender rules and clauses	03
7	Awareness about features of IREPS, Tender opening and processing, Opening of tenders, Tabulation statement & Briefing note	03
8	Finalization of tenders - Technical evaluation, Tender committee nomination, Tender committee deliberations and recommendations	03
9	Awarding of Contract, Acceptance of tender, Issue of letter of acceptance & Starting of contract	03
10	Execution of Contract- Fulfillment of contract obligations, Inspection of work, Record of work done, Payment to the contract & Monitoring of progress, Shramik kalyan portal	03
11	Vigilance angle to contracts, Do's and Don'ts, Arbitration	02
12	Case Studies, cases in workshops, open line & Diesel Sheds, Mechanized Laundry Contract under BOOT model	04
13	Review	02
	<b>Total</b>	<b>36</b>

<b>SUBJECT NAME</b>	<b>MANAGERIAL SKILLS</b>
<b>SUBJECT CODE</b>	<b>MRT-09</b>
<b>MODULE</b>	<b>MSE, MJR &amp; MJI</b>

<b>SL NO.</b>	<b>TOPIC</b>	<b>TIME IN HRS</b>
1	Leadership	12
2	Motivation	06
3	Communication Skills	09
4	Time Management	03
5	Stress management	03
6	Ethical Decision-making	03
7	Computer Applications: Word, Excel, Power Point; including Hands on in Computer Lab	09
8	Project management Concepts	15
9	Teamwork & Teambuilding	06
10	Negotiations	06
	<b>Total</b>	<b>72</b>

<b>SUBJECT NAME</b>	<b>COMPUTER AWARENESS</b>
<b>SUBJECT CODE</b>	<b>MRT-14</b>
<b>MODULE</b>	<b>MJI, MJP</b>

<b>SL NO.</b>	<b>TOPIC</b>	<b>TIME IN HRS</b>
1	Introduction to Computers and Application of Computers/Windows, CMM, FMM	06
2	MS Word	09
3	MS Excel	09
4	MS Power Point	06
5	Internet usage	03
6	Review	03
	<b>Total</b>	<b>36</b>

<b>SUBJECT NAME</b>	<b>TECHNICAL ENGLISH</b>
<b>SUBJECT CODE</b>	<b>MRT-15</b>
<b>MODULE</b>	<b>MJI</b>

<b>SL NO.</b>	<b>TOPIC</b>	<b>TIME IN HRS</b>
1	Communication Vocabulary	03
2	Grammar - Important terms	06
3	Common Errors	06
4	Precis writing, Expansion of given idea	03
5	Comprehension	03
6	Official Correspondence	03
7	Business Correspondence	03
8	Social Correspondence	03
9	General Report Writing	03
10	Technical Report Writing	03
	<b>Total</b>	<b>36</b>

<b>SUBJECT NAME</b>	<b>DIESEL LOCOMOTIVE THEORY (Common.) - 01</b>
<b>SUBJECT CODE</b>	<b>MDT-01</b>
<b>MODULE</b>	<b>MSE-D, MJR-D, MJI-D</b>

<b>Sl. No.</b>	<b>Topic</b>	<b>Duration in Hours</b>
1	Lay out of Locomotives, Single/Dual Cab design, Types of I.C. Engines and working, classification	06
2	Traction Machine, Tractive effort-speed characteristics and coefficient of Adhesion (Alco & HHP)	06
3	Supercharging principles, methods and various testing parameters, Air and Computer control brake system (Alco & HHP)	06
4	Fuel system - components, function, defects and remedy, Fuel injection system (Alco & HHP)	06
5	Lube oil system - components, function, defects and remedy (Alco & HHP)	06
6	Cooling water system - components, function, defects and remedy, Radiator fan - principle, operation and maintenance (Alco & HHP)	06
7	Layout of shop and shed, Schedule of maintenance (Alco & HHP), Shed management, Record keeping, Outages, Super checking	06
8	Loco maintenance procedure; Bogies- types, load transfer, transmission of TE, suspension system; Cattle guard, gear case, wheel profile, specification & defect, coupling, bearing fitment etc. (Alco & HHP)	06
9	REMMLOT and Vigilance Control Device	06
10	GE locos- introduction, features, advantages etc	06
11	Various types of Transmission, feature of an Ideal transmission in Diesel Loco, AC-DC, AC-AC transmission	12
12	Various rotating equipment such as TA, TM, EG/CA, AG, DB Blower, Fuel booster pump motor - Description /Overhauling/Repair/Testing, common problems & remedy (Alco & HHP), ECC & CCEM in Alco	18
13	Excitation systems and Dynamic brake system (Alco & HHP), Transition system - circuit analysis, defects and remedy for Alco	12
14	Microprocessor based controls, APU, DEMU DPC, Distributed Power Control System (DPCS)	12
15	Types of governors, overhauling procedure, testing methods	12
16	Various safety & Misc items- Cab equipment, Driver seat, Wiper, Horn, Head light, Sanding equipment, Hand brake, Emergency switches and alarm fitted in Loco - working principles (Alco & HHP)	12
17	Testing of Engines - Dry-run-Test, Blow-by test, Random test, Load Box testing, MU operation testing	06
	<b>Total</b>	<b>144</b>

## EXAMINATION PATTERN

<b>DIESEL</b>		
Subjects	Marks*	Total
MRT-06, 07, 09, 14 & 15	25 EACH	125
MDT-01	100	100
TOTAL		225