

B2	TELECOMMUNICATION	
	Basic concepts	Basic concepts of Railway Telecommunication, Telecommunication engineering Manual
	Land Line communications	Parameters, trenching, laying, jointing, termination of quad cables, testing, Faults, Localization and remedies in 4 quad/6quad cables, block working, LC gate communication & emergency communication, maintenance schedules and periodical tests.
	Optic Fiber Communication system	OFC system, Principles of working (PDH & SDH), OFC Channel testing, Ring protection and NMS. Construction details of Fibers and OFC, Laying details, Splicing.
	Cable	Tele cabling, characteristics of Tele cables, Cable laying, Parameters, Loading coils, Condenser joints, Balancing of cables, Testing, Cable faults, Localization, Rectification, Annual maintenance of cables in RE and Non-RE areas.
	Train traffic control	DTMF Signaling, control office setup at HQ, different controls like TC, Dy. TC, TPC, TLC, SM's control working at way station, DTMF Equipments 2W, 4W, 2W/4W combination, control testing, radio patching, HQ and divisional telecom test room, earthing, Lightning protection.
	VHF / Satellite systems / Mobile	Communication, propagation methods, types of aerials, antenna, feeder/coaxial cable/connectors for 25Watts & 5 Watt VHF sets including power supply, uses, installation, programming, testing & maintenance of VHF sets, limitations of VHF. VSAT, Hub earth station, space link, remote earth station, interface equipment, network control centre, bandwidth management, satellite block diagram, network component details- hub configuration, remote configuration, remote indoor unit, INMARSAT Satellite, Mobile communication.
	Power Plant practice	Types of batteries, FCBC, SMPS chargers, Battery charging, Installation, Maintenance practices.

41
01/05/24

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	Computer basics	Basic computer concepts, notebook computers (laptop computer), Personal Digital Assistant (PDA, also known as Palmtop computer), desktop computers (PCs), Work stations, Servers and Supercomputers. Memory, Peripherals including mouse, printers, interfaces, disks, drives, controllers, USB ports, power supply, operating system concepts- single user/multi user, GUI & application software. Web page concept, internet, worldwide web. e-mail and multimedia.
	Data Networks	Types of networks, Network topologies, IP & non-IP based networks, NIC, hubs, nodes, clients, gateways, Routers, switches, modems, ISDN, DSLs, connectors/adapters, data cables. Installation, commissioning and maintenance of datacom equipment in various LAN, WAN networks like Railnet, internet (TCP-IP), data loggers, FOIS, COIS/ICMS, CMS, COA, MIS, IREPS, PRIME, VSAT, PRS, UTS etc., bandwidth requirements, broadband, path protections, standards, scalability, IP addressing, IP planning, network/sub-network masking, data security & encryption levels, software, firewall, intrusion detection & protection, convergence, traffic monitoring, BER, jitter, wander measurements, testing of data channels of 2Mbps & 64 kbps speed, telnet, HTTP, FTP, maintenance using NMS and Do's & Don't's.
	Accident Communication	List of equipment in ART, testing, provision of accident/disaster management communication arrangements at site, divisional control room & Zonal HQ control room, Maintenance & inspection of ART equipment, Information to public.
	Auto Telephony and Electronic Telephone Exchanges	Auto Telephone Systems, SPC, PCM-TDM principles, Electronic Telephone Exchanges, speech, voice, data communications, signaling types, ISDN, WLL, Trunk Boards, Telephone traffic and dealing with telephone traffic at peak and slack hour working, system requirements, MDF/IDF wiring, cabling, power plant and protections, maintenance and repairs.


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Passenger Amenities	<p>Sound distribution, acoustic survey, defects & corrections, PA systems in yards, Platforms & conference halls, Paging and talk back in yards, Types of Microphone, Amplifiers, Loudspeakers, Acoustic characteristics of a meeting hall, video/audio conferencing.</p> <p>Passenger Amenity care on Railways, Enquiry Telecom system, Interactive Voice Response systems, prerecorded & PC based Auto announcing, train guidance/ indication boards, coach indication boards, touch screen kiosks, Voice Recorder, Passenger Reservation System, Digital Clocks, Fare display boards, Token Distribution System, Unreserved Ticketing System, PNR enquiry, accommodation availability, National Train Enquiry System, digital clocks (master-slave) , video surveillance system, various Faults, Localization of faults, all aspects of installation, commissioning and maintenance of the passenger amenities.</p>
Telecom Testing and Measuring instruments	<p>Insulation tester, meggar, Transmission measuring set, psophometer, X'talk measurement, CUM set, impedance balancing, cable fault locator, line tester, LAN/WAN analyser, frequency counter, power meter, programmable frequency scanner, field strength meter, different data analysers like communication, Ethernet, protocol analysers, BER meter, LAN meter.</p>
Telecom General	<p>Morning position, PTCC, Knowledge of PTCC manual, various standing committees at Central, State level, case clearance procedures from CEA & SLPTCC members, SACFA/WPC clearances, recommendations & standards CCIR/CCITT/IEEE/ITU.</p> <p>Inspections, maintenance schedules, records, reports, Drawings.</p>