

## Trades Details Summary

Trade Name	Description	Duration (Days)
<b>Basics of IT, S&amp;T in Indian Railway</b>	<b>To give Technical Training in Basics of Information Technology, Signaling &amp; Telecommunication in Indian Railway.</b>	<b>18</b>

### Theory (Basics of IT, S&T in Indian Railway)

Topic	Keylearning Outcomes	Equipment Required	Duration
Registration of participants	* Compliance of Covid-19 guidelines. * Making of participants Profile. & registration.	Bio-data form	2:0
Computer application	* Knowledge about computer Hardware. * Identification of interconnection of serial/parallel ports, interconnecting cables, power supply connection, UPS connection, monitor ports etc. * Identification of CPU mother board, RAM, CD-ROM, Hard disk, keyboard, mouse, printer, monitor , USB ports, Mic and speaker ports, Network interface card, network connector (RJ-45) Pin configuration. * Block diagram of computer organization, Different operating system, basic tasks of OS, Types of booting, Knowledge about BIOS, CMOS battery. * How to check SMPS of computer. * Windows operating system short cut keys. * Software packages MS-Word, MS-Excel, MS Power point. * Knowledge about menu driven commands. * Creating File , Folders, copying , moving of files , Finding files. * Knowledge about control panel and setting. * Taking print out.	Power point Presentations, Trainer Guide, White Board	14:0
Basics of Signaling System	<ul style="list-style-type: none"> <li>• What is meant by Signaling in Railways?</li> <li>• Types of Railway Signals.</li> <li>• Power supply arrangement for Signalling &amp; Telecommunication gears.</li> <li>• Various Signaling equipments in Indian Railway.</li> <li>• Basic knowledge of Modern Signaling. (IBS, Automatic block signaling, AWS, TPWS, TCAS, SSI etc)</li> </ul> *Working of Level Crossing Gates.	Power Presentations	10:0
Various networking Devices	* Knowledge about Router. * Knowledge about network Switch. * Server. * LAN Extender. * Line Driver. * Interface Cables. * PoE switch.	Power Presentations	2:0
Basics of Optical fibre communication & splicing practices	* Basic principles of optical fiber communication and its advantages over copper cable. * Construction of optical fibre cable. * Different types of optical fibre cables. * Different types of measurements. * Knowledge about splicing.	Power point Presentations	2:0
Different types of cables used in Telecom installations.	* Knowledge about Telecom cables, Indoor and Outdoor. * Study of different type of Indoor cable like Switch board cable, UTP, STP etc. * Study of different type of outdoor cable like, PIJF, PIQJF, Optical Fibre and various types of Signaling cable etc. *Testing of cables.	Power point Presentations	2:0
Cable laying practices	* Knowledge about cable laying practices. * Different measurements after cable laying.	Power Point Presentations, White Board	2:0
Basics of mobile communication	* Knowledge about different Frequency range. * Knowledge about VHF communication. * Study of GSM.	Power Point Presentations	2:0
Telecom Networking	* Study of different Topology used in Networking. * Advantages and disadvantages * IP address configuration.	Power Point Presentations	2:0
Basics of Primary and Secondary cells used in Indian Railways	* Knowledge about primary cells and secondary cells. * Different types of secondary cells. * Construction of lead acid cell and charging procedure. * Troubleshooting of lead acid cells and its indication and remedies.	Power Point Presentations	2:0

### Practical (Basics of IT, S&T in Indian Railway)

Topic	Keylearning Outcomes	Equipment Required	Duration
IT Practical (Hardware)	Learning of computer Hardware parts, different ports ,identification of CPU, mother board, RAM, CD-ROM, Hard disk, keyboard, mouse, printer, monitor , USB ports, Mic and speaker ports, Network interface card, how to make straight cable, cross cable with Cat-5.	Computer , stripper, modular plug crimper	10:0

IT Practical (Software)	Windows operating system short cut keys, Software packages MS-Word, MS-Excel, MS Power point. learning menu driven commands, Creating File , Folders, copying , moving of files , Finding files, Knowledge about control panel and setting.	Computer	10:0
Splicing Practical	Learning of construction of Optical fibre cable , tube and colour of fibre, Splicing practice.	Splicing tool kit	10:0
Cable jointing Practical	Cable meggering, Learning of construction of PIJF and Quad cable, counting of PIJF and Quad cable pairs, their jointing etc.	Cable jointing tool kit	10:0
Networking Practical	Learning of basic components of Networking, router, modem, LAN extender etc.	Instructor/Demonstrator	10:0
Demonstration of Signaling Equipments	Panel, Secondary cell, Relays, Point machine, Block Instruments, Soldering practices for signalling circuit, cable termination, cable meggering etc.	Instructor/Demonstrator	10:0

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