

Diploma Trainee (DT): Electrical

Item Grid:

Phase	Section	Topics
I	Aptitude	General English
		Quantitative aptitude
		Reasoning ability
II	Technical – Electrical	Electrical Basics
		Electrical Engineering Materials
		DC Machine, AC Machine & Transformer
		Analog Circuits/ Electronics
		Electrical Measurements & Measuring Instruments
		Control System
		Digital Electronics
		Generation, Transmission & distribution of Electrical Power
		Circuit Theory
		Network theory
		Microprocessor
		Power Electronics & Drives

Detailed syllabus provided below for PHASE I

General English

1. Reading comprehension
2. Verbal Ability
3. Antonyms
4. Synonyms
5. Grammar (sentence correction)
6. Idioms
7. Analogies

Quantitative aptitude

1. Arithmetic progression
2. Algebra
3. Permutation and combination
4. Percentages
5. Ratio & Proportions
6. Time-Speed-Distance

Reasoning ability

1. Positional/Seating arrangement
2. Directional Problem
3. Non-verbal reasoning

4. Assumption, premise, conclusion, linear and matrix arrangement
5. Clocks, calendars, binary logic
6. Coding & Decoding
7. Series

Detailed Syllabus provided for Phase II

Electrical Basics

1. Fundamentals
2. Magnetic circuit
3. A.C. Theory
4. Generation of Elect. Power
5. Conversion of Electrical Energy
6. Wiring and Power Billing
7. Measuring Instruments
8. Introduction to renewable power generation

Electrical Engineering Material

1. Conducting materials
2. Semiconducting materials
3. Insulating materials
4. Dielectric materials
5. Magnetic materials
6. Material for special purposes

DC/AC Machine & Transformer

1. Dc Generators
2. Dc motors
3. Single phase transformer
4. Auto transformer
5. Three phase transformer
6. Induction motor
7. Alternator
8. Synchronous Motor
9. Single Phase induction motor
10. AC commutator motors
11. Special Electric Machine
12. Three phase transformers

Analog Circuits/ Electronics

1. P-n junction diode
2. Special semiconductor devices
3. Rectifier circuits & filters

4. Transistors
5. Transistor circuits
6. Transistor amplifiers & oscillators
7. Field effect transistor
8. Operational amplifiers

Electrical Measurements & Measuring Instruments

1. Measuring instruments
2. Analog ammeters and voltmeters
3. Wattmeter and measurement of power
4. Energy meters and measurement of energy
5. Measurement of speed, frequency and power factor
6. Instrument transformer
7. Measurement of resistance
8. Measurement of inductance and capacitance
9. Digital instruments

Control System

1. Signal flow graph
2. Time response of system
3. Analysis of stability
4. Frequency response of system
5. Niquiest plot

Digital Electronics

1. Number Systems and Codes
2. Logic Gates
3. Boolean Algebra
4. Combinational Circuits
5. Sequential Circuits
6. Logic Families
7. Counters
8. Registers
9. Digital to analog converters
10. Analog to Digital Converters
11. Display Devices

Generation, Transmission & distribution of Electrical Power

1. Generation of electricity
2. Transmission of electric power
3. Overhead line
4. Performance of short & medium lines
5. EHV transmission
6. Distribution System

7. Underground cable
8. Economic Aspects
9. Types of tariff
10. Substation

Circuit and Network Theory

1. Circuit elements and laws
2. Magnetic circuits
3. Network analysis
4. Network theorems
5. Ac circuit and resonance
6. Coupled circuits
7. Transients
8. Two-port network
9. Filters

Microprocessor

1. Introduction to microprocessor & Micro controller
2. 8085A microprocessor Architecture
3. Instruction set of Intel 8085A
4. 8085 A programming
5. Memory and I/O Interfacing
6. Peripheral Interface
7. Interfacing DAC & ADC
8. Application of 8085 A

Power Electronics & Drives

1. Thyristor
2. Firing Circuits For Thyristor
3. Phase Controlled Rectifier
4. Inverter
5. Chopper
6. Cyclo Converter
7. Power Semiconductor Devices
8. Thyristor Applications
9. A.C & D.C Drives