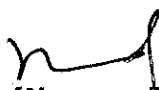


Syllabus for Law Officer – Trainee Post

Indicative Syllabus

1. Indian Penal code & Bharatiya Nyaya Sanhita (BNS)
2. Code of Civil Procedure
3. Code of Criminal Procedure & Bharatiya Nagarik Suraksha Sanhita (BNSS)
4. Indian Evidence Act & Bharatiya Sakshya Adhiniyam (BSA)
5. Constitutional Law of India
6. Law of Property
7. Contract Act
8. Limitation Act
9. Specific Relief Act
10. Registration Act
11. The Negotiable Instruments Act
12. Companies Act
13. Indian Partnership Act
14. Electricity Act 2003
15. The Arbitration and Conciliation Act,
16. Human Rights and Public International Law
17. Labour Laws
18. Tax Laws
19. General Legal English
20. Environmental Laws of India
21. Laws of Torts Consumer Protection Act, 2019
22. Land Law in M.P.
23. Law Relating to Women, Children, Poverty & their development
24. Consumer Protection Act
25. Legal Theory (Legal Theory, Jurisprudence & Comparative Law)
26. Public Interest Lawyering, Legal AID and Para Legal Services
27. Equity Trust Specific relief and Other Fiduciary obligation
28. Family Law
29. Professional Ethics, Accountability for lawyers and Bar Bench Relations
30. Administrative Law
31. Legislative Drafting & Interpretation Statutes
32. Criminology, Penology and Criminal Administration
33. Drafting, Pleadings, Conveyancing & Professional Ethics
34. Forensic Science Handwriting & Finger Print Science
35. Socio-Economic Offences

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).


(Naveen Pandey)
Superintending Engineer- I

Syllabus for Line Attendant Trainee/Substation Attendant Trainee Post

Indicative Syllabus

1. Engineering Drawing
2. Workshop calculation and science
3. DC Machines
4. Earthing
5. Measurement and Instrumentation
6. Electrical Components
7. Induction Motors
8. Cables

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).


(Naveen Pandey)
Superintending Engineer- I

Syllabus for Junior Engineer (Transmission) Post

1. Fundamentals of Electrical Engineering
 - Resistance, Inductance, Capacitance
 - Current, Voltage, Power, Energy
 - Kirchhoff's Law
 - Magnetic Materials
 - Electromagnetic Induction
 - Self and Mutual Induction
 - AC Fundamentals
2. Electrical Circuits
 - Network Reduction
 - Network Theory
 - Single Phase AC Circuits
 - Three Phase Circuits
3. Electrical Machines
 - DC Machine
 - Single and Three Phase Transformers
 - Single Phase Induction Motors
 - Three Phase Induction Motors
 - Synchronous Machines
4. Power System
 - Economics of Power Generation
 - Generating Stations
 - AC Distribution Systems
 - Components of Transmission and Distribution
 - Extra High Voltage Transmission
 - Transmission Line Parameters
5. Electrical Estimation and Contracting
 - Electrical Installation and Safety
 - Estimation and Costing
 - Industrial Installation
 - Non-Industrial Installation
 - Public Lighting Installation
6. Utilization of Electrical Energy
 - Domestic Electrical Appliances
 - Electric Drives
 - Electric Traction
 - Electrical Heating
 - Elevators
 - Illumination



SEI

7. Power Electronics

- Industrial Control Circuits
- Phase Controlled Rectifiers
- Power Electronic Devices
- Thyristors
- Turn-On and Turn-Off methods of Thyristors

8. Electrical Engineering Materials

- Batteries
- Conducting Materials
- Dielectric Materials
- Insulating Materials
- Magnetic Materials
- Semi-conducting Materials
- Fuse, Soldering and Thermocouple Materials

9. Basic Electronics

- Basics of Semiconductor
- PN Junction Diode
- Bipolar Junction Transistor
- Field Effect Transistor
- Operational Amplifier

10. Measurements

- Analog Instruments
- AC Voltmeters
- Error Analysis
- Instrument Transformer
- LCR Bridge
- Measurement of Energy and Power
- Potentiometers and Q meter

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).


(Naveen Pandey)
Superintending Engineer- I

SYLLABUS FOR SURVEYOR ATTENDANT POST

- Concept of drawing & sheet layout following safety precautions viz Demonstrate of tools & equipment used in the trade. 2. Occupational safety & Health. 3. Introduction of safety equipment's and their uses. 4. Introduction of first aid, health, safety & environmental guidelines, legislations & regulations as applicable. Hazard identification and avoidance, Safety signs for Danger. 7. Use of drawing instruments and equipment's with care. 8. Method of fixing of drawing sheet on drawing board. 9. Layout of different size of drawing sheet and folding of sheets.
- Basics of drawing viz Draw lettering & numbering applying drawing instruments & Draw plain geometrical figures, curves & conics, Construct plain scale, diagonal scale, comparative scale, Vernier scale & Draw conventional signs & symbols used in surveying.
- Performing site survey using chain/ tape/prismatic compasses & preparation of a site plan.
- Performing theodolite survey & Perform traverse survey by theodolite & preparation a site map.
- performing topography map using level instrument with contours
- Determination of R.L & heights of different points by levelling instruments. & performing a transmission line site survey work & preparation line profile; survey for levelling of land & transferring the reduced level from permanent bench mark to substation land & upto towers. Preparation of temporary bench mark and survey on the basis and linking temporary and permanent bench marks & corresponding data
- Concept & set out of curves
- Performing tachometric survey using tachometer
- Performing survey work using modern survey instruments (Total station) for preparation of a map/block plan/line profile & calculation of most economical level of land.
- Concept of cadastral survey & make a site plan. Perform survey work to prepare a topographical map, cadastral map (mouza map), road Project (Survey camp in a suitable hilly/undulated area, obtaining knowledge of khasra map, Panchsala khasra, Panchnama & other revenue records related transmission projects.
- Performing AutoCAD drawing Demonstrate basic mathematical concept and principles to performing practical operations. Understand and explain basic science in the field of study. Performing Auto Cad drawing (single/double story building, transformers, substation layout & other structures/and line profiles . Performing AutoCAD drawing from field survey data. Preparation of detail estimate of the building.
- Concept & draw cartographic projection
- Planning and preparation of setting of GIS & GPS, techniques in various fields & preparation of digital record from survey data.
- Performing Hydrographic survey (cross section & velocity determination) using hydrographic survey instruments.
- Performing the site survey using plane table
- Performing a road project survey & railway line site survey/ line survey using modern survey instruments.
- Performance of Drone survey, method and concept.
- Demonstrating basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study.

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(Naveen Pandey)
Superintending Engineer- I

Syllabus for Junior Engineer (Civil) Trainee Post

Indicative Syllabus:

1. Advanced Construction Technology
2. Building Construction
3. Concrete Technology
4. Construction Management
5. Construction Materials
6. Design of Steel and RCC Structure
7. Environmental Science
8. Estimating and Costing
9. Geo Technical Engineering - Soil Mechanics
10. Hydraulics
11. Mechanics of Materials
12. Pavement Design and Maintenance
13. Surveying
14. Theory of Structure
15. Traffic Engineering
16. Transportation Engineering
17. Water Resource Engineering- irrigation
18. Public Health Engineering

Note: The above syllabus is indicative in nature and candidates are advised to cover all the topics under academic curriculum of essential qualification of the post for Online Examination (CBT).


(Naveen Pandey)
Superintending Engineer- I

Syllabus for Assistant Engineer (Transmission) (Electrical) – Trainee Post

1. Electric Circuits: Network Elements: Ideal voltage and current sources, R, L, C, M elements, Network graph, KCL, KVL, Node and Mesh analysis, Transient response of dc and ac networks, Sinusoidal steady state analysis, Resonance, Passive filters, Ideal current and Voltage sources. Thevenin's Theorem, Norton's Theorem, Superposition Theorem, Maximum Power Transfer theorem, Two- port networks, Three phase circuits, star-delta transformation, complex Power and power factor in ac circuits.

2. Electromagnetic Fields: Coulomb's Law, Electric Field Intensity, Electric Flux Density, Gauss's Law, Divergence, Electric field and potential due to point, line, plane and spherical charge distributions, Effect of dielectric medium, Capacitance of simple configurations, Biot-Savart's law, Amper's law, Curl, Farady's laws, Lorentz force, Inductance, Magneto motive force, Reluctance, Magnetic circuits, Self and Mutual inductance of simple configurations.

3. Signals and systems: Representation of continuous and discrete time signals, Shifting and scaling operations, Linear Time Invariant and Causal systems, Fourier series representation of continuous and discrete time periodic signals, Sampling theorem, Applications of Fourier Transform, Laplace Transform and z-Transform. R.M.S. value, average value calculation for any general periodic waveform.

4. Electrical Machines: Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests, regulation and efficiency; Three phase transformers: connections, vector groups, parallel operation; Auto transformer, Electromechanical energy conversion principles, DC machines: separately excited, series and shunt, motoring and generating mode of operation and their characteristics, starting and speed control of dc motors; Three phase induction motors: principle of operation, types, performance, torque-speed characteristics, no-load and blocked rotor tests, equivalent circuit, starting and speed control; Operating principle of single phase induction motors; Synchronous machines: cylindrical and salient pole machines, performance, regulation and parallel operation of generators, starting of synchronous motors, characteristics; Types of losses and efficiency calculations of electric machines.

5. Power Systems: Basic concepts of electrical power generation, AC and DC transmission concepts, Models and performance of transmission lines and cables, Economic Load Dispatch (with and without considering transmission losses), Series and shunt compensation, Electric field distribution and insulators, Distribution systems, Per- unit quantities, Bus admittance matrix, Gauss-Seidel and Newton-Raphson load flow methods, Voltage and Frequency control, Power factor correction, Symmetrical components, Symmetrical and unsymmetrical fault analysis, Principles of over- current, differential and distance protection; Circuit breakers, System stability concepts, Equal area criterion.

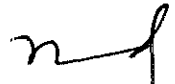
6. Control Systems: Mathematical modelling and representation of systems, Feedback principle, transfer function, Block diagrams and Signal flow graphs, Transient and Steady state analysis of linear time invariant systems, Routh-Hurwitz and Nyquist criteria, Bode plots, Root loci, Stability analysis, Lag, Lead and Lead- Lag compensators; P, PI and PID controllers; State space model, Solution of state equations of LTI systems, State transition matrix.

7. Electrical and Electronic Measurements: Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor, Instrument transformers, Digital voltmeters and multi meters, Phase, Time and Frequency measurement, Oscilloscopes, Error analysis.

8. Analog and Digital Electronics: Characteristics of diodes, BJT, MOSFET; Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: Biasing, Equivalent circuit and Frequency response; Oscillators and Feedback amplifiers; Operational amplifiers: Characteristics and applications; Single Stage Active filters, Active Filters: Sallen Key, Butterworth, VCOs and Timers, Combinational and Sequential logic circuits, Multiplexer, De-multiplexer, Schmitt triggers, Sample and hold circuits, A/D and D/A converters, 8085 Microprocessor: Architecture, Programming and Interfacing.

9. Power Electronics: Characteristics of semiconductor power devices: Diode, Thyristors, Triac, GTO, MOSFET, IGBT; DC to DC conversion: Buck, Boost and Buck-Boost converters; Single and three phase configuration of uncontrolled rectifiers, Voltage and Current commutated thyristor based converters, Bidirectional ac to de voltage source converters, Issues of line current harmonics for uncontrolled thyristor based converters, Power factor, Distortion factor of ac to de converters, Single phase and three phase inverters, Sinusoidal pulse width modulation

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(Naveen Pandey)
Superintending Engineer- I