

8.1 RECRUITMENT PROCESS: JE Category Posts

- Pattern of CBT

Duration : 90 minutes (120 Minutes for eligible PwBD candidates accompanied with Scribe)

No of Questions : 100

Syllabus: The Questions will be of objective type with multiple choices and are likely to include questions pertaining to General Awareness, Physics and Chemistry, Basics of Computers and Applications, Basics of Environment and Pollution Control and Technical abilities for the post. The syllabus for General Awareness, Physics and Chemistry, Basics of Computers and Applications, Basics of Environment and Pollution Control is common for all notified posts under this notification as detailed below:-

a) **General Awareness** :

Knowledge of Current affairs, Indian geography, culture and history of India including freedom struggle, Indian Polity and constitution, Indian Economy, Environmental issues concerning India and the World, Sports, General scientific and technological developments etc.

b) **Physics and Chemistry:** Up to 10th standard CBSE syllabus.

c) **Basics of Computers and Applications:**

Architecture of Computers; input and Output devices; Storage devices, Networking, Operating System like Windows, Unix, Linux; MS Office; Various data representation; Internet and Email; Websites & Web Browsers; Computer Virus.

d) **Basics of Environment and Pollution Control:**

Basics of Environment; Adverse effect of environmental pollution and control strategies; Air, water and Noise pollution, their effect and control; Waste Management, Global warming; Acid rain; Ozone depletion.

e) **Technical Abilities:**

The educational qualifications mentioned against each post shown in Annexure-A, have been grouped into different exam groups as below. Questions on the Technical abilities will be framed in the syllabus defined for various Exam Groups given at **Annexure-IA, IB, IC & ID.**

The section wise Number of questions and marks are as below:

Subjects	No. of Questions	Marks for each Section
General Awareness	10	10
Physics & Chemistry	10	10
Basics of Computers and Applications	7	7
Basics of Environment and Pollution Control	7	7
Technical Abilities	66	66
Total	100	100
Time in Minutes	90	

The section wise distribution given in the above table is only indicative and there may be some variations in the actual question papers.

Virtual calculator will be made available on the Computer Monitor during CBT.

Discipline Mapping Tables:- I)

Three years Diploma in Engineering or Bachelor's Degree in Engineering/Technology	Exam Group
Mechanical Engineering	Mechanical and Allied Engineering
Production Engineering	
Automobile Engineering	
Combination of any sub stream of basic streams of above disciplines	
Electrical Engineering	Electrical and Allied Engineering
Combination of any sub stream of basic streams of Electrical Engineering	
Electronics Engineering	
Instrumentation and Control Engineering	Electronics and Allied Engineering
Combination of sub streams of basic streams of above disciplines.	
Civil Engineering	
Combination of any sub stream of basic streams of Civil Engineering	Civil and Allied Engineering
B.Sc., in Civil Engineering of 3 years duration	

All the candidates with the above qualification shall be tested in the Exam Group mapped as per the above chart.

A candidate possessing more than one minimum educational qualification, mapped to different Exam Groups, can choose any one Exam Group. These candidates would be eligible for all the posts for which they possess minimum educational qualifications.

8.2 RECRUITMENT PROCESS: Technician Category Posts

Total Duration: 2 hours and 30 Minutes (for Part A and Part B together)

The CBT shall have two parts viz Part A and Part B as detailed below.

PART A

Duration: 90 Min,

No of Questions: 100

The marks scored in Part A alone shall be used for short listing of candidates for further stages of recruitment process subject to the condition that the candidate is securing qualifying mark in Part B.

The syllabus for Part A shall be as below

a. Mathematics Number system, BODMAS, Decimals, Fractions, LCM, HCF, Ratio and Proportion, Percentages, Mensuration, Time and Work; Time and Distance, Simple and Compound Interest, Profit and Loss, Algebra, Geometry and Trigonometry, Elementary Statistics, Square Root, Age Calculations, Calendar & Clock, Pipes & Cistern etc.

b. General Intelligence and Reasoning

Analogies, Alphabetical and Number Series, Coding and Decoding, Mathematical operations, Relationships, Syllogism, Jumbling, Venn Diagram, Data Interpretation and Sufficiency, Conclusions and decision making, Similarities and differences, Analytical reasoning, Classification, Directions, Statement - Arguments and Assumptions etc.

c. *Basic Science and Engineering*

The broad topics that are covered under this shall be Engineering Drawing (Projections, Views, Drawing Instruments, Lines, Geometric figures, Symbolic Representation), Units, Measurements, Mass Weight and Density, Work Power and Energy, Speed and Velocity, Heat and Temperature, Basic Electricity, Levers and Simple Machines, Occupational Safety and Health, Environment Education, IT Literacy etc.

d. **General Awareness on Current Affairs** in Science & Technology, Sports, Culture, Personalities, Economics, Politics and any other subjects of importance.

PART B

Duration: 60 Min, No of Questions: 75

Qualifying Mark: 35 % (This is applicable to all candidates and no relaxation is permissible)

This part is qualifying in nature and shall have questions from the trade syllabus prescribed by Director General of Employment & Training (DGET). Candidates with ITI/Trade Apprenticeship qualification will be required to appear in the section having questions from the relevant trade. The trade syllabus can be obtained from the **DGET website**.

8.3 RECRUITMENT PROCESS: Miscellaneous Category Posts

Chief Law Assistant:

(i) The Question Paper for Single Stage CBT will be of 90 minutes duration for 100 questions and 120 minutes for PwBD candidates who are availing the Scribe facility.

(ii) The Question Papers shall be of objective multiple-choice type.

(iii) The standard of questions for the Single Stage CBT will be generally in conformity with the educational standards prescribed for the posts. The questions pertaining to Professional Ability shall be from the syllabus of every notified post mentioned at **Annexure-IE**

(iv) Section-wise marks: The section wise number of questions and marks are detailed below -

Subject	Number of questions	Marks allotted
Professional Ability	50	50
General Awareness	15	15
General Intelligence and Reasoning	15	15
Mathematics	10	10
General Science	10	10
Total	100	100

Each question will be of one mark each.

The section wise distribution given in the above table is only indicative and there may be some variations in the actual question papers.

(v) The Questions will be of objective type with multiple choices and are likely to include questions pertaining to:

Mathematics:

Number Systems, BODMAS, Decimals, Fractions, LCM and HCF, Ratio and Proportions, Percentage, Mensuration, Time and Work, Time and Distance, Simple and Compound Interest, Profit and Loss, Algebra, Geometry and Trigonometry, Elementary Statistics, Square Root, Age Calculations, Calendar & Clock, Pipes & Cistern.

General Intelligence and Reasoning:

Analogies, Alphabetical and Number Series, Coding and Decoding, Mathematical Operations, Relationships, Syllogism, Jumbling, Venn Diagram, Data Interpretation and Sufficiency, Conclusions and Decision Making, Similarities and Differences, Analytical Reasoning, Classification, Directions, Statement- Arguments and Assumptions etc.

General Awareness:

Knowledge of Current Affairs, Indian Geography, Culture and History of India including freedom movement, Indian Polity and Constitution, Indian Economy, Environmental issues concerning India and the World, Sports, General scientific and technological developments etc.

General Science:

Physics, Chemistry and Life Sciences (up to 10th standard CBSE syllabus).

Junior Translator :

A single stage Computer Based Test will be conducted followed by a qualifying translation test. The Question Paper shall be designed to test equally both the knowledge of English language as well as knowledge of Hindi language. Atleast 50% of the questions will be designed to test language proficiency - 20% for English and 30% for Hindi. The remaining questions will be designed to test General Knowledge, General Intelligence, Simple Arithmetic and basics of computer.

Translation Test

(i) Translation Test shall not be a part of the main examination. Candidates 10 times the number of vacancies shall be called for the translation test, based on the merit of the objective type CBT, duly taking into account reservation requirements.

(ii) The Translation Test shall be only a qualifying test and the qualifying pass marks shall be 60%.

Merit list of Junior Translator will be based on the marks obtained in the CBT alone. Those who do not qualify in translation test with 60% marks shall be disqualified.

Syllabus for **Junior Translator** Category Posts is given in **Annexure-IF**

Staff Nurse:

- (i) **The Question paper for Single Stage CBT will be of 90 minutes duration for 100 questions** and 120 minutes for PwBD candidates who are availing the Scribe facility.
- (ii) The standard of questions for the Single Stage CBT(Computer Based Test) will be generally in conformity with the educational standards and/or minimum professional/technical qualifications prescribed for the posts. The questions will be of objective type with multiple choice and are likely to include questions pertaining to Professional ability (**syllabus at Annexure-IG**), General awareness, Arithmetic, General Intelligence & Reasoning, and General Science.

- (iii) Section-wise marks: The section wise number of questions and marks are detailed below

Subject	Number of questions	Marks allotted
Professional ability	70	70
General Awareness	10	10
General Arithmetic, General Intelligence and reasoning	10	10
General science	10	10
Total	100	100

9.0 NORMALISATION OF MARKS:

Short listing of Candidates shall be based on the normalized marks obtained by them if CBT is conducted in multiple sessions. The normalization scheme to be adopted for CBT detailed in following paragraphs.

CALCULATION OF NORMALIZED MARKS FOR MULTI-SESSION PAPERS: In CBT, the examination may have to be conducted in multiple sessions. For these multisession papers, a suitable normalization is applied to take into account any variation in the difficulty levels of the question papers across different sessions. The formula for calculating the normalized marks for the multi-session papers is detailed below:

Normalization mark of j^{th} candidate in i^{th} session \widehat{M}_{ij} is given by :

$$\widehat{M}_{ij} = \frac{\overline{M}_i^g - M_q^g}{M_{ii} - M_{iq}} (M_{ij} - M_{iq}) + M_q^g$$

M_{ij} : is the actual marks obtained by the j^{th} candidate in i^{th} session.

\overline{M}_i^g : is the average marks of the top 0.1% of the candidates considering all sessions.

M_q^g : is the sum of mean and standard deviation marks of the candidates in the paper considering all sessions.

M_{ii} : is the average marks of the top 0.1% of the candidates in the i^{th} session or marks of topper if session strength is less than 1000.

M_{iq} : is the sum of the mean marks and standard deviation of the i^{th} session.

10.0 HOW TO APPLY

Regular Employees of WCR who fulfills the eligibility criteria, may apply **ONLINE** through WCR website www.wcr.indianrailways.gov.in (Path - About us->Recruitment->Railway Recruitment Cell->GDCE Notification No. 02/2022)

- Candidates are required to go to the link provided for filling **ONLINE** application and fill up the personal details/BIO-DATA carefully.
- Candidates should ensure that their Name, Father's Name and Date of Birth match with the entries recorded in Matriculation or equivalent certificate, as well as service records.
- A colour photograph of size 3.5cm x 3.5cm (not older than three months from the date of application) with clear front view of the candidate without cap and sunglasses should be uploaded. The photo should be only in JPEG format. Candidates may note

Syllabus for Civil & Allied Engineering Exam Group – JE

Sl. No.	Subject
1	Engineering Mechanics- Force (resolution of force, moment of force, force system, composition of forces), Equilibrium, Friction, Centroid and Center of gravity, Simple machines.
2	Building Construction- Building components (substructure, superstructure), type of structure (load bearing, framed and composite structures).
3	Building materials- Masonry materials (stones, bricks, and mortars), Timber and miscellaneous materials (glass, plastic, fiber, aluminum steel, galvanized iron, bitumen, PVC, CPVC, and PPF).
4	Construction of substructure- job layout, earthwork, foundation (types, dewatering, coffer dams, bearing capacity).
5	Construction of superstructure- stone masonry, brick masonry, Hollow concrete block masonry, composite masonry, cavity wall, doors and windows, vertical communication (stairs, lifts, escalators), scaffolding and shoring.
6	Building finishes- Floors (finishes, process of laying), walls (plastering, pointing, painting) and roofs (roofing materials including RCC).
7	Building maintenance- Cracks (causes, type, repairs- grouting, guniting, epoxy etc.), settlement (causes and remedial measures), and re-baring techniques.
8	Building drawing- Conventions (type of lines, symbols), planning of building (principles of planning for residential and public buildings, rules and byelaws), drawings (plan, elevation, section, site plan, location plan, foundation plan, working drawing), perspective drawing.
9	Concrete Technology- Properties of various types/grades of cement, properties of coarse and fine aggregates, properties of concrete (water cement ratio, properties of fresh and hardened concrete), Concrete mix design, testing of concrete, quality control of concrete (batching, formwork, transportation, placing, compaction, curing, waterproofing), extreme weather concreting and chemical admixtures, properties of special concrete (ready mix, RCC, pre-stressed, fiber reinforced, precast, high performance).
10	Surveying- Types of survey, chain and cross staff survey (principle, ranging, triangulation, chaining, errors, finding area), compass survey (principle, bearing of line, prismatic compass, traversing, local attraction, calculation of bearings, angles and local attraction) leveling (dumpy level, recording in level book, temporary adjustment, methods of reduction of levels, classification of leveling, tilting level, auto level, sources of errors, precautions and difficulties in leveling), contouring (contour interval, characteristics, method of locating, interpolation, establishing grade contours, uses of contour maps), area and volume measurements, plane table survey (principles, setting, method), theodolite survey (components, adjustments, measurements, traversing), Tacheometric survey, curves (types, setting out), advanced survey equipment, aerial survey and remote sensing.
11	Computer Aided Design- CAD Software (AutoCAD, Auto Civil, 3D Max etc.), CAD commands, generation of plan, elevation, section, site plan, area statement, 3D view.
12	Geo Technical Engineering- Application of Geo Technical Engineering in design of foundation, pavement, earth retaining structures, earthen dams etc., physical properties of soil, permeability of soil and seepage analysis, shear strength of soil, bearing capacity of soil, compaction and stabilization of soil, site investigation and sub soil exploration.
13	Hydraulics- properties of fluid, hydrostatic pressure, measurement of liquid pressure in pipes, fundamentals of fluid flow, flow of liquid through pipes, flow through open channel, flow measuring devices, hydraulic machines.
14	Irrigation Engineering- Hydrology, investigation and reservoir planning, percolation tanks, diversion head works.
15	Mechanics of Structures- Stress and strain, shear force and bending moment, moment of inertia, stresses in beams, analysis of trusses, strain energy.
16	Theory of structures- Direct and bending stresses, slope and deflection, fixed beam, continuous beam, moment distribution method, columns.
17	Design of Concrete Structures- Working Stress method, Limit State method, analysis and design of singly reinforced and doubly reinforced sections, shear, bond and development length, analysis and design of T Beam, slab, axially loaded column and footings.
18	Design of Steel Structures- Types of sections, grades of steel, strength characteristics, IS Code, Connections, Design of tension and compression members, steel roof truss, beams, column bases.
19	Transportation Engineering- Railway Engineering (alignment and gauges, permanent way, railway track geometrics, branching of tracks, stations and yards, track maintenance), Bridge engineering (site selection, investigation, component parts of bridge, permanent and temporary bridges, inspection and maintenance), Tunnel engineering (classification, shape and sizes, tunnel investigation and surveying, method of tunneling in various strata, precautions, equipment, explosives, lining and ventilation).
20	Highway Engineering- Road Engineering, investigation for road project, geometric design of highways, construction of road pavements and materials, traffic engineering, hill roads, drainage of roads, maintenance and repair of roads.
21	Environmental Engineering- Environmental pollution and control, public water supply, domestic sewage, solid waste management, environmental sanitation, and plumbing.

22	Advanced Construction Techniques and Equipment- Fibers and plastics, artificial timber, advanced concreting methods (under water concreting, ready mix concrete, tremix concreting, special concretes), formwork, pre-fabricated construction, soil reinforcing techniques, hoisting and conveying equipment, earth moving machinery (exaction and compaction equipment), concrete mixers, stone crushers, pile driving equipment, working of hot mix bitumen plant, bitumen paver, floor polishing machines.
23	Estimating and Costing- Types of estimates (approximate, detailed), mode of measurements and rate analysis.
24	Contracts and Accounts- Types of engineering contracts, Tender and tender documents, payment, specifications.

Syllabus for Mechanical & Allied Engineering Exam Group – JE

1.	Engineering Mechanics :
	Resolution of forces, Equilibrium and Equilibrant, parallelogram law of forces, triangle law of forces, polygon law of forces and Lami's theorem, couple and moment of a couple, condition for equilibrium of rigid body subjected to number of coplanar non-concurrent forces, definition of static friction, dynamic friction, derivation of limiting angle of friction and angle of repose, resolution of forces considering friction when a body moves on horizontal plane and inclined plane, calculation of moment of inertia and radius of gyration of : (a) I-Section (b) channel section (c) T-Section (d) L-Section (Equal & unequal lengths) (e) Z-Section (f) Built up sections (simple cases only), Newton's laws of motion (without derivation), motion of projectile, D'Alembert's principle, definition law of conservation of energy, law of conservation of momentum.
2.	Material Science :
	Mechanical properties of engineering materials - tensile strength, compressive strength, ductility, malleability, hardness, toughness, brittleness, impact strength, fatigue, creep resistance. Classification of steels, mild steel and alloy steels. Importance of heat treatment. Heat treatment processes - annealing, normalizing, hardening, tempering, carburizing, nitriding and cyaniding.
3.	Strength of Materials :
	Stress, strain, stress strain diagram, factor of safety, thermal stresses, strain energy, proof resilience and modulus of resilience. Shear force and bending moment diagram - cant lever beam, simply supported beam, continuous beam, fixed beam. Torsion in shafts and springs, thin cylinder shells.
4.	Machining :
	Working principle of lathe. Types of lathes - Engine lathe - construction details and specifications. Nomenclature of single point cutting tool, geometry, tool signature, functions of tool angles. General and special operations - (Turning, facing, taper turning thread cutting, knurling, forming, drilling, boring, reaming, key way cutting), cutting fluids, coolants and lubricants. Introduction to shaper, slotter, planer, broaching, milling and manufacture of gears, heat treatment process applied to gears.
5.	Welding :
	Welding - Introduction, classification of welding processes, advantages and limitations of welding, principles of arc welding, arc welding equipment, choice of electrodes for different metals, principle of gas (oxy-acetylene) welding, equipment of gas welding, welding procedures (arc & gas), soldering and brazing techniques, types and applications of solders and fluxes, various flame cutting processes, advantages and limitations of flame cutting, defects in welding, testing and inspection modern welding methods, (submerged, CO ₂ , atomic - hydrogen, ultrasonic welding), brief description of MIG & TIG welding.
6.	Grinding & Finishing Process :
	Principles of metal removal by grinding, abrasives, natural and artificial, bonds and binding processes, vitrified, silicate, shellac rubber, grinding machines, classification: cylindrical, surface, tool & cutter grinding machine, construction details, relative merits, principles of centreless grinding, advantages & limitations of centreless grinding work, holding devices, wheel maintenance, balancing of wheels, coolants used, finishing by grinding, honing, lapping, super finishing, electroplating, basic principles - plating metals, applications, hot dipping, galvanizing tin coating, parkerising, anodizing, metal spraying, wire process, powder process and applications, organic coatings, oil base paint, lacquer base enamels, bituminous paints, rubber base coating.
7.	Metrology :
	Linear measurement - Slip gauges and dial indicators, angle measurements, bevel protractor, sine bar, angle slip gauges, comparators (a) mechanical (b) electrical (c) optical (d) pneumatic. Measurement of surface roughness; methods of measurements by comparison, tracer instruments and by interferometry, collimators, measuring microscope, interferometer, inspection of machine parts using the concepts of shadow projection and profile projection.

8.	Fluid Mechanics & Hydraulic Machinery :
	<p>Properties of fluid, density, specific weight, specific gravity, viscosity, surface tension, compressibility capillarity, Pascal's law, measurement of pressures, concept of buoyancy.</p> <p>Concept of Reynold's number, pressure, potential and kinetic energy of liquids, total energy, laws of conservation, mass, energy and momentum, velocity of liquids and discharge, Bernoulli's equation and assumptions, venturimeters, pitot- tube, current meters.</p> <p>Working principle & constructional details of centrifugal pump, efficiencies - manometric efficiency, volumetric efficiency, mechanical efficiency and overall efficiency, cavitation and its effect, working principle of jet & submersible pumps with line diagrams.</p>
9.	Industrial Management :
	<p>Job analysis, motivation, different theories, satisfaction, performance reward systems, production, planning and control, relation with other departments, routing, scheduling, dispatching, PERT and CPM, simple problems.</p> <p>Materials in industry, inventory control model, ABC Analysis, Safety stock, re-order, level, economic ordering quantity, break even analysis, stores layout, stores equipment, stores records, purchasing procedures, purchase records, Bin card, Cardex, Material handling, Manual lifting, hoist, cranes, conveyors, trucks, fork trucks.</p>
10.	Thermal Engineering :
	<p>Laws of thermo dynamics, conversion of heat into work vice versa , laws of perfect gases, thermo dynamic processes</p> <p>- isochoric, isobaric, isothermal hyperbolic, isentropic, polytropic and throttling, modes of heat transfer, thermal conductivity, convective heat transfer coefficient, Stefan Boltzman law by radiation and overall heat transfer coefficient.</p> <p>Air standards cycles - Carnot cycle, Otto cycle, Diesel cycle, construction and working of internal combustion engines, comparison of diesel engine and petrol engine. Systems of internal combustion engine, performance of internal combustion engines.</p> <p>Air compressors their cycles refrigeration cycles, principle of a refrigeration plant.</p>

Syllabus for Electrical & Allied Engineering Exam Group – JE

Sl.No.	Subject
1.	Basic concepts: Concepts of resistance, inductance, capacitance, and various factors affecting them. Concepts of current, voltage, power, energy and their units.
2.	Circuit law: Kirchhoff's law, Simple Circuit solution using network theorems.
3.	Magnetic Circuit: Concepts of flux, mmf, reluctance, Different kinds of magnetic materials, Magnetic calculations for conductors of different configuration e.g. straight, circular, solenoidal, etc. Electromagnetic induction, self and mutual induction.
4.	AC Fundamentals: Instantaneous, peak, R.M.S. and average values of alternating waves, Representation of sinusoidal wave form, simple series and parallel AC Circuits consisting of R.L. and C, Resonance, Tank Circuit. Poly Phase system - star and delta connection, 3 phase power, DC and sinusoidal response of R-L and R-C circuit.
5.	Measurement and measuring instruments: Measurement of power (1 phase and 3 phase, both active and re-active) and energy, 2 wattmeter method of 3 phase power measurement. Measurement of frequency and phase angle. Ammeter and voltmeter (both moving coil and moving iron type), extension of range wattmeter, Multimeters, Megger, Energy meter AC Bridges. Use of CRO, Signal Generator, CT, PT and their uses. Earth Fault detection.
6.	Electrical Machines: (a) D.C. Machine - Construction, Basic Principles of D.C. motors and generators, their characteristics, speed control and starting of D.C. Motors. Method of braking motor, Losses and efficiency of D.C. Machines. (b) 1 phase and 3 phase transformers - Construction, Principles of operation, equivalent circuit, voltage regulation, O.C. and S.C. Tests, Losses and efficiency. Effect of voltage, frequency and wave form on losses. Parallel operation of 1 phase /3 phase transformers. Auto transformers. (c) 3 phase induction motors, rotating magnetic field, principle of operation, equivalent circuit, torque-speed characteristics, starting and speed control of 3 phase induction motors. Methods of braking, effect of voltage and frequency variation on torque speed characteristics, Fractional Kilowatt Motors and Single Phase Induction Motors: Characteristics and applications.
7.	Synchronous Machines: Generation of 3-phase e.m.f. armature reaction, voltage regulation, parallel operation of two alternators, synchronizing, control of active and reactive power. Starting and applications of synchronous motors.
8.	Generation, Transmission and Distribution: Different types of power stations, Load factor, diversity factor, demand factor, cost of generation, inter-connection of power stations. Power factor improvement, various types of tariffs, types of faults, short circuit current for symmetrical faults. Switchgears and Protection: Rating of circuit breakers, Principles of arc extinction by oil and air, H.R.C. Fuses, Protection against earth leakage / over current, etc. Buchholz relay, Merz-Price system of protection of generators & transformers, protection of feeders and bus bars. Lightning arresters, various transmission and distribution system, comparison of conductor materials, efficiency of different system. Cable - Different type of cables, cable rating and derating factor.
9.	Estimation and costing: Estimation of lighting scheme, electric installation of machines and relevant IE rules. Earthing practices and IE Rules.
10.	Utilization of Electrical Energy: Illumination, Electric heating, Electric welding, Electroplating, Electric drives and motors.
11.	Basic Electronics: Working of various electronic devices e.g. P N Junction diodes, Transistors (NPN and PNP type), BJT and JFET. Simple circuits using these devices.

Syllabus for Electronics & Allied Engineering Exam Group – JE

Sl.No.	Subject
1.	Electronic Components & Materials
	Conductors, Semi conductor& Insulators; Magnetic materials; Jointing & Cleaning materials for U/G copper cable & OFC; Cells and Batteries (chargeable and non chargeable); Relays, Switches, MCB & Connectors.
2.	Electronic Devices and circuits
	PN Junction diodes, thyristor; Diode and triode circuits; Junction Transistors; Amplifiers; Oscillator; M u l t i v i b r a t o r , counters; Rectifiers; Inverter and UPS.
3.	Digital Electronics
	Number System & Binary codes; Boolean Algebra & Logic gates; Combinational & Sequential logic circuits; A/D & D/A converter, counters; Memories
4.	Linear Integrated Circuit
	Introduction to operational Amplifier; Linear applications; Non Linear applications; Voltage regulators; Timers; Phase lock loop.
5.	Microprocessor and Microcontroller
	Introduction to microprocessor, 8085 microprocessor working; Assembly Language programming; Peripherals & other microprocessors; Microcontrollers
6.	Electronic Measurements
	Measuring systems; Basic principles of measurement; Range Extension methods; Cathode ray oscilloscope, LCD, LED panel; Transducers
7.	Communication Engineering
	Introduction to communication; Modulation techniques; Multiplexing Techniques; Wave Propagation, Transmission line characteristics, OFC; Fundamentals of Public Address systems, Electronic exchange, Radar, Cellular and Satellite Communication.
8.	Data communication and Network
	Introduction to data communication; Hardware and interface; Introduction to Networks and Networking devices; Local Area Network and Wide area network; Internet working.
9.	Computer Programming
	Programming concepts; Fundamentals of 'C' and C ++; Operators in 'C' and C ++; Control Statements; Functions, Array String & Pointers, File Structure; Data Structure and DBMS
10	Basic Electrical Engg.
	DC Circuits; AC fundamentals; Magnetic, Thermal and Chemical effects of Electric current; Earthing - Installation, Maintenance, Testing,

Syllabus for Professional Ability- CHIEF LAW ASSISTANT

Sl No.	Topics	No. of Questions
1.	Indian Constitution: Preamble and Salient Features, Fundamental Rights and Duties, Directive Principles of State Policy, Union Legislature, Executive & Judiciary.	3 to 5 Questions
2.	Administrative Law: Nature and Scope of Administrative Law; Legislative power of the administration; Judicial power of Administration; Judicial control of Administrative action; Corporations and Public undertaking.	2 to 3 Questions
3.	Jurisprudence: Nature and Concept, Schools of Jurisprudence, Sources of Law, Legal Concepts, Legal Persons	3 to 4 Questions
4.	Law of Torts: General concepts.	2 to 3 Questions
5.	Hindu Law: Sources, Marriage, Divorce, Maintenance, Adoption, Gift, Succession.	3 to 4 Questions
6.	Code of Civil Procedure: General; Suits, Execution; Appeals; Reference, Review and Revision; Written Statement, Set-off and Counter-claim; Examination, Discovery, Admissions and Documents Law.	5 to 7 Questions
7.	Code of Criminal Procedure: Various sections.	2 to 3 Questions
8.	Indian Penal Code: General; Punishments; Abetment, Criminal Conspiracy; Offences against the State, Contempt's of the Lawful Authority of Public Servants, False Evidence; Offences affecting the Human Body and Property.	2 to 3 Questions
9.	Indian Evidence Act: Relevancy of Facts; Facts which need not be proved; Oral Evidence; Documentary Evidence; Burden of Proof; Estoppel; Examination of Witnesses and of the Improper Admission and Rejection of Evidence.	2 to 3 Questions
10.	Indian Contract Act: Agreement, Contract and Proposal; Acceptance; Consideration; Capacity to Contract; Factors vitiating Consent; Legality of Object; Performance of Contracts; Breach of contract; Indemnity and Guarantee ; Bailment.	2 to 3 Questions
11.	Limitation Act, 1963: Preliminary and Limitation of Suits, Appeals and Applications; Period of Limitation; Acquisition of Ownership by Possession and Miscellaneous.	2 to 3 Questions
12.	Specific Relief Act, 1963: Specific Relief & Preventive Relief.	1 to 2 Questions
13.	Indian Partnership Act, 1932: Nature of Partnership and Relations of Partners to one another; Relations of Parties to Third Person; Incoming and Outgoing Partners; Dissolution of a Firm; Registration of Firms.	1 to 2 Questions
14.	Arbitration and Conciliation Act, 1996: Arbitration; Conciliation	2 to 3 Questions

SI No.	Topics	No. of Questions
15.	Consumer Protection Act: General Provisions.	1 to 2 Questions
16.	Protection of Human Rights: General Provisions.	1 to 2 Questions
17.	Transfer of Property Act: General, Transfers of Property by Act of Parties; Sales of Immovable Property; Mortgages of Immovable Property and Charges; Lease of Immovable Property; Exchanges; Gifts.	2 to 3 Questions
18.	Right to Information Act: Obligations of public authorities; Central & State information commission; Appeals and penalties.	1 to 2 Questions
19.	Company Law: Formation, Registration and Incorporation of company; Capital Formation; Corporate Administration and Winding up of Companies.	2 to 3 Questions
20.	Labour Laws: Industrial Disputes Act, 1947; Trade Unions Act, 1926; The Employees State Insurance Act, 1948; The Employees Provident Fund Act, 1952; The Maternity Benefit Act, 1961; The Minimum Wages Act, 1948; The Factories Act; Payment of Wages Act, 1936.	3 to 5 Questions
Total		50

Syllabus for JUNIOR TRANSLATOR

- 1- The General Portion for this paper will contain 50 questions. These questions will be translated in the languages to be advised by Board.
- 2- In the language portion, 30 questions will be from Hindi language and 20 questions will be from English language. These 50 questions will not be translated in other languages. As such, **questions pertaining to Hindi language will be printed in Hindi only and questions pertaining to English language will be printed in English only.**

NOTE: Difficulty Level Shall be 10+2

(Three Questions each)	
Sr. No.	Topics
1.	समानार्थी शब्द
2.	पर्यायवाची शब्द
3.	विलोम शब्द
4.	प्रत्यय
5.	उपसर्ग
6.	संधि विच्छेद
7.	मुहावरे और लोकोक्तियाँ
8.	तत्सम-तद्भव
9.	वाक्यांश के लिए एक शब्द
10.	शब्द / वाक्य शुद्धि

Syllabus for Staff Nurse

Anatomy, Physiology, Nutrition, Biochemistry, Nursing Foundations, Psychology, Microbiology, Sociology, Pharmacology, Pathology, Genetics, Medical-Surgical Nursing , (Adult including Geriatrics)- I, Community Health Nursing, Child Health Nursing, Mental Health Nursing, Midwifery and Obstetrical Nursing, Nursing Research & Statistics, Management of Nursing Services and Education.