



International Year
of Cooperatives
2025
Cooperatives Build
a Better World

भारतीय रेल / INDIAN RAILWAYS

चित्तरंजन रेलइंजन कारखाना / CHITTARANJAN LOCOMOTIVE WORKS

पोस्ट-चित्तरंजन, जिला - पश्चिम बर्धमान, पिन - ७१३३३१ (पश्चिम बंगाल)

P.O. CHITTARANJAN, DISTT-PASCHIM BARDHAMAN, PIN-713331 (WEST BENGAL)

कार्मिक विभाग / Personnel Department

General Departmental Competitive Examination (GDCE)

Notification No. GDCE 01/2026 dated: - 10/04/2026

Date of Publication on CLW website	10/04/2026
Closing Date & Time for receipt of applications	08/05/2026 (18:00hrs)

Chittaranjan Locomotive Works (CLW) invites applications from regular and eligible employees (except RPF/RPSF) for filling up the following Posts, Junior Engineers (Civil Engg.), DMS & School Teachers (Post Graduate) against GDCE Quota as per vacancies indicated below: -

1 DETAILS OF VACANCIES:

Sr. No.	Name of the Post	Pay Level in 7th CPC	Department	No. of vacancies					PwBD
				UR	SC	ST	OBC	Total	
1	Junior Engineer/Works	6	Engineering	02	-	-	01	03	-
2	Junior Engineer/P-Way	6	Engineering	01	-	-	-	01	-
3	Depot Materials Superintendent (DMS)	6	Stores	03	01	01	01	06	-
4	School Teacher (PGT)	8	Personnel/ GA	08	03	01	05	17	01 (LV,OA, OL, BL, OAL, DW, AAV)

Note: -

- I. The Post details (Qualification, Medical Standard and the post) of various posts are included in this Notification at Annexure- A.
- II. For the PGT (schools), the distribution of 17 vacancies, subject-wise, are as under: -

Sl. No.	Subject	Vacancy (GDCE)
1	PGT (Bengali)	01
2	PGT (Hindi)	01
3	PGT (English)	02
4	PGT (Physics)	02
5	PGT (Chemistry)	02
6	PGT (Math)	02
7	PGT (Biology)	01

Sl. No	Subject	Vacancy (GDCE)
8	PGT (History)	01
9	PGT (Political Science)	01
10	PGT (Economics)	01
11	PGT (Accountancy)	01
12	PGT (Business Studies)	01
13	PGT (Computer)	01

The community distribution of the 17 vacancies (PGT) is applicable in entirety, not limiting subject-wise. The appointment against respective community will be in order of merit for that community irrespective of the teaching subject to the extent of overall reservation notified above.

- III. Candidates are advised to ensure that they are eligible as per the medical standards for the post.

Contd...

 (प्रशासन)

2. ELIGIBILITY CONDITIONS-

- i. The applicant candidate should be a regular employee of Chittaranjan Locomotive Works (CLW), including Dankuni Locomotive Works (DLW), HWH Stores Office and Inspections Cells at Mumbai, Bengaluru and New Delhi and any other unit under the administrative control of CLW.
- ii. RPF/RPSF staff are NOT eligible to apply against GDCE vacancies in terms of Master Circular 69/2024. Accounts Department staff are, however, eligible to apply against the posts notified against GDCE.
- iii. The applicant must be working substantively in a grade below the notified grade, in which he/she wishes to apply. For example, staff willing to apply for the post of JE (Works) should be working substantively upto and including Pay Level-5. However, for the post of JE(P-Way), being a safety post, staff working regularly upto and including Pay Level-6, are eligible to apply. (Ref- para 19 of Master Circular 69/2024)
- iv. Age Limit-

The maximum upper age limit, as on the date of notification, shall be as under: -

UR	OBC	SC	ST
42 years	45 years	47 years	47 years

- v. Application Fees- NIL
- vi. **Educational Qualification-**
Since GDCE is conducted against DRQ (Direct Recruitment Quota) vacancies, the candidate must possess the educational qualification that is required for appoint to the post against DRQ conducted by RRBs. The details of educational qualification are, however, exhibited at Annexure-A of this notification.

3. SCHEME OF EXAMINATION (Ref- RBE 28/2026)-

- i. There shall be a single stage CBT (Computer Based Test)/ TBT (Tablet Based Test) for the posts notified above.
- ii. **For the posts of JE/DMS-**
There shall be a single question paper of 150 MCQ (multiple choice questions) each with 4 choices. Each question carries one mark and there shall be negative marking system, with 1/3 mark deducted for each wrong answer. Duration of the examination is 120 minutes.
- iii. **For the post of Teachers-**
There shall be a single stage question paper of 100 (multiple choice questions) each with 4 choices. Each question carries one mark and there shall be negative marking system, with 1/3 mark deducted for each wrong answer. Duration of the examination is 90 minutes (120 minutes for PwBD candidates accompanied by Scribe).
- iv. Question Paper will be broadly distributed as follows:

For JE and DMS- 150 MCQ	For Teachers- 100 MCQ
General Awareness, Physics, Chemistry, Basics of Computers and Applications, Basics of Environment and Pollution control and Technical (concerned discipline) abilities (100 questions)	General Awareness, General Intelligence and Reasoning, Mathematics, General Science and Professional Ability (50 questions)

Detail syllabus are enclosed at Annexure-B.

- v. For the candidates applying for the post of Teachers, there shall be a second stage of Teaching Skill Test of 100 marks from among the qualified candidates from the written examination. The candidates will be required to teach a topic/topic of their subject by a nominated committee, in which their teaching skills, viz. communication skill, presentation skill, problem solving ability, etc will be evaluated. The written test and the teaching skill test will have a weightage in the ratio of 85:15 for preparation of final merit list.
- vi. The final panels will be strictly according to overall merit as mentioned above.
- vii. There is no provision of any Supplementary Test, in the event of absence of any candidate on any account, whatsoever.
- viii. Date of Examination- tentatively in the month of May, or June' 2026. Exact date(s) and time of the examination(s) will be notified in due course.

4. APPLICATION-

Desirous and eligible candidates may apply for the posts notified above in the application format enclosed in **Annexure-C**, forwarded from their controlling authority, to be dropped in the 'Drop Box' in the Recruitment Section of Personnel Department, Administrative Building, Chittaranjan- 713331. It may be noted that the filled in applications must be dropped latest by 8th May'2026 (17:30 hrs) and there shall not be any application received after the deadline under any circumstances.

All concerned are requested for wide circulation of the above.

Enclosures: - Annexures – 'A', 'B' & 'C'

Copy to: -

- 1) Secy to GM: - For kind information of GM.
- 2) All PHODs/CHODs: - For kind information and necessary action.
- 3) CEE/Dankuni Loco works of CLW and CMM/HWH: - For kind information and necessary action.
- 4) All Dy. HODs of CLW and Dankuni Loco Works of CLW: - For kind information and request to ensure wide circulation including Inspection Cells at Delhi, Mumbai and Bengaluru.
- 5) Dy.CPO (W), all SPOs and APOs: - For kind information and request for wide circulation.
- 6) Genl. Secy., CLW LU, CRMC, AISCSTREA, AIOBCREA: - For information and request for wide circulation.
- 7) SSTE/CLW: - He is requested to upload the above notification on the CLW Intranet for access by staff.
- 8) Office Notice Boards in Administrative Building and Workshop.


Senior Personnel Officer (Admn.)
for Chief Personnel Officer
CLW/Chittaranjan

वरिष्ठ कार्मिक अधिकारी (प्रशासन)
Sr. Personnel Officer (Admn.)
चि.रे.का./चित्तारंजन/CLW Chittaranjan


Senior Personnel Officer (Admn.)
for Chief Personnel Officer
CLW/Chittaranjan

वरिष्ठ कार्मिक अधिकारी (प्रशासन)
Sr. Personnel Officer (Admn.)
चि.रे.का./चित्तारंजन/CLW Chittaranjan

Post Details with Medical Standard and Prescribed Qualification

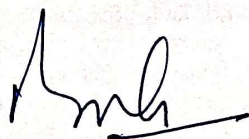
Sl No.	Name of the Post	7 th CPC Level	Deptt.	Medical Standard	Prescribed Qualification
1	Junior Engineer (P- Way)	6	Civil Engg.	A3	Three years Diploma in Civil Engineering, or B.Sc.in Civil Engineering of three years duration, or (b) a combination of any sub stream of basic streams of Civil Engineering from a recognized University/Institute
2	Junior Engineer (Works)	6	Civil Engg.	C1	
5	Depot Material Superintendent (DMS)	6	Stores	C1	Three years Diploma in any Engineering Discipline, including BSc in Civil Engg of 3 years duration, or combination of any sub stream of basic streams of Mechanical, Electrical, or Civil Engineering from a recognized University/Institute
6	Post Graduate Teachers	8	Personnel / GA	C1	Masters Degree from a recognized University with at least 50% marks in aggregate in the relevant subject, OR 2 years integrated Post Graduate course from a Regional College of Education of NCERT in the relevant subject AND B.Ed from a recognized University



वरिष्ठ कार्मिक अधिकारी (प्रशासन)
Sr. Personnel Officer (Admn.)
चि.रे.का./चित्तारंजन/CLW Chittaranjan

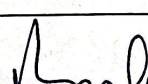
Detail Syllabus for the posts of JE/Engg, DMS and PGT (GDCE Notification no GDCE 01/2026 dated 09.04.26)

Syllabus for Civil Engineering (Exam Group-JE (Engg)/DMS)	
S.N.	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 lay out, earthwork, foundation (types, dewatering, cofferdams, 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, geniting, 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 bye laws), 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),Tacheometricsurvey,curves(types,settingout), Advanced survey equipment, aerial survey and remote sensing.
11	Computer Aided Design - CAD Software (Auto-CAD, Auto Civil, 3DMaxetc.), 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, earth edams etc., physical properties of soil, permeability of the 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 sing lyre in forced 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 (siteselection,investigation,componentpartsofbridge,permanentandtemporarybridges,inspectionand 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), form work, 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 Electrical & Allied Engineering (ExamGroup-DMS)	
S.N.	Subject
1	Basic concepts: Concepts of resistance, inductance, capacitance, and various factors affecting them. Concepts of current, voltage, power, energy and their units.
2	Circuitlaw: Kirchoff's law, Simple Circuits 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 oil and moving iron type), extension of rangewattmeter, Multimeters, Megger, Energymeter 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. Method 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.


 प्रमुख अधिकारी (प्रशासन)
 (Admin.)

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.

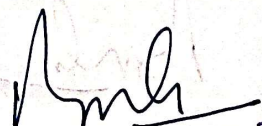
Syllabus for Electronics & Allied Engineering (Exam Group-DMS)	
S.N.	Subject
1	Electronic Components & Materials: Conductors, Semiconductor & Insulators; Magnetic-materials; Jointing & Cleaning materials for U/G copper cable & OFC; Cells and Batteries (chargeable and non chargeable); Relays, Switches, MCB & Connectors.
2	Electronic Devices and circuits: PN Junction diodes, thyristor; Diode and triode circuits; Junction Transistors; Amplifiers; Oscillator; Multivibrator, 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 Mechanical & Allied Engineering (Exam Group-DMS)	
S.N.	Subject
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.

Handwritten signature

नरिन्द्र कर्मिक अधिकारी (प्रशासन)

3	<p>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.</p>
4	<p>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.</p>
5	<p>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, CO₂, atomic-hydrogen, ultrasonic welding), brief description of MIG&TIG welding.</p>
6	<p>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 centre less grinding, advantages & limitations of centre less 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.</p>
7	<p>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.</p>
8	<p>Fluid Mechanics & Hydraulic Machinery: Properties of fluid, density, specific weight, specific gravity, viscosity, surface tension, compressibility capillarity, Pascal's law, measurement of pressures, concept of buoyancy. 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, venturi meters, pitot-tube, current meters. 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	<p>Industrial Management: 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. 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	<p>Thermal Engineering: Laws of thermodynamics, conversion of heat into work vice versa, laws of perfect gases, thermo dynamic processes – 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. 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. Air compressors their cycles refrigeration cycles, principle of a refrigeration plant.</p>


 सचिव कार्मिक अधिकारी (प्रशासन)
 (Admin)

Syllabus for PGT (Post Graduate Teachers) [Written Examination]

a. 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.

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. 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.

d. General Science: Physics, Chemistry and Life Sciences (upto10thstandardCBSE syllabus).

e. Syllabus on Education-

Topic	No. of Questions (approx..)
Education	22 to 28
Philosophy of Education —various schools of Philosophy; Education according to Indian thinkers and Western thinkers.	
Sociology and Education in the Indian Context - Sociological basis of education, Aspiration of Indian Society, Role & functions of home, school community, religion, media and state as agents of socialization. Education as an agent of social change, social adjustment and socio-economic development.	
Education, Culture and Human Values —Meaning and classification of values. Nature of moral and ethical values; Value oriented Education. Value crisis and role of education in resolving value crisis. Meaning and characteristics of culture and its relationship with education. Indian cultural Heritage and education. Cultural pluralism, cultural lag, cultural conflict, ambivalence and tolerance.	
Democracy and Education - Concepts of equality, freedom, democracy, authority and discipline. Human rights education with reference to child's rights.	
Education and Integration- Role of teacher and Educational Institutions	
Psychology of Learner & Teaching	13 to 18
Meaning, scope & Importance of educational psychology. Relationship of Education and Psychology; Process of Growth and Development; Intelligence: Its theories and measurement. Learning and Motivation; Psychology and education of exceptional children-creative, gifted, backward, learning disabled and mentally retarded. Evaluation	
Curriculum and Instruction- (8to12Questions):	8 to 12
Curriculum Development, Transaction,	
Instructional Methods - Teacher-Controlled Instruction (TCI); Learner-Controlled Instructions (LCI); Group-Controlled Instruction (GCI);	
Skills and Competencies; Means of Instruction Delivery.	
Total	50