

CALCUTTA TELEPHONES



Bharat Sanchar Nigam Limited
(A Govt. of India Enterprise)
Office of the Chief General Manager
Calcutta Telephones, 8, Bentinck Street,
Taher Mansion (3rd Floor), Kolkata-700001.

1. Applications are invited from eligible Indian Citizens for recruitment to the cadre of TELECOM TECHNICAL ASSISTANT in the IDA pay scale of BSNL of Rs. 7100-200-10100/- plus usual allowances as admissible from time to time (with minimum gross emoluments inclusive of all allowances Rs.15,039/- approx) in Calcutta Telephone District, as per details given below:-
2. Total number of posts to be filled up- **373** (may vary depending upon the availability of vacancies).

The details of reservation position is as under :-

TTA-2007	OC-188	OBC-101	SC-56	ST-28	Total=373
-----------------	---------------	----------------	--------------	--------------	------------------

3% of the total vacancy (1.5% for Locomotive and 1.5% for Hearing Impairment) will be reserved for PH quota.

Reservation as per Central Govt. guidelines will be applicable for SC/ST/OBC/Physically Handicapped (PH)/Ex-serviceman. In respect of Physically Handicapped persons, candidates with following physical disability will be permitted.

- i) Hearing Impairment - Partially Deaf
- ii) Locomotive Impairment - One arm or one leg or both legs affected.

(The minimum degree of disability is 40% in order for a person to be eligible for any concession/benefits)

3. Eligibility:-

- a) **Nationality** : Only Indian Nationals would be eligible to apply.
- b) **Educational Qualifications** : Applicants must possess as on 31.08.2007 three years Engineering Diploma in Telecommunications Engineering/ Electronics Engineering/ Electrical Engineering/ Radio Engineering/ Computer Engineering/ Instruments Technology or M.Sc (Electronics) from a recognized institution/ university.
- c) **Age:-** i) The candidates should be between 18 and 27 years of age on the closing date for receipt of applications from candidates. The upper age limit is relaxable by 5 years for SC/ST and 3 years for OBC candidates.
ii) However, this age is relaxable for departmental candidates upto 40 years in respect of general candidates and upto 45 years in respect of Scheduled Caste/Scheduled Tribes candidates in accordance with instruction or orders issued by the Central Government. The upper age limit is also relaxable by three years in respect of other backward class (OBC) candidates.

iii) The candidates seeking relaxation in age and reservation etc. must submit the Caste Certificate issued from competent authority in support of their claim for relaxation. The candidates belonging to SC/ST and OBC seeking relaxation/reservation must submit Caste Certificate from any of the following competent authorities Viz. DM/ADM/DC/ADC/SDO/1st Class Stipendiary Magistrate, SDM/Executive Magistrate/Revenue Officer (not below the rank of Tahsildar). However in cast certificate in respect of OBC candidates it must clearly be mentioned that the candidate does not belong to the Person/Sections(creamy layer) as mentioned in Column 3 of the Schedule to the Government of India Department Personal and Training Office memorandum No. 36012/22/93-Dstt(SCT).

iv) For Ex-Servicemen candidates upper age limit is relaxable as per instruction issued by the Central Govt. from time to time.

v) Grant of age relaxation for partially hearing impaired which can be improved with hearing aid and for locomotive disability affecting on leg or limb- 10 years for OC, 15 years of SC/ST and 13 years for OBC candidates.

4. Selection: The candidate will be provisionally selected as Telecom. Technical Assistant (TTA) on the basis of a Competitive Examination. Calcutta Telephones will fix minimum qualifying marks for OC/OBC/SC/ST/PH candidates. Candidates obtaining less than minimum qualifying marks shall not be considered for inclusion in the merit-list. The appearance of the name in the merit list does not confer any right to the candidate for employment. A final call letter/appointment letter will be issued to the candidate after completion of all other formalities.

5. Syllabus for Exam: The syllabus for the Competitive Examination is given in **Appendix-II**. The standard of paper in Central ability test will be such as may be expected of an engineering diploma holder. The standard of papers in other subjects will approximately be that of diploma level of an Indian polytechnic. There shall be three written (objective type) papers **Paper-I** (General ability test - 100 Marks), **Paper-II** (Basic Engineering - 500 Marks) and **Paper-III** - (Specialization - 500 Marks).

6. Bond and Trainings : -

i) All candidates provisionally selected for appointment against the vacancies for direct recruitment shall execute a bond for a period of five years from the date of their appointment as Telecom Technical Assistant in the proforma specified by the Department.

ii) The selected candidates before their appointment as Telecom Technical Assistant have to undergo the prescribed course of training in any of the training centers of the Department.

iii) During the period of training, the trainees will be entitled to stipend (training allowances) as directed by Department from time to time.

7. Probation Period :- The candidates appointed shall remain on probation for a period of two years.

8. Service Liability :- Normally within the territorial jurisdiction of Calcutta Telephones District but transferable any where in India in the interest of service. The candidates on appointment shall, if so required, be liable to serve in Territorial Army Signal Units for period specified in the Territorial Army act. and rules made there under.

- 9. For the Employed Candidates:-** Candidates working in Central/State Government Service Public Sector under taking should send their applications through the head of their office/department so as to reach this office within due date i.e. 31.08.2007.

Applications received after the due date will be straightway rejected

- 10. Examination Fee :-** Examination fee of *Rs.500/- (five hundred) is payable by the applicant in the form of demand draft drawn in favour of **AO BSNL Calcutta** and must be purchased/ issued after the date of advertisement. Fee remitted by Money Order or Cheques will not be accepted. SC/ST/PH candidates need not pay the examination fee. The examination fee will be non refundable in any case.

*** Fees enhanced vide BSNL Corporate Office order .**

- 11. Disqualification :-** No person (a) who has entered into or contracted a marriage with a person having a spouse living or (b) who having a spouse living entered into or contracted a marriage with any person shall be eligible for appointment to any of the above posts. Provided that the Central Govt. may if satisfied that such marriage is permissible under the personal law applicable to such person and the other party to the marriage and that there are other grounds for doing so, exempt any person from the operation of this rule.

- 12. Registration with Employment & Validity :-** Applicant may be registered with the Employment Exchange situated in the territorial jurisdiction of West Bengal and registration be valid up to the last date of receipt of applications. The Registration with Employment Exchange is Preferable and not Mandatory.

- 13. How to Apply :-** Application Form and Syllabus will be available in the office of the AGM(R&E), Calcutta Telephones, 8, Bentinck Street, Taher Mansion (3rd Floor), Kolkata-700001 by cash payment of Rs. 10/- (Rupees ten only) between 11.30 hrs. to 16.30 hrs. on all working days from 01.08.2007 to 30.08.2007. Application Form as per format given duly filled in by the candidate enclosing only photocopies of all requisite certificates and detailed Mark sheet duly attested by the candidates himself/herself and also by a Gazetted Officer should reach to the same address as mentioned above latest by 31.08.2007 through registered post only. The envelop containing the application should be superscribed in bold letters **“APPLICATION FOR DIRECT RECRUITMENT TO THE CADRE OF TELECOM TECHNICAL ASSISTANT”**. Two self-addressed envelope sized 23 x 11 cms. should also be enclosed with the application. The exact date of exam. will be intimated to the eligible candidates through hall permits (Admit Cards). Application form can also be downloaded from the website www.calcuttatelephones.com and may be used for the purpose.

The departmental candidates must ensure that their applications (Through Proper Channel) also reach to the above address latest by the specified date i.e. 31.08.2007 otherwise their application will not be entertained.

Note :- i) Three recent identical passport size photographs (duly attested by Gazetted Officer) out of which one should be affixed in the space provided in the application and the rest should be enclosed with the application.

ii) Applications received incomplete or after the due date i.e. 31.08.2007 will be rejected straightway and no correspondence whatsoever will be entertained in this regard.

SYLLABUS

The standard of paper in Central ability test will be such as may be expected of an engineering diploma holder. The standard of papers in other subjects will approximately be that of diploma level of an Indian polytechnic. There shall be three written (objective type) papers (Paper-I, Paper-II and Paper-III) as per details given below:-

Paper	Subject	Marks	Time-allowed
Paper-I	General ability test	100	2 hours.
Paper-II	Basic Engineering	500	3 hours.
Paper-III	Specialization	500	3 hours.

Paper-I

General ability test:- 100 Marks.

The candidates comprehension and understanding of General English shall be tested through simple exercise such as provision of antonyms and synonyms, fill in the blanks and multiple choice exercises etc. This shall also include questions on current events, general knowledge and such matters of everyday observation and experience as may be expected of an educated person.

Paper-II

Basic Engineering :- 500 Marks.

Details syllabus is as under :-

1. Applied Mathematics :- Co-ordinate Geometry, Vector Algebra, Matrix and Determinant, Differential Calculus, Integral Calculus, Differential equation of second order, Fourier Series, Laplac Transform, Complex Number Partial Differentiation.

2. Applied Physics :- Measurement- Units and Dimension, Waves, Acoustics, Ultrasonics, Light, Laser and its Applications, Atomic Structure and Energy Levels.

3. Basic Electricity :- Electrostatics, Coulomb's Law, Electric field, Gauss's theorem, concept of potential difference, concept of capacitance and capacitors, Ohm's Law, power and energy, Kirchoff's voltage, current laws and their applications in simple DC circuits, Basic Magnetism, Electro Magnetism, Electromagnetic induction, Concept of alternating voltage & current, Cells and Batteries, Voltage and Current Sources, Thevenin's theorem, Norton's theorem and their applications.

4. Electronic Devices and Circuits :- Classification of materials in to conductor, semi conductor, insulator etc., electrical properties, magnetic materials, various types of relays, switches and connectors. Conventional representation of electric and electronic circuit elements. Active and passive components, semi conductor Physics, Semiconductor, Diode, Bipolar Transistor and their circuits, Transistor, Biasing and Stabilisation of operating points, Single stage transistor amplifier, field effect transistor, Mosfet Circuit applications.

Multistage Transistor Amplifier, Transistor Audio Power Amplifiers, Feedback in Amplifier, Sinusoidal Oscillators, Tuned Voltage Amplifiers, Wave shaping and switching circuits.

Block diagram of I.C. timer (such as 555) and its working, Multivibrator Circuits, Time Base Circuits, Thyristors and UJT, Regulated Power supply.

Contd...2

5. Digital Techniques :- Applications and advantages of digital systems, number system (binary and hexadecimal), Logic Gates, Logic Simplification, Codes and parity, Arithmetic Circuits, Decoders, Display Devices and Associated Circuits, multiplexes and De-multiplexes, Latches and Flip Flops, Counters, Shift Register, Memories, A/D and D/A converters.

Paper-III

Specialization :- 500 Marks.

The candidate shall be allowed to choose any two out of the following sections. Each section shall consist of 250 marks. In the event of a candidate attempting more than 2 sections, the first two sections attempted in alphabetical order shall only count. Candidates are in their own interest advised not to attempt more than 2 sections.

Section A :- Electrical

Section B :- Communication

Section C :- Networks, Filters and Transmission Lines.

Section D :- Instruments and Measurements.

Section E :- Control Systems.

Section F :- Microprocessors.

Section G :- Computers.

Details syllabus is as under :-

Section A :- Electrical

3 phase vs single phase supply, Star Delta Connections, relation between phase & line voltage, power factor, and their measurements, construction and principles of working of various types of electrical assuring instruments, all types of motor and generator- AC & DC, transformers, starters, rectifiers, inverters, battery charges, batteries, servo and stepper motors, contactor control circuits, switchgear, relays, protection devices & schemes, substation, protective relaying, circuit breaker, generator protection, transformer protection, feeder & lightening protection, feeder & busbar protection, lightening arrester, earthing, voltage stabilizer & regulators, power control devices & circuits, phase controlled rectifiers, inverters, choppers, dual converters, cyclo converters, power electronics application in control of drivers, refrigeration & air conditioning.

Section B :- Communication

Modulation and demodulation :- Principles and operation of various types of AM, FM and PM modulators/demodulators, pulse modulation- TDM, PAM, PPM, PWM, Multiplexing, Principles and applications of PCM.

Introduction of Basic block diagram of digital and data communication systems, coding error detection and correction techniques, Digital Modulation Techniques- ASK, ICW, PSK, FSK, Characteristics/working of data transmission circuits, UART, SART, Modems, protocols and their function, brief idea of ISDN interfaces, local area Network, Carrier Telephony- Features of carrier telephone system.

Microwave Engineering :- Microwave devices, Wave guides, Microwave Components, Microwave antennas, Microwave Communication Systems- Block diagram & working principles of microwave communication link.

Section C :- Networks, Filters and Transmission Lines.

Two port network, Attenuators, filters, Transmission Lines and their applications, characteristic impedance of line, concept of reflection and standing waves on a transmission line, Transmission line equation, Principle of impedance matching, Bandwidth consideration of a transmission line.

Section D :- Instruments and Measurements.

Specifications of instruments- accuracy, precision, sensitivity, resolution range, Errors in measurement and loading effect, Principles of voltage, current and resistance measurements, transducers, measurement of displacement and strain, force and torque measuring devices, pressure measuring devices, flow measuring devices, power control devices & circuits. Types of AC milli-voltmeters-Amplifier rectifier and rectifier amplifier, Block diagram explanation of a basic CRO and a triggered sweep oscilloscope, front panel controls, Impedance Bridges and Q-Meters, Principles of working and specifications of logic probes, signature analyzer and logic analyzer, signal generator, distortion factor meter, spectrum analyser.

Section E :- Control Systems.

Basic elements of control system, open and closed loop system, concepts of feed back, Block diagram of control system, time lag, hysteresis, linearity concepts, self regulating and non self regulating control systems, Transfer function of simple control components, single feedback configuration.

Time response of systems.

Stability analysis – characteristic equation, Routh's table, Nyquist criterion, Relative stability, phase margin and gain margin, Routh Hurwitz criterion, root locus technique, Bode plot, Polar plot, Gain margin and phase margin.

Section F :- Microprocessors.

Typical organization of a microcomputer system and functions of its various blocks, Architecture of a Microprocessor, Memories and I/O Interfacing, Brief idea of M/C & assembly languages, machines & Mnemonic codes, Instruction format and Addressing mode, concept of Instruction set, Programming exercises in assembly language, concept of interrupt, Data transfer techniques- sync data transfer, async data transfer, interrupt driven data transfer, DMA, serial output data, serial input data.

Section G :- Computers.

Computer and its working, types of computers, familiarization with DOS and Windows – concept of file, directory, folder, Number Systems, Data representation, Programming- Elements of a high level programming language, PASCAL, C, Use of basic data structures, Fundamentals of computer architecture, Processor design, Control unit design, Memory organization. I/O system Organisation. Microprocessors –microprocessor architecture, instruction set and simple assembly level programming. Microprocessors based system design, typical examples. Personal computers and their typical uses, data communication principles, types and working principles of modems, Network principles, OSI model, functions of data link layer and network layer, networking components, communication protocols-X.25, TCP/IP.

Database Management System- basic concepts, entity relationship model, relational model, DBMS based on relational model.

APPLICATION FOR RECRUITMENT TO THE CADRE OF TELECOM TECHNICAL ASSISTANT (TTA) IN CALCUTTA TELEPHONES.

Paste a self signed recent passport size photograph of the applicant duly attested by Gazetted Officer
--

1. Name of the Candidate :
(In Block Letters)
2. Fathers Name :
3. Postal Address in full with PIN Code :
 - a) Present Address :
 - b) Permanent Address :
4. Date of Birth (as in the Madhyamik or equivalent Certificate. Attested copy should be attached.) :
5. Actual age as on 31.08.2007 :
6. a) Community (in respect of SC/ST/OBC (attested copy of necessary certificate to be enclosed) :
 - b) Ex-Service man (attested copy of discharge certificate to be attached.) :
 - c) P.H. (attested copy of necessary certificate to be attached.) :
7. Educational Qualification (attested copy of Mark Sheet & certificates of all examinations from school leaving onwards should be enclosed.) :
8. If registered in Employment Exchange, give particulars (Registration is not mandatory) :
9. Whether in Central Govt./ State Govt./Public Sector. Undertaking (The application must be forwarded by the present employer). :

10.Details of Application fee particulars :-

- i) Demand Draft No. & Date :
- ii) Amount Rs. :
- iii) Issuing Bank :
- iv) Payable in favour of : **A.O./C.T.D./BSNL/Kolkata-1**

I, _____, certify that the above particulars are true to the best of my knowledge and belief.

Date and place :

Signature of the Applicant

List of Enclosures :-

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)