



**BHARAT SANCHAR NIGAM LIMITED**  
(A GOVT. OF INDIA ENTERPRISES)  
O/o CGMT, Jharkhand Telecom Circle, Ranchi

Advertisement No. JTC/ TTA/ Direct Recruitment/2008

Dated 11.11.2008.

Closing date of receipt of application **08.12.2008**.

Applications are invited for the post of **TELECOM TECHNICAL ASSISTANT (TTA)** in the IDA pay scale of BSNL of Rs. 7100-200-10100/- plus usual allowances as admissible from time to time as per rule.

Number of vacancies to be filled up-**42** (may vary depending upon the availability of vacancies) in Secondary Switching Area (SSA) of Jharkhand Telecom Circle are as follows;

Name of the Secondary Switching Area (SSA)	Category				Total
	OC	OBC	SC	ST	
<b>Ranchi</b>	3	1	1	1	6
<b>Dhanbad</b>	7	1	1	3	12
<b>Jamshedpur</b>	5	1	1	2	9
<b>Hazaribagh</b>	4	1	0	2	7
<b>Dumka</b>	1	1	1	1	4
<b>Daltenganj</b>	1	0	1	2	4
<b>Total</b>	<b>21</b>	<b>5</b>	<b>5</b>	<b>11</b>	<b>42</b>

The Telecom Technical Assistant (TTA) is a Secondary Switching Area (SSA) Cadre and unit of recruitment is the respective SSA. The competitive examination will be held on 11.01.2009. Select panel will be prepared SSA wise.

**1.Reservation for SC/ST/OBC/PH/Ex-Servicemen:**

- (a) Reservation as per Central Govt. guidelines will be applicable for SC/ST/OBC/ Physically Handicapped (PH)/Ex-serviceman.
  - (b) In respect of Physically Handicapped persons, candidates with following physical disability will be permitted.
    - (i.) Hearing Impairment - Partially Deaf
    - (ii) Locomotive Impairment- OL (one leg affected) or BL (both legs affected but not arms)
- (The minimum degree of disability is 40% in order for a person to be eligible for any concession/benefits)**
- (c) 3% vacancy will be reserved for PH quota.

## **2.Examination fee:**

- (a) Rs.500/-(Five Hundred) only is chargeable from the applicants, which may be acceptable in the form of Indian Postal Order / Bank Draft to be drawn in favour of **Accounts Officer (B &A) O/o CGMT, Jharkhand Telecom Circle, BSNL, payable at Ranchi.** The amount of fee shall not be accepted in any other form. Fees once paid shall not be refunded under any circumstances nor can it be held in reserve for any other examination or selection.
- (b) No fee for the applicants of SC/ST/PH categories.

## **3.Age Limit:**

- (a) The applicants must be between 18 to 27 years of age as on **08.12.2008** (the closing date for receipt of applications from candidates).
- (b) However, this age is relaxable for following categories of applications
- (i) For Scheduled Caste & Schedule Tribes up to 5 years
- (ii) For OBC Candidates up to 3 Years
- (iii) For PH candidates up to 10 years (15 years for SC/ST and 13 years for OBC)
- (iv) For departmental candidates-
- up to 40 years in respect of general candidates
  - up to 45 years in respect of SC/ST candidates in accordance with the instructions or orders issued by the Central Govt.
  - up to 43 years in respect of OBC candidates
- (v) For Residents of J&K-Relaxation shall be in accordance with DoP&T O.M. No.15012/7/1991-Estt.(D) dtd. 6.12.2005 pertaining to "Residents of State of Jammu and Kashmir (Relaxation of Upper Age Limit for Recruitment to Central Civil Services & Posts) Rule 1997".

## **4. Educational Qualification:**

The Applicants must possess as on the last date of receiving applications (i.e. **08.12.2008**), the educational qualifications in any of the following disciplines from a recognized Institute/University:

(a) Three years Engineering Diploma in

-Telecommunications Engineering

- Electronics Engineering
- Electrical Engineering
- Radio Engineering
- Computer Engineering
- Instruments Technology
- Information Technology

(b) M.Sc. (Electronics) from a recognized Institution/university.

- Note:** (a) Only such qualification and streams as mentioned above may be allowed. There is no equivalence provided.
- (b) Candidates possessing higher qualification in the eligible stream are allowed to appear in the examination.
- (c) Candidates possessing Three year Diploma certificates are eligible to appear in the Exam irrespective of percentage of marks obtained by them.

- (d) In case a candidate is possessing requisite educational qualification irrespective of having entered the course in the 2<sup>nd</sup> year through lateral entry after 10+2, he/she will be eligible to appear in the exam.

**5. Syllabus & Question Paper of Examination:**

- (a) The syllabus for the Examination is given in Appendix –I.  
 (b) There shall be only one Paper of multiple-choice type of three hours duration with following details:

Paper		Marks	Time Allowed
Part-I	General Ability Test	20	3 (Three) Hours
Part-II	Basic Engineering	90	
Part-III	Specialization	90	

- (c) The total number of question will be 200 and each question shall carry one mark.  
 (d) The standard of paper in General 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. In the Specialization Part-III, a candidate has to attempt a common set of question from the consolidated syllabus prescribed under Specialization Part-III.

**6. Mode of selection:** The candidate will be provisionally selected as Telecom Technical Assistant (TTA) on the basis of a Competitive Examination to be held on **11.01.2009**. An applicant is allowed to apply for one Secondary Switching Area (SSA) only. If the applicant applies for more than one SSA or does not mention the name of SSA applied for, his application will be summarily rejected. 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.

**7. Training and Bond:**

- (a) All candidates provisionally selected for appointment against the vacancies for direct recruitment shall execute a bond for a period of 5 years from the date of their appointment as TTAs in the proforma specified by BSNL.  
 (b) The selected candidates before their appointment as Telecom Technical Assistant have to undergo the prescribed course of training in any of the training centres of the BSNL.  
 (c) During the period of training the trainees will be entitled to stipend (training allowances) as directed by BSNL from time to time  
 (d) A TTA who has not completed the age of Forty years if required, will be liable to serve in the Territorial Army subject to the provisions of section 6A of territorial Army Act, 1948 (58 of 1948) and the rules made there under.

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

**9. For the Employed Candidates:** - Candidates working in Central /State Government Service /Public Sector undertaking should send their applications through the head of their office /department so as to reach this office within due date ie **08.12.2008**. Application received after the due date will be straight way rejected.

**10. 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 .

**11. Registration with Employment & Validity:** - There is no restriction of residence or essential condition of registration with the Employment Exchange in the particular SSA in which the applicant may apply. It would be preferable if the applicant has registration in the employment exchange of the SSA concerned in which the applicant applies. Registration is valid up to the last date of receipt of applications.

**12. How to apply:** - Application form as per format given duly filled in by the candidate enclosing 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 **AGM (Admn) O/o CGMT, Jharkhand Telecom Circle, BSNL, 3rd Floor, Telephone Bhawan, Ranchi-834001** through registered post/Speed post latest by **08.12.2008**. The envelope containing application form should be marked “Application for Direct Recruitment TTA Examination-2008” in bold letters on top of the envelope. The exact date of Examination will be intimated to the eligible candidates through Admit Cards. Application form can also be downloaded from the website **www. Jharkhand. bsnl .co.in** and may be used for the purpose.

**13 List of enclosures:**

- i) Three identical recent passport size photographs out of which one should be pasted on the application form, duly attested and the other two attached with the application.
- ii) Two self addressed unstamped envelopes 27 X 12 cms size.
- iii) IPO/Bank draft for Rs. 500/-. [Not required for SC / ST/PH candidates].
- iv) Caste certificates in respect of SC/ST/OBC candidates.
- v) Medical certificate in respect of PH candidates.
- vi) Three years engineering diploma/ M.Sc.Electronics certificate as specified.
- vii) Matriculation certificate (for age proof)

**Note:** - Application received after the closing date or not accompanied by the demand draft [wherever applicable] for the prescribed examination fee or incomplete in any respect shall be summarily rejected and no communication in respect of the rejected application forms shall be made. BSNL shall not be responsible for any postal delay. The applicants would be admitted to the examination on the basis of the information furnished by them in their application form. They are, therefore, advised to ensure that they fulfill all eligibility

conditions before applying. In case it is found at a later stage that the information furnished by an applicant is false or an applicant does not fulfill any of the eligibility conditions, the candidature of such applicants would be cancelled and no correspondence in this regard would be made. Issuance of an admit card for the examination will NOT confer any right for appointment. Appointment will be solely subject to fulfillment of all eligibility conditions (including PVR, Medical Test etc).

**14.** Any dispute in regard to the recruitment will be to the Courts/Tribunal of Ranchi jurisdiction only.

## Appendix-I

### SCHEME & SYLLABUS FOR TTA DIRECT RECRUITMENT EXAMINATION

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The standard of paper in General 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 a single multiple-choice objective type Paper of 3 hrs. duration as per details given below:

Paper	Marks	Time allowed
PART-I GENERAL ABILITY TEST	20	3 hrs.
PART-II BASIC ENGINEERING	90	
PART-III SPECIALIZATION	90	

Note: 1. The candidate is required to obtain minimum qualifying marks in each of these parts as may be prescribed by the BSNL.

#### **Detailed Syllabus**

#### **Paper-I: GENERAL ABILITY TEST-20 MARKS**

The candidate's 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 experiences as may be expected of Diploma holder.

#### **Paper-II: BASIC ENGINEERING-90 MARKS**

#### **Detailed 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; Laplace Transform; Complex Number; Partial Differentiation.
2. Applied Physics: Measurement-Units and Dimensions; Waves, Acoustics, Ultrasonic; Light; Laser and its Application ,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 into 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; Semi conductor Diode; Bipolar Transistor & their circuits; Transistor Biasing Stabilization of operating point; Single stage transistor amplifier; field effect transistor, Mosfet circuits applications.

Multistage Transistor Amplifier; Transistor Audio Power Amplifiers; Feedback in Amplifier; Sinusoidal Oscillators; Tuned Voltage Amplifiers; Opto Electronics Devices and their applications; Operational Amplifier; wave shaping and switching circuits.

Block diagram of I.C timer (such as 555) and its working, Motivation Circuits, Time base circuits, Thyristory and UJT, Regulated power supply.

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; Multiplexers and De-multiplexers; Latches and Flip Flops; Counters; Shift Registers; Memories; A/D and D/A converters.

**Paper-III: SPECIALIZATION-90 MARKS:**

Detailed Syllabus is as under:-

1. **Electrical:**

3 phases vs single phase supply, Star Delta connections ,relation between phase & line voltage, power factor and their measurement; construction and principles of working of various types of electrical measuring instruments. All types of motor and generator-AC & DC transformers, starters, rectifiers,, inverters, battery chargers, batteries, servo and stepper motors, contactor control circuits, switchgear, relays, protection devices & schemes, substation, protective relaying, , circuit breaker, generator protection ,transformer protections, feeder & lightning protection, feeder & bus bar protection, lightning arrester, earthing, voltage stabilizer & regulators, power control devices & circuits phase controlled rectifiers, inverters, choppers, dual converters, cycloconverters; power electronics application in control of drivers, refrigeration & air conditioning.

2. **Communication:**

Modulation and demodulation- principles and operation of various types of AM, FM and PM Modulators and 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, FSK, PSK; Characteristics/ working of data transmission circuits; UART, USART; Modems; Protocols and their functions, 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.

### **3. Network, Filters and Transmission Lines :**

Two point 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; Principal of impedance matching; Bandwidth consideration of a transmission line.

### **4. Instruments and Measurements:**

Specification of instruments - accuracy, precision, sensitivity , resolution range; Errors in measurement and loading effect; Principles of voltage, current and resistance measurements; Transducers, measurement of displacement & strain force & 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 analyses and logic analyzer, signal generator, distortion factor meter, spectrum analyzer.

### **5. Control Systems:**

Basic elements of control system, open and closed loop system, concepts of feedback. 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.

## 6. Microprocessors:

Typical organization of a microcomputer system & 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, interrupt driven data transfer, DMA, serial output data, serial input data.

## 7. 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 organization. Microprocessors-microprocessor architecture, instruction set simple assembly level programming. Microprocessor based system design: typical examples. Personal computers and their typical uses, data communication principles, types and working principles of modems, Network principles, OSI model, function of data link layer and network layer, networking components; communication protocols-x.25, TCP/IP.

Data base management system-basic concepts, entity relationship model, relational model, DBMS based on relational model.

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**APPLICATION FORM FOR TELECOM TECHNICAL ASSISTANT(DIRECT RECRUITMENT)EXAMINATION-2008 in Jharkhand Telecom Circle**

**1. Name of the SSA applied for (Mandatory).....**

Please write name of one SSA only out of six SSA as mentioned below:

[(i)Ranchi (ii).Dhanbad (iii). Jamshedpur (iv). Hazaribagh (v). Dumka (vi). Daltonganj]

2. Full name of the candidate:.....

[IN BLOCK LETTER]

3. Father/Husband's Name: .....

4. (a) Postal address with PIN CODE to which communication is to be sent:

[IN BLOCK LETTER] .....

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.....

(b)Permanent Home address with PIN CODE: [IN BLOCK LETTER]

.....

.....

(c) Contact number: Telephone No. .... Mobile No.....

5. (a) Date of Birth: ----- / ----- / 19-----.

[In the format *DD MM YYYY* e.g. *1<sup>st</sup> May 2008 will be 01-05-2008*]

[As mentioned in Matriculation or Equivalent Certificates]

[ Attested copy of relevant certificate to be enclosed]

(b) Age as on **08.12.2008**: .....

(c)Whether claiming age relaxation? Yes/No .....

If yes, under what category, [ Write the relevant category below]

i) BSNL employees

ii) SC/ST/OBC/PH

(Attested copies of certificate issued by Competent Authority to be enclosed)

iii) Others (Please specify)

6 Place of birth and state in which located:.....

7. State to which the applicant belongs: .....

8. (a) Whether belongs to SC/ST/OBC/General:.....

[Write the relevant category]

[A copy of OBC certificate in the prescribed format with creamy layer clause issued by the competent authority should be submitted.Candidates belonging to OBCs but coming in the "Creamy Layer" are not entitled to OBC reservation]

(b)Whether Physically handicapped: Yes/No.....% disability.....

[Medical certificate to be attached-Indicate the extent of disability]

(c) Whether Ex-service man? If yes, the total period of Military service.....

Paste a recent  
attested Photograph  
of the applicant  
[Passport Size]

Attested photo copy of Discharge Certificate to be attached)

9. Whether already employed in Central Government/State Government/Public Sector Undertaking(PSU).If yes, give details.
10. Whether registered in the Employment Exchange of the SSA for which application is made .If yes, give details.
11. Gender:[ Male/Female].....
12. ( a) Nationality :.....  
( b) Whether by birth/by domicile :.....
13. Marital status: [Married/Unmarried].....
- 14..Details of Education/Technical qualifications  
[ Give details of Engineering Diploma/Degree obtained .Attested copy to be enclosed] .
  - 14.1 Name of Engineering Diploma/Degree with discipline.....
  - 14.2 Name of University /Institute.....
  - 14.3 Month and year of obtaining Engineering Diploma/Degree.....
15. Medium opted for answering question paper: English/Hindi.....
16. Details of application fee particulars
  - 16.1 Indian Postal Order/Bank Draft No. and Date:.....
  - 16.2 Amount Rs : .....
  - 16.3 Issuing Bank/Post Office:.....
  - 16.4 Payable in favour of ..... at.....

I do hereby declare that all the statements made in the application are true, complete and correct to the best of my knowledge and belief. I Understand that in the event of any particular information given above being found false or incorrect, my candidature for the post of Telecom Technical Assistant Officer is liable to be rejected or cancelled and in the event of any mis-statement or discrepancy in the particulars being detected after my appointment, my services are liable to be terminated forthwith without any notice to me.

Date:  
Place:

Signature of the applicant  
{In Hindi}.....

Tel No:

{ In English}.....