



BHARAT SANCHAR NIGAM LIMITED

(A Government of India Enterprise)

Office of the Chief General Manager Telecom., Karnataka Circle,
No.1, Swamy Vivekananda Road, Halasuru, Bangalore – 560 008.

Recruitment of Telecom Technical Assistants (TTAs) - 2008 in BSNL, Karnataka Telecom Circle from OPEN MARKET.

Closing date for receipt of applications:- 10/11/2008

Examination date : 11th JANUARY 2009 (SUNDAY)

Bharat Sanchar Niagam Limited, Karnataka Telecom Circle will recruit about **233** (Subject to variation depending on the availability of the vacancies) **TELECOM TECHNICAL ASSISTANTS (TTAs)** from **OPEN MARKET** through a competitive examination to be held on 11/01/2009 at **19 Secondary Switching Areas (SSAs) in Karnataka Circle.** The candidate can apply only for one SSA of Karnataka Circle and his/her selection is restricted to that SSA only. SSA wise vacancy details will be published in the same website in due course.

Sd/-

ASST. GENERAL MANAGER (R & E)
O/o C.G.M.TELECOM, KTK. CIRCLE
BANGALORE – 560 008.

ANNEXURE – A**PARTICULARS OF EXAMINATION CENTERS IN VARIOUS SSAs FOR
DIRECT RECRUITMENT TTAs - 2008/**

SL.NO.	Name of the SSA	Exam Centre	Exam Centre Code
1	BANGALORE SSA	Bangalore	01
2	BELGAUM SSA	Belgaum	02
3	BELLARY SSA	Bellary	03
4	BIDAR SSA	Bidar	04
5	BIJAPUR SSA	Bijapur	05
6	CHICKMAGALUR SSA	Chickmagalur	06
7	DAVANGERE SSA	Davangere	07
8	GULBARGA SSA	Gulbarga	08
9	HASSAN SSA	Hassan	09
10	HUBLI SSA	Hubli	10
11	KARWAR SSA	Karwar	11
12	KOLAR SSA	Kolar	12
13	MADIKERI SSA	Madikere	13
14	MANDYA SSA	Mandya	14
15	MANGALORE SSA	Mangalore	15
16	MYSORE SSA	Mysore	16
17	RAICHUR SSA	Raichur	17
18	SHIMOGA SSA	Shimoga	18
19	TUMKUR SSA	Tumkur	19
	TOTAL		

RESERVATION FOR SC / ST / OBC / PH / EX-Servicemen:

- a) Reservation as per Central Government guidelines will be applicable for SC/ST / OBC / Physically Handicapped (PH).
- b) In respect of Physically Handicapped persons, candidates with following physical disability only will be permitted:
 - i. Locomotive Impairment : OL (one leg affected) or
BL (both legs affected but not arms)
 - ii. Hearing Impairment : Partially Deaf

(40% minimum disability for claiming under Physically Handicapped category).
- c) 3% reservation for PH person shall be as per provisions laid in DOT letter No. 1-8 / 2001 –AD (SNG) dated 18.10.2001 & 21.04.2003. Attested copy of medical certificate in support of his/her claim should be enclosed along with the application.

BSNL-KARNATAKA

BSNL, Karnataka Circle, is conducting the above examination at 19 Secondary Switching Areas (SSAs) as mentioned in **Annexure-A** from **open market**. The candidate can apply for one SSA only and he / she has to appear for the examination from the exam centre of that SSA only.

The vacancy particulars of each SSA for different categories will be published in <http://www.karnataka.bsnl.co.in> in due course . Names of all the 19 SSAs headquarters (Center Code 01 to 19) mentioned in **Annexure-A** will function as examination centers. The Candidates can write the examination in the SSA of his / her choice and send the application to the officers of the same SSA of his / her choice as mentioned in **Annexure-B** below. The candidates can take up the exam at the particular SSA only for which he / she has opted and will be considered for the vacancies of that particular SSA only.

ANNEXURE - B

Examination Centre Code	Place of Examination Centre	Filled application along with enclosures to be sent to	Demand Draft for Rs. 500/-to be drawn in favour of
01	BANGALORE	The D.G.M.(Staff), % Principal General Manager, Bangalore Telecom District, BSNL, Telephone House, Rajbhavan Road, Bangalore-560 001.	Sr. Accounts Officer (Cash), BGTD, BSNL, Bangalore
02	BELGAUM	The D.G.M.(Admn), % General Manager, Telecom District, BSNL, "Telecom Bhavan", Main Telephone Exchange Compound, CAMP, Belgaum-590 001.	Sr. Accounts Officer (Cash), Belgaum TD, BSNL, Belgaum.
03	BELLARY	The D.G.M.(A&P), % General Manager, Telecom District, BSNL, Telephone Exchange Compound, Station Road, Bellary-583 010.	Sr. Accounts Officer (Cash), Bellary TD, BSNL, Bellary.
04	BIDAR	The Telecom District Manager BSNL, Near Nehru Stadium, Rangamandir Road, Bidar-585401.	Accounts Officer (Cash), Bidar TD, BSNL, Bidar.
05	BIJAPUR	The D.G.M.(A&P), % General Manager, Telecom District, BSNL, Sanchara Surabhi, M.G.Road, Bijapur-586 101.	Sr. Accounts Officer (Cash), Bijapur TD, BSNL, Bijapur.
06	CHICKMAGALUR	The D.G.M.(A&P), % General Manager, Telecom District, BSNL, New Telephone Exchange Building, Belt Road, Chickmagalur-577 101.	Accounts Officer(Cash), Chickmagalur TD, BSNL, Chickmagalur.

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07	DAVANGERE	The D.G.M.(Admn), % General Manager, Telecom District, BSNL, Devaraj Urs Lay out, Pune-Bangalore Road,Davangere -577 006.	Accounts Officer (Cash), Davangere TD, BSNL, Davangere.
08	GULBARGA	The D.G.M.(Admn), % General Manager, Telecom District, BSNL, Near Head Post Office, Gulbarga- 585 101	Sr. Accounts Officer (Cash), Gulbarga TD, BSNL, Gulbarga.
09	HASSAN	The D.G.M.(A&P), % General Manager, Telecom District, BSNL Bhavan, B.M.Road, Hassan-573 201.	Accounts Officer (Cash), Hassan TD, BSNL, Hassan.
10	HUBLI	The D.G.M.(Admn), % General Manager, Telecom District, BSNL, Sanchar Sadan, Station Road, , Hubli-580 020	Sr. Accounts Officer (Cash), Hubli TD, BSNL, Hubli.
11	KARWAR	The D.G.M.(A&P), % General Manager, UK Telecom District, BSNL, G.K.Ram Building, Habbuwada, Karwar - 581 306.	Chief Accounts Officer (Cash), Karwar TD, BSNL, Karwar.
12	KOLAR	The D.G.M.(Admn), % General Manager, Telecom District, BSNL, Suguna Complex, Antharaganga Road, Near KSRTC Bus Stand, Kolar-563 101.	Accounts Officer (Cash), Kolar TD, BSNL, Kolar.
13	MADIKERI	The D.G.M., % General Manager, Telecom District, BSNL, Padmavathi Complex, Gowli Street, Madikeri- 571 201.	Accounts Officer (Cash), Madikeri TD, BSNL, Madikeri.
14	MANDYA	The D.G.M.(O), % General Manager, Telecom District, BSNL, " Telephone Exchange Building", Opp. Kalamandir, Stadium Road, Mandya-571 401.	Accounts Officer (Cash), Mandya TD, BSNL, Mandya.
15	MANGALORE	The D.G.M.(Admn), % Principal General Manager, Dakshina Kannada Telecom District, BSNL, Old Kent Road, Mangalore- 575 001.	Sr. Accounts Officer (Cash), Mangalore TD, BSNL, Mangalore.

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16	MYSORE	The D.G.M.(Admn), % Principal General Manager, Dakshina Kannada Telecom District, BSNL, no. 69, 1st Cross, Temple Road, IV Block, Jayalakshmipura, Mysore-570 012	Sr. Accounts Officer (Cash), Mysore TD, BSNL, Mysore.
17	RAICHUR	The Telecom District Manager(TDM), BSNL, Opp. OPEC Hospital, Hyderabad Road, Raichur-584 101.	Accounts Officer (Cash), Raichur TD, BSNL, Raichur.
18	SHIMOGA	The D.G.M.(O), % General Manager, Telecom District, BSNL, " BSNL Bhavan", Sagar Road, Shimoga-577 201.	Accounts Officer (Cash), Shimoga TD, BSNL, Shimoga.
19	TUMKUR	The D.G.M.(U&P), % General Manager, Telecom District, BSNL, " BSNL Bhavan", Ashoka Road, Tumkur-572 103.	Accounts Officer (Cash), Tumkur TD, BSNL, Tumkur.

1. **EXAMINATION FEES:**

- a) Rs.500/- only is chargeable from the applicants, which may be acceptable in the form of Indian Postal Order / Bank Draft along with application.
- b) The fee paid shall not be accepted in any other form. Fees once paid shall neither be refunded under any circumstances nor can it be held in reserve for any other examination or selection.
- c) No fee for the applicants of SC & ST categories. Attested copies of certificate issued by competent authority to be enclosed.
- d) Exemption from payment of examination fees is also available to the applicants of PH category. This exemption will, however be available only to those handicapped person who would otherwise be eligible for appointment to the post on the basis of the standards of medical fitness prescribed for that post and who enclosed with the application form, necessary certificate from a Government Hospital / Medical Board in support of his / her claim for being handicapped.

2. SCALE OF PAY

The post of Telecom Technical Assistant is in the IDA pay scale of Rs. 7100-200-10100.

3. SELECTION FOR A PARTICULAR SECONDARY SWITCHING AREA(SSA) AND SERVICE LIABILITY:-

- a) “ BSNL Karnataka Circle has 19 Secondary Switching Areas(SSAs) with non-recruiting units like Southern Telecom Region(STR), Southern Telecom Projects(STP), Quality Assurance(QA) and the candidate has to serve in any one of the SSA / non recruiting unit after selection.
- b) A list of existing Secondary Switching Areas (SSAs) inclusive of (attached) non-recruiting units such as STR, STP, & QA having jurisdiction within BSNL Karnataka Circle appears in **Annexure-A** above. The Telecom Technical Assistant is a Secondary Switching Area (SSA) cadre and the candidate would be selected against the vacancies in a particular SSA including that of non-recruiting (attached) units such as STR, STP and QA and required to serve a **minimum of 2 years** in that particular SSA / non-recruiting (attached) units such as STR, STP and QA only.
- c) Application will be considered for a particular SSA only (out of 19 - Secondary Switching Areas (SSAs) as mentioned in Annexure- A) of his/her choice given by him/her in the application for examination. Option once exercised shall be final. Change of SSA afterwards would not be allowed. The applicant should exercise his/her option very carefully and indicate his/her choice. A successful applicant will however get appointment in the Secondary Switching Area(SSA) of circle strictly depending upon his/her position in the merit list drawn on the basis of his/her performance in the Karnataka Circle competitive examination and the number of vacancies available in the SSA. In case an applicant does not indicate his/her preference of Secondary Switching Area(SSA) his/her application will be summarily rejected. The decision of BSNL Karnataka Circle in this regard shall be final and binding. The service condition, seniority etc., **of the selected candidates will be determined as per prevailing rules of the BSNL from time to time.**

4. ELIGIBILITY:

- a) **Nationality** : Only **Indian National would be eligible to apply.**
- b) **Education Qualification**: Applicant must possess as on **10 / 11 / 2008** Three Years Engineering Diploma in Telecommunications Engineering / Electronics Engineering / Electrical Engineering / Radio Engineering / Computer Engineering / Instruments Technology / Information Technology / M.Sc.(Electronics) or higher qualification in the above streams from a recognized institution/University irrespective of percentage of marks obtained by them. Candidates possessing qualification in above streams only will be allowed to appear for the examination. **There is no equivalence provided.**

c) Age: Applicant should be between 18 and 27 years of age as on the closing date for receipt of application from candidates .i.e.10/11/2008

- (i) However the upper age is relaxable,
by 5 years for SC/ST candidates,
by 3 years for OBC candidates.
- (ii) In case of departmental candidates in accordance with the instructions or orders issued by the Central Government,
Age is relaxed for OC candidates upto 40 years,
Age is relaxed for OBC candidates upto 43 years,
Age is relaxed for SC/ST candidates upto 45 years.
- (iii) For PH candidate age is relaxable,
(40% minimum disability for claiming PH category)
By 10 years for OC candidates,
By 13 years for OBC candidates,
By 15 years for SC/ST candidates.
- (iv) Ex-servicemen are eligible for relaxation in age as prescribed by the central government.

5. EMPLOYMENT EXCHANGE REGISTRATION:

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. However, in case two or more successful candidates show equal performance in the test and have same qualification, experience, date of birth, etc., preference will be given to those candidates who have registered their names in the Employment Exchange of the concerned SSA in which they have applied.

6. MODE OF SELECTION:

The mode of selection is through competitive examination conducted by BSNL, Karnataka Circle, followed by a medical test.

a) Schedule of examination:**TIME TABLE**

Part		Marks	DATE	TIMINGS
Part-I	General Ability Test	20	11.01.2009	10.00 to 13.00 hrs (IST)
Part-II	Basic Engineering	90		
Part-III	Specialization	90		

See Annexure 'C' for syllabus

b)- Minimum qualifying standards:

- (i) Qualifying marks in the paper will be 40% for the candidates of unreserved communities and 33% for the candidates of SC/ST/OBC/PH category.
- (ii) The minimum passing marks for each of the three parts of the paper will be as prescribed by the Pers.III branch, BSNL, Corporate Office, New Delhi, separately.
- (iii) Relaxation of 2% in marks will be given to the Physically Handicapped candidates in each category (OC-PH, OBC-PH, SC-PH & ST-PH)
- (iv) The appearance of their names 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. CHOICE OF EXAMINATION CENTRE:

The SSAs as indicated in Annexure-A will function as examination centre. Candidates are advised to send application to one SSA only of their choice and they will be considered for vacancy of that SSA only. Admit card will be issued to the eligible candidate by the office of the Principal General Manager /General Manager/Telecom District Manager of concerned SSA.

8. APPLICATION FORM:

The specimen of the application form is included in this advertisement. Neatly typed (only one side of the paper) copy in the A-4 size (30cmX20cms) may be used for making application. Completed application form should be sent by registered post to the Principal General Manager /General Manager/Telecom District Manager concerned as mentioned in the Annexure-A. The envelope containing the application form should be marked “ **APPLICATION FOR TELECOM TECHNICAL ASSISTANT EXAMINATION – 2008 KARNATAKA CIRCLE**” in bold letters on top of the envelope. Original advertisement or photo copy of the format in the advertisement must not be used for applying and in case the candidate submit such an application, the same will not be entertained. The given application format must be separately typed or Computer printed sheets duly signed by the applicant. (**See Sl.13 for enclosures**)

9. CLOSING DATE FOR RECEIPT OF APPLICATION FORM:

Application form complete in all respect must reach on or before 10/11/2008. Application received after the closing date or not accompanied by demand draft (where ever applicable for the prescribed examination fee) or incomplete in any respect shall be summarily rejected and no communication in respect of rejected application form shall be entertained. Fee paid also is not refundable. BSNL Karnataka Circle shall not be responsible for any postal delay. The applicant would be admitted to the examination on the basis of the information furnished by them in their application form. Therefore the applicants are advised to ensure that they fulfil 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 fulfil any of the eligibility condition, the candidature of such applicant would be cancelled and no correspondence in this regard would be entertained. 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.

10. TRAINING AND BOND:

All candidates provisionally recruited shall execute bonds in the format specified by BSNL Karnataka Circle, indicating their willingness to serve the Secondary Switching Areas (SSAs) allotted for a period of at least 2 years from the date of their appointment as TTAs. All candidates shall, before their appointment as TTAs have to successfully under go prescribed training as per the training plan laid down and amended by BSNL from time to time.

11. CONCESSION FOR SC/ST CANDIDATES:

a) **Travelling Allowance (TA) to SC/ST candidates:** The applicants belonging to SC/ST categories will be entitled to T.A. as per provisions of Ministry of Finance (Deptt. Of Expenditure) O.M. No.19014/3/77-E.IV (B) dtd. 17.02.1978.

b) SC/ST candidates are hereby instructed to produce the original tickets to claim the same on the day of the examination.

12. PRE-RECRUITMENT TRAINING for SC/ST CANDIDATES:

Pre-recruitment training will be arranged for SC/ST candidates appearing for the examination. SC/ST candidates may contact the following Telephone Numbers 080-25563852 / 25301742 on or after 20/11/2008 for further details of training.

13. LIST OF ENCLOSURES:

a	Three identical recent passport size photograph out of which one should be pasted (not stapled or pinned) on the application form duly attested by a Gazetted Officer and the other two to be attached to the application form (not to be pasted or attested).
b	2 self addressed unstamped envelop of 27X12 cms.
c	Bank demand draft / IPO for Rs. 500/- (payable at par at the station of submitting the application) – (not required for SC/ST/PH candidates).
d	Demand draft / IPO should be drawn in favour of the Senior Accounts Officer / Accounts Officer payable at the respective Secondary Switching Area (SSA) as given in Annexure-B .
e	In respect of PH candidate, attested copy of medical certificate in support of his/her claim. (40% minimum disability for claiming PH category)
F	Any dispute in regard to the recruitment will be subject to the courts /tribunals having jurisdiction over the place of concerned SSA/Karnataka circle office of BSNL where the candidate submits his/her application.
g	In respect of SC/ST/OBC attested copy of community certificate to be enclosed. For Ex-servicemen, attested copy of discharge certificate to be attached.

14. DISQUALIFICATIONS:

No person,

a	entered into or a contracted a marriage with a person having a spouse living, or
b	who having a spouse living, has entered into or contracted a marriage with any person, shall be eligible for the appointment for the said post.

15. **PROBATION :**

The candidate appointed shall remain for period of 2 years probation.

16. **JURISDICTION:**

All candidates shall if so required, be liable to serve in the territorial army subject to provisions of section 6A of the territorial army act 1948 (58 of 1948) and the rules made under.

17. **BSNL Reserves** the right to amend any clause in this notification in future according to the rules and regulations prevailing at that time. BSNL also reserves the right to reject any application or cancel the candidature without assigning any reason there of.

18. **SERVING EMPLOYEES:**

Candidates working in Government service / Public Sector Undertakings should send their duly filled in applications through the Head of their Office / Department, so as to reach the concerned BSNL office of choice on or before the due date. Applications received after the due date from such offices will summarily be rejected.



BHARAT SANCHAR NIGAM LIMITED
Karnataka Telecom Circle

APPLICATION FORM FOR
TELECOM TECHNICAL ASSISTANT (TTA)
(DIRECT RECRUITMENT) EXAMINATION - 2008

DATE OF EXAMINATION : 11 / JANUARY / 2009

Paste a recent
 attested
 Photograph of the
 applicant
 (Passport Size)

1		Name of the Recruitment Unit (Name of SSA)			
2		Full name of the Candidate [IN BLOCK LETTERS]			
3		Father / Husband's Name			
4	a	Postal Address with PIN CODE to which Communication is to be sent [IN BLOCK LETTERS]			
	b	Permanent Home Address with PIN CODE [IN BLOCK LETTERS]			
	c	Contact Number (with STD code)			
		Telephone No.	Mobile No.		
5	a	Date of Birth (dd mm yyyy) (In the format DD MM YYYY e.g. 1 st May 2008 will be 01.05.2008 (As mentioned in Matriculation or Equivalent Certificate) (Attested copy of relevant certificate to be enclosed)	DD	MM	YYYY
	b	Age as on 10./11/ 2008 (Closing date of application)			
	c	Whether claiming age relaxation. If yes, under what category, (write the relevant category below)	Yes / No. _____		
		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 the state in which located			

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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 "Creamy Layer" are not entitled to OBC reservation].					
	b	Whether Physically Handicapped : Yes / No Percentage of disability : () [Medical certificate to be attached-Indicate the extent of disability]					
	c	Whether Ex-Servicemen? If yes, the total period of Military service [Attested copy of discharge Certificate to be attached].					
9		Whether already employed in Central Government / State Government/ Public Sector Undertaking (PSU), If yes, give details.	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> <tr> <td></td> <td></td> </tr> </table>	YES	NO		
YES	NO						
10		Whether registered in the Employment Exchange of the SSA for which application is made. If yes, give details.	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> <tr> <td></td> <td></td> </tr> </table>	YES	NO		
YES	NO						
11		Gender : [Male / Female]					
12	a	Nationality :					
	b	Whether by birth / by domicile:					
13		Marital status: [Married/Unmarried]					
14		Details of Educational / Technical Qualification: [Give details of Engineering 3 years Diploma/ Degree obtained. Attested copy to be enclosed]					
	14.1	Name of the Engineering Diploma/Degree with discipline					
	14.2	Name of the University/Institute					
	14.3	Month & Year of obtaining Engineering Diploma/Degree					
15		Medium opted for answering question paper: English / Hindi (write the Medium)					
16		Details of application fees 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					

BSNL-KARNATAKA

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



BHART SANCHAR NIGAM LIMITED

ADMIT CARD

Identical
Passport
Photograph of
the applicant as
on the appln.
Form.

Roll.No..... (to be filled by the office)

Please allow Mr/Mrs/Ms**
Son/ Daughter of Mr/Mrs**....., whose
photograph is affixed on the admit card to appear in the examination for the post
of Recruitment of Telecom Technical Assistant (TTA) – 2008 of the Bharat
Sanchar Nigam Limited inSSA at
examination centre (to be given by the office).....on
date /time (to be given by the office).....

** to filled by the applicant.

Signature.....
Designation.....
(to be filled by the office)



BHART SANCHAR NIGAM LIMITED

ACKNOWLEDGEMNT SLIP

Received application for the Examination for recruitment of Telecom Technical Assistant (TTA) 2008 of Bhart Sanchar Nigam Ltd., Karnataka Telecom Circle, from Mr/Mrs/Ms** with demand draft / Indian Postal Order no** dated** of** Payable to Sr.Accounts/Accounts Officer(BSNL)

Date.....

Signature with date

O/o

** to filled by the applicant.

SCHEME & SYLLABUS

FOR
TELECOM TECHNICAL ASSISTANTS (TTA)
 (DIRECT RECRUITMENT EXAMINATIONS)

The standard 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 Hours duration as per details given below:

PAPER		MARKS	TIME ALLOWED
PART-I	GENERAL ABILITY TEST	20	3 Hours duration
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 :-

PART- 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 exercise, etc. This shall also include questions on current events, general knowledge and such matters of every day observation and experiences as may be expected of Diploma holder.

PART-II :- BASIC ENGINEERING : 90 MARKS

Detailed Syllabus is as under :

1	<u>APPLIED MATHEMATICS</u> :	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.
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2	<u>APPLIED PHYSICS :</u>	Measurement – Units and Dimension; Waves, Acoustics, Ultrasonic; Light; Laser and its Applications, Atomic Structure and Energy Levels.
3	<u>BASIC ELECTRICITY :</u>	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	<u>ELECTRONICS DEVICES & CIRCUITS :</u>	<p>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 circuits elements. Active and passive components; semi conductor Physics; Semiconductor diode; Bipolar transistor & their circuits; Transistor Biasing Stabilization of operating point; Single stage transistor amplifier; field effect transistor, Mosfet circuits applications</p> <p>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.</p> <p>Block diagram of I.C. Timer (such as 555) and its working; Motivation circuits; Time Base circuits, Thyristory and UJT; Regulated Power Supply.</p>
5	<u>DIGITAL TECHNIQUES :</u>	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.

Detailed Syllabus is as under :

1	<u>ELECTRICAL :</u>	<p>3 Phases 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 measuring instruments.</p> <p>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 and schemes, substation, protective relaying, circuits breaker, generator protection , transformer protection, feeder & lightning protection, feeder & bus bar protection, lightning arrestor, 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.</p>
2	<u>COMMUNICATION:</u>	<p>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.</p> <p>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 areas Network; Carrier Telephony – Features of carrier telephone system.</p> <p>Microwave Engineering; Microwave Devices; Wave-guides; Microwave Components; Microwave Antennas; Microwave Communication Systems – Block diagram & working principal's of Microwave communication link.</p>

3	<u>NETWORK, FILTERS & TRANSMISSION LINES:</u>	Two port network, Attenuators; Filters; Transmission Lines and their applications: Characteristic impedance of the line; concept of reflection and standing waves on a transmission line; Transmission line equation; Principles of impedance matching; Bandwidth consideration of a transmission line.
4	<u>INSTRUMENTS & MEASUREMENTS :</u>	<p>Specification of Instruments – accuracy, precision, sensitivity, resolution range, Errors in measurements and loading effect; principles of voltage, current and resistance measurements; Transducers, measurement of displacement & strain, forces & torque measuring devices, pressure measuring devices, flow measuring devices, power control devices & circuits. Types of AC millivoltmeters – 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.</p> <p>Principles of working and specifications of logic probes, signature analyzer and logic analyzer, signal generator, distortion factor meter, spectrum analyzer.</p>
5	<u>CONTROL SYSTEMS:</u>	<p>Basic elements of control system, open and closed loop system, concept 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.</p> <p>Time Response of systems.</p> <p>Stability Analysis Characteristics equation, Routh's table, Nyquist criterion, Relative stability, Phase margin and gain margin.</p> <p>Routh Hurwitz criterion, root locus techniques, Bode plot, Power plot, Gain margin and phase margin.</p>

6	<u>MICROPROCESSORS:</u>	<p>Typical organization of a microcomputer system & functions of its various blocks; Architecture of a Microprocessors; 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.</p>
7	<u>COMPUTER:</u>	<p>Computer and its working, types of computers, familiarization with DOS & 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 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; communications protocols-X.25, TCP/IP.</p> <p>Database Management System – Basic concepts, entity relationship model, relational model, DBMS based on relational model.</p>

Note: Revised Syllabus and Scheme of Examination for TTA Direct Recruitment Examination in BSNL vide BSNL Corporate Office, New Delhi instruction 250-18/2008-Pers-III (04089) dated 04.09.2008
