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BSNL भारत संचार निगम लिमिटेड
(भारत सरकार का उपक्रम)
BHARAT SANCHAR NIGAM LIMITED
(A Govt. of India Enterprise)

Advt. No. BSNLCO-11/12(11)/1/2026-RECTT-CO **Dated: - 26.05.2026**

DIRECT RECRUITMENT OF JUNIOR TELECOM OFFICER (TELECOM) IN BSNL FROM OPEN MARKET. (NOTIFICATION YEAR - 2026)

Bharat Sanchar Nigam Ltd. (BSNL), proposes to recruit JUNIOR TELECOM OFFICER (DIRECT RECRUITMENT) in TELECOM Stream from open market. All Candidates (Internal & external) fulfilling the prescribed eligibility conditions & possessing requisite qualification, as detailed in ANNEXURE-A, are eligible to apply for the above said post.

DATE & TIME OF START OF ON-LINE REGISTRATION	10.00 Hrs. of 04.06.2026
DATE & TIME OF END OF ON-LINE REGISTRATION	10.00 Hrs. of 03.07.2026
DATE & TIME OF START OF APPLICATION EDITING PERIOD	10.00 Hrs. of 04.07.2026
DATE & TIME OF END OF APPLICATION EDITING PERIOD	10.00 Hrs. of 11.07.2026
DATE & TIME OF EXAMINATION (CBT)	Month of August, 2026 (Tentative)

The details of posts are given below: -

This Direct Recruitment shall be done from the open market to fill up 100 posts of Direct Recruitment quota in the Junior Telecom Officer (Telecom) Cadre as mentioned below in TABLE-A.

TABLE-A

Sl. No	Name of Circle	Direct Recruitment JTO (T) - 2026 Circle wise Vacancies Breakup*							
		SC	ST	OBC (NCL)	EWS	UR /OBC (CL)	Total	Out of which PwBD** vacancies (HORIZONTAL)	
								Deaf or Hard of Hearing Impairment (b)	Locomotor disability including cerebral palsy, leprosy cured, dwarfism, acid attack victims and muscular dystrophy (c)
1	A&N	0	0	0	0	1	1	0	0
2	AP	0	0	0	0	1	1	1	0
3	Assam	1	0	0	0	1	2	0	0

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4	Kolkata TD	1	0	0	0	1	2	0	0
5	Chennai TD	1	0	1	0	3	5	0	0
6	Chhattisgarh	0	0	0	0	1	1	0	0
7	Gujarat	2	0	0	0	1	3	1	0
8	Haryana	0	0	1	0	0	1	0	0
9	J&K	0	0	0	0	1	1	0	0
10	Karnataka	0	1	0	2	23	26	0	0
11	Kerala	4	3	0	2	6	15	0	0
12	MP	1	0	2	1	6	10	0	1
13	MH	2	1	4	2	7	16	1	0
14	NE-II	0	0	1	0	2	3	0	0
15	Odisha	0	1	0	4	1	6	0	0
16	Rajasthan	0	0	0	0	1	1	0	0
17	Sikkim	0	0	0	0	1	1	0	0
18	Tamilnadu	0	0	0	0	1	1	0	0
19	Telangana	0	0	1	0	1	2	0	0
20	Uttarakhand	0	0	0	0	1	1	0	1
21	UPW	0	0	0	0	1	1	0	0
	Total	12	6	10	11	61	100	3	2

* Reservation as per Central Govt. guidelines will be applicable for SC/ST/OBC/PwBD/EWS/Ex-Serviceman candidates.

**Degree of Disability for PwBDs: Under the provisions of RPwD Act 2016 Persons with Benchmark Disability means a person with not less than 40% of specified disability, as certified by the certifying authority. Benefit of reservation may be given to PwBDs with Permanent Disability Certificates. Forms for Certificate of Disability may be same as prescribed under RPwD Act 2016/ RPwD Rules 2017 and amended from time to time.

1. **Scale of Pay:** The JUNIOR TELECOM OFFICER (TELECOM) [JTO(T)-DR] shall be recruited in the IDA pay scale [E-1] of ₹ 16400– ₹ 40500/- (2nd PRC pay scale w.e.f. 01.01.2007).
2. JTO is a Circle Cadre and the unit of recruitment will be the respective Recruiting Circle.
3. BSNL comprises a number of Circles. The recruitment will be made centrally and JTOs so recruited will be allotted a particular Circle depending on vacancies, their choice and merit. The Circles (21 Circles), where vacancies are available, are mentioned above in Table-A.
4. Selected candidates will be required to serve the allotted circle as per the BSNL Transfer Policy. However, the officers are liable to be transferred anywhere in India in the interest of service.
5. Candidates will be allowed to provide choices (in order of preference) among 21 Circles (as mentioned in Table-A above), so that result is declared as per their preference Vis-a-Vis their performance (marks secured) in the examination. Options once exercised shall be final. Change of Circle afterwards, would not be allowed.

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6. The Registration Portal will have drop down menus to capture the details of the preference of these 21 Circles where vacancies are available. All '21' Circles will be in the drop down menus. The applicants should exercise their option very carefully and indicate their choice of Circles in order of their preference one/two/..... maximum '21' preferences/choices, as below:

   Choice 1 Circle - Preference 1 _____

   Choice 2 Circle - Preference 2 _____

   .

   .

   .

   Up to choice 21 Circle - preference 21 _____

7. The willing candidates are suggested to select all 21 BSNL Circles from the drop-down menu provided in the Registration Portal, indicating their order of preference. Opting for a greater number of Circles may enhance the possibility of a candidate being selected based on the marks secured in the Examination.
8. If a candidate selects a limited number of Circles (less than 21 circles, say 5 or 6 Circles) from the drop-down menu at the time of registration, his/her candidature shall be considered only for the Circles so opted. Such candidates shall not have any claim for consideration against vacancies in other Circles that were available but not opted for by them.
9. A successful applicant will, however, get appointment in the Circle of choice strictly depending upon his/her position in the merit-list drawn on the basis of his/her performance in the All India competitive examination and the number of vacancies available in the Circles.
10. **Liability to serve anywhere in India**: In case of emergencies /exigencies etc., the persons appointed to the JTO (DR) post shall be liable for transfer anywhere in India/at any place falling in the operational area of BSNL in the interest of service.
11. **Eligibility:**
    a. **Nationality**: - Only Indian Nationals would be eligible to apply.
    b. **Educational Qualifications**: - Applicant must possess the educational qualifications as given in **ANNEXURE - A** on the closing date of receipt of application.
    c. **The applicant must be capable of distinguishing principal colours and should have binocular vision.**

12. **Age:** Candidate should be minimum 20 years and not exceed 30 years as on closing date of receipt of application. However, the upper age limit is relaxable as per the standing instructions of Government of India for the following categories: -

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Category		Max. Age Junior Telecom Officer –Direct Recruitment (Telecom)
Unreserved / EWS/ OBC (CL)		30 Years
OBC (NCL)		33 Years (30+3)
SC / ST		35 Years (30+5)
Ex-Serviceman will get the age relaxation as per Central Govt. Rules.		
PwBD	Unreserved/EWS/OBC (CL)	40 Years (30+10)
	OBC (NCL)	43 Years (30+13)
	SC/ST	45 Years (30+15)
BSNL Employees	Unreserved/EWS/OBC (CL)	35 Years (30+5)
	OBC (NCL)	38 Years (30+8)
	SC/ST	40 Years (30+10)
BSNL Employees (PwBD)	OBC (NCL)	48 Years (30+18)
	SC/ST	50 Years (30+20)

Note: -

a. The date of birth entered in matriculation or Secondary School Leaving Certificate or in a Certificate recognised by an Indian University as equivalent to Matriculation or in an extract from a Register of Matriculates maintained by a University, which must be certified by the proper authority of the University or in the Higher Secondary or an equivalent examination certificate. The certificates as proof of date of birth are required to be uploaded at the time of registration and also to be submitted at the time of document verification in original. No other document relating to age like horoscopes, affidavit, birth extracts from Municipal Corporation, Service records and alike will be accepted.

b. Candidates seeking reservation as SC/ST/OBC (NCL), will have to upload the applicable-valid Caste Certificate at the time of registration and also to be submitted at the time of document verification in original, in the prescribed proforma meant for appointment to posts under the Government of India from the designated authority indicating clearly the candidate's caste (same as mentioned in the list of Central Government only), the Act/Order under which the caste is recognized as SC/ST/OBC (NCL) and the Village/Town the candidates is ordinarily resident of.

c. Candidates seeking reservation as PwBD will have to upload the relevant Disability Certificate issued by a Govt. Medical Board in the

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format prescribed by the Govt. of India, at the time of registration and submit at the time of document verification.

d. Vacancies reserved for OBC category are available to only those OBC candidates belonging to the 'non creamy layer' OBC candidates.

e. Creamy layer OBC candidates should indicate their category as UR.

f. OBC (NCL) certificate should have been issued on or after 01.04.2026 by the competent authority. The certificate must contain the date of issue along with name of caste, spelled exactly in the same manner as appearing in the list of the Central Government.

g. Candidates seeking reservation under EWS will have to upload the relevant certificate (Income and Asset Certificate issued by a competent authority) at the time of registration & submit at the time of document verification. The prescribed format and the competent authority have been given in Department of Personnel & Training of Govt. of India Office Memorandum No. 36039/1/2019 – Estt (Res) dated 31/01/2019. Further, certificate should have been issued on or after 01.04.2026 by the competent authority.

h. No change in the category, already indicated by a candidate in his/her online application form for this exercise, will ordinarily be allowed.

13. **Selection process: -**

a. The candidates shall have to undergo "Computer based-Multiple Choice-Objective Type Test" comprising following three sectional papers, Engineering Stream Section – I, Engineering Stream Section – II and General Ability Test Section - III. All candidates appearing in the "Computer based-Multiple Choice-Objective Type Test" shall be given a score based on their performance in the "Computer based-Multiple Choice-Objective Type Test".
b. The standard of paper in engineering subjects will be that of Engineering Degree Examination of an Indian University.
c. In the general ability test, special attention will be paid to assess the candidate's capacity for general awareness. The standard of the paper in general ability test will be as expected from an Engineering Graduate.
d. On the basis of number of sessions of examinations, arises if any, normalization of marks would be adopted.
e. All willing candidates are advised to ensure to fulfil all eligibility conditions before applying. In case during pre-appointment formalities or at a later stage or otherwise at any extent of time, it is found that the information furnished by an applicant is false/misleading or an applicant does not fulfil any of the eligibility conditions, etc. or otherwise, then candidature of such applicants would be summarily cancelled and no correspondence in this regard would be entertained.
f. Selected candidates in the declared merit list shall have to go for document verification. The date and venue of document verification will be intimated in due course. However, BSNL reserves the right to change the number of posts.
g. Appointment of selected candidates will be subject to their passing the company's Medical Examination as per standards laid down by BSNL.

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h. Those selected candidates who are already employed elsewhere will be required to resign from their respective organization only after being declared medically fit as per extant Medical rules. If any candidate resigns from his/her present employment before being declared medically fit for joining in BSNL, then BSNL shall bear no responsibility, whatsoever, on this account.

i. BSNL reserves the right to cancel/ restrict/ enlarge/ modify/ alter the recruitment/ selection process, if the need so arises, without issuing any further notice or assigning any reason whatsoever. No communication in this regard shall be entertained in any manner.

14. **Scheme of examination & Syllabus: -**

a. The pattern of the questions will be multiple choice objective type questions (MCQ) with negative marking. All candidates will undergo a "Computer based-Multiple Choice-Objective Type Test" of 3 hours duration.

b. The examination (Computer based-Multiple choice-Objective type test) will consist of one paper as given below:

JTO (DR) - Telecom:

Section	Particulars	Number of Questions and Maximum Marks	Duration
I	Engineering Stream Section – I	200 Marks (50 Questions)	3 hours
II	Engineering Stream Section – II	200 Marks (50 Questions)	
III	General Ability Test Section - III	80 Marks (20 Questions)	
Total		480 Marks (120 Questions)	

Note: -

i. The examination will be conducted in ONE shift comprising of three sectional papers Engineering Stream Section – I, Engineering Stream Section – II and General Ability Test Section – III for 3 hours duration.

ii. Syllabus for Engineering Stream Section – I, Engineering Stream Section – II, General Ability Test Section – III has been detailed in ANNEXURE-B.

iii. **Minimum qualifying Marks and Final Merit List:**

a. The examination will be Objective type with negative marking. For each correct answer 04 (Four) Marks will be awarded and for each wrong answer (-) 1 (One) Mark will be awarded.

b. Minimum Qualifying Marks in each Section shall be 40% in each Section and overall minimum Qualifying Marks in all three sections combined shall be 50 % for Unreserved Candidates and OBC (CL) Candidates. For SC/ST, OBC (NCL), PwBD and EWS Candidates, there shall be relaxation in Qualifying Marks and the Minimum Qualifying Marks in each Section shall be 35% and overall minimum Qualifying Marks in all three section combined shall be 45%.

c. Candidates, obtaining less marks than the minimum qualifying marks in any of the Sections and three sections combined shall not be considered for including in the merit list.

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d. Final Merit List will be prepared based on Total Marks obtained in Section-I (Engineering Stream Section - I), Section-II (Engineering Stream Section - II) & Section-III (General Ability Test Section - III) provided the candidate has secured minimum Qualifying Marks as prescribed above.

e. The appearance of the name in the final merit-list of the selection process does not confer any right on the candidate for the post. A final offer letter will be issued to the candidate after successful completion of all formalities relating to eligibility conditions.

15. **Bond, Training and Probation: -**

a. All candidates recruited for the post of Junior Telecom Officer Telecom (JTO (T)-DR) will execute a Bond of Rupees 06 (Six) Lakhs in the format as specified by BSNL to serve BSNL for a period of at least FIVE YEARS from the date of their appointment as Junior Telecom Officer.

b. Period of probation: Two Years.

c. All Junior Telecom Officer Telecom (JTO (T)-DR) shall have to successfully undergo training for such period as may be specified from time to time by BSNL. If a selected candidate does not qualify the pre-appointment training in 1st attempt, he/she will be given one more chance to qualify the pre-appointment training examination without fresh training, failing which he/she will not be appointed as JTO and he/she has to appear afresh in the subsequent Direct Recruitment Examination. During the period of training, the Direct Recruit JTO will be entitled to stipend (training allowance) as decided by BSNL from time to time.

The Details of training are as follows:

i. JTO Phase-I training: 10 weeks.
ii.. Field Training: 4 weeks.
iii: JTO Phase-II training: 6 weeks (Specialisation course).

16. **Seniority**: -

The seniority on appointment of candidates in the cadre of JTO (T) shall be determined on the basis of 60% weightage of marks obtained in the examination, i.e., Direct Recruitment Examination and 40% weightage of marks obtained in pre-appointment Phase-I training. Further, in case of equal marks obtained by two or more candidates in Direct Recruitment, the seniority among them shall be determined on the basis of date of birth, i.e., the older one will be senior to the younger one.

17. **Registration and Examination fee**:

a. Candidates applying for JTO (DR) – Telecom posts are required to apply online on the link provided on BSNL web site (www.externalexam.bsnl.co.in) only through the online registration process which is scheduled as given above. Candidates are required to take print-out of the computer generated registration form for their record and future purposes.

b. The prescribed examination fee Rs. 2000/- (Rupees Two Thousand only) for UR/OBC/EWS candidates & Rs. 1000/- (Rupees One Thousand only) for SC/ST/PwBD candidates shall be paid through online mode only (i.e. Internet Banking, Credit Card, Debit Card only) on BSNL web site (www.externalexam.bsnl.co.in).

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c. The amount of the fee shall not be accepted in any other form. Fee, once paid shall NOT be refunded under any circumstances nor can be held in reserve for any other examination or selection.

d. The applicants would be admitted to the examination on the basis of the information furnished by them in their online application form. The candidates are, therefore, advised to fulfill all eligibility conditions before applying. In case any information is found false/misleading at a later stage or otherwise, the candidature of such applicants would be cancelled and no correspondence in this regard would be entertained.

e. Before registering/submitting their online applications on the website the candidates should keep the following ready:

i. Mobile number & E-mail ID in which the OTP will be sent for completing the registration process.

ii. Scanned copy of recent passport size colour photograph of the candidate with white background in jpg / jpeg format. (20kb–50 kb only).

iii. Scanned copy of the signature of the candidate in jpg / jpeg format (10kb – 20kb only).

iv. Class 10th Certificate (For verification of Date of Birth).

v. Degree Certificate of Essential Qualification.

vi. Consolidated Mark sheet/ transcript of essential qualification for all semesters or years.

vii. Photo identity proof (like Aadhaar card, Passport, Driving License, Voter Id Card).

viii. Valid proof of reservation in category as applicable (SC/ST/OBC(NCL)/EWS/PwBD, etc.)

ix. Medical Certificate for PwBD.

f. After closing of registration period, EDITING WINDOW shall be opened for Seven (07) Days. Candidates can edit selective fields only in their application. Upon completion of registration in all respects, the required admit card will be made available on same registration link.

g. In case of multiple applications/registration from the candidate, the latest application/registration number shall be considered as final and older applications shall be rejected.

h. Candidates employed with Government Departments/Public Sector Undertakings/Autonomous Bodies are required to produce a "No Objection Certificate" from their present employer at the time of Documents verification positively.

i. For the Unreserved (UR) vacancy, SC/ ST/ EWS/ OBC/ Ex-Serviceman/ BSNL candidates can apply subject to meeting with all general standards of eligibility. In such case, the category relaxation then may not be availed.

18. **Choice of Examination Center**: The Exam will be held in 27 Cities / Centers. The details of the Examination Cities /Centres are given in ANNEXURE-C. The candidate will have to choose only one Examination City / Center.

19. **Admit card** for appearing in the Junior Telecom Officer "Computer based-Multiple Choice-Objective Type Test" can be downloaded from the link provided through BSNL websites (www.externalexam.bsnl.co.in) by the candidates well ahead of time before the date of examination by using their

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user name & password. It will not be sent either by post or by e-mail. Issuance of an admit card for the examination will NOT confer any right for appointment, etc. Appointment will be solely provisional, subject to fulfillment of all the prescribed eligibility conditions.

20. **CHALLENGING/CONTEST WINDOW AFTER THE ONLINE EXAM ("Computer based Multiple Choice-Objective Type Test"):**

a. BSNL shall display/provide the provisional question/answer key in the same portal within 05 (Five) working days of conducting online Exam.
b. The challenge/grievance window shall be opened for Seven (07) days with a suitable format to submit their online grievances/queries on question/answer options only. BSNL shall charge Rs. 400/- (Rupees Four hundred only) per question or per answer key and shall be payable through online mode i.e. Internet Banking, Credit Card, Debit Card only. These charges are non-refundable.

21. **Withdrawal of candidature**: No request for withdrawal of candidature received from a candidate will be entertained under any circumstances. Any dispute in regard to the recruitment will be subject to the Courts/Tribunals having jurisdiction at New Delhi.

22. **BSNL reserves the right:** BSNL reserves the right to modify/amend any of the terms & conditions etc. of this recruitment at any point of time. Dispute arises, if any, in a valid domain, shall be within the jurisdiction of Delhi only.

23. **Disqualification:** Violation of any of the instructions issued along with the admission certificate or at any other stage will make the candidate liable to be disqualified in the examination. Further, 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, has entered into or contracted marriage with any person, shall be eligible for appointment to the said post.

24. **Interpretation:** Where any doubt arises as to the interpretation of any of the provisions of any of these rules or the regulations made there under, the matter shall be referred to BSNL whose decision shall be final.

25. **General Instructions:**

a. All applicants must fulfill the essential requirements of the post and other conditions stipulated in the advertisement. They are advised to satisfy themselves before applying. No enquiry asking for advice as to eligibility will be entertained.
b. Applicants are required to apply online only. No manual/ paper application will be entertained.
c. Screening and selection will be based on the details provided by the candidate; hence it is necessary that applicants should furnish only accurate, full and correct information. Furnishing of wrong / false information will be a disqualification and BSNL will **NOT** be responsible for any consequence of furnishing of such wrong/false information.

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d. Candidature of the registered candidate is liable to be rejected at any stage of recruitment process or after recruitment or joining if any information provided by the candidate is found false or is not found in conformity with eligibility criteria mentioned in the advertisement.
e. Requests for change of mailing address / discipline / Test Centre as declared in the online application, will not be entertained.
f. Candidates should retain the copy of their BSNL Registration Slip and Admit Card for future reference. Print out of the same should not be tampered with. No documents including copy of Registration slip etc. are to be sent to BSNL unless specifically asked for.
g. The candidates applying for the recruitment should ensure that they fulfill all eligibility conditions for the post against which they apply. Their admission at all the stages of the selection process will be purely provisional subject to satisfying the prescribed eligibility conditions. Mere issue of online application ID/Admit card to the candidate will not imply that his/her candidature has been finally cleared by BSNL. BSNL takes up verification of eligibility conditions with reference to original documents only after the candidate has been shortlisted for document verification.
h. Appointment of selected candidates will be subject to their passing the Company's Medical Examination as per standards laid down under BSNL's Medical Examination Rules. Details shall be provided on BSNL website www.bsnl.co.in.
i. Canvassing in any form or influencing the officials related to the selection / recruitment process would result in immediate disqualification of the candidate. In case of any dispute, the decision of the management of BSNL will be final and binding on all candidates.
j. Candidates are also advised not to respond to unscrupulous advertisements appearing in any newspaper. For authenticity of any communication/advertisement in this regard, the candidate must check on BSNL's website www.bsnl.co.in
k. BSNL Management reserves the right to cancel the recruitment exercise fully/ partially at any stage at its discretion.
l. It may be noted that BSNL does not seek payments of any kind other than the registration fee and post exam grievance fee.

NOTE: Candidates in their interest are advised to refer to the BSNL websites (www.bsnl.co.in/www.externalexam.bsnl.co.in) from time to time for any further instruction/information. For any query, the applicants may contact BSNL Corporate Office, New Delhi at bsnlrectt@bsnl.co.in.

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ANNEXURE-A

EDUCATIONAL QUALIFICATION FOR JUNIOR TELECOM OFFICER - DIRECT RECRUITMENT (TELECOM) IN BSNL FROM OPEN MARKET

Functional Streams	Educational Qualification
Telecom	Bachelor of Engineering Degree or equivalent from a Central Govt./State Govt. recognized Institution/University in any of the following disciplines: 1. Telecommunications 2. Electronics 3. Radio 4. Computer 5. Electrical 6. Information Technology (IT) 7. Instrumentation OR M.Sc. (Electronics) / M.Sc. (Computer Science)
Note 1:-The candidates possessing higher qualifications viz. M.Tech in the prescribed disciplines as mentioned above shall also be eligible to appear in the Direct Recruitment (DR) examination. Note 2:-The candidates applying for JTO(T) (DR) should be Indian National and should possess the requisite educational qualification from recognized University incorporated by an Act of parliament or declared to be deemed University under Section 3 of UGC Act, 1956 and should have completed the course as on the closing date of receipt of application	

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ANNEXURE-B

SCHEME & SYLLABUS FOR JUNIOR TELECOM OFFICER - DIRECT RECRUITMENT (TELECOM) IN BSNL FROM OPEN MARKET

For Direct Recruitment of Junior Telecom Officers, an objective type Examination of 3 hours duration consisting of following sectional papers will be conducted:

Scheme

A. Engineering Stream Section - I
B. Engineering Stream Section - II
C. General Ability Test Section - III.

1. The standard of paper in Engineering Subjects will be that of Engineering Degree Examination of an Indian University.
2. In the General Ability test, special attention will be paid to assess the candidate's capacity for general awareness. The standard of paper in general ability test will be such as may be expected of an Engineering Graduate.
3. The syllabus for engineering stream papers will be as given below.

SYLLABUS

SECTION - I

1. Materials and components

Structure and properties of Electronic Engineering materials, Conductors, Semiconductors and Insulators, Magnetic, Ferroelectric, Piezoelectric, Ceramic, Optical and Superconducting materials. Passive components and characteristics, Resistors, Capacitors and Inductors; Ferrites, Quartz crystal, Ceramic resonators, Electromagnetic and Electromechanical components.

2. Physical Electronics, Electron Devices and ICs

Electrons and holes in semiconductors, Carrier Statistics, Mechanics of current flow in a semi-conductor, Hall effect; Junction theory; Different types of diodes and their characteristics; Bipolar Junction transistor; Field effect transistors; Power switching devices like SCRs, CTOs, power MOSFETs; Basics of ICs-bipolar, MOS and CMOS types; Basics of Opto Electronics.

3. Network theory

Network analysis techniques: Network theorem, transcient and steady state sinusoidal response, Transmission criteria: delay and rise time Elmore's and other definition, effect of cascading. Elements of network synthesis.

4. Electromagnetic Theory

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Transmission lines: basic theory, standing waves, matching applications, microstrip lines; Basics of waveguides and resonators; Elements of antenna theory.

5. Electronic Measurements and instrumentation

Basic concepts, standards and error analysis; Measurements of basic electrical quantities and parameters; Electronic measuring instruments and their principles of working: analog and digital, comparison, characteristics, applications. Transducers; Electronic measurements of non-electrical quantities like temperature, pressure, humidity etc. Basics of telemetry for industrial use.

6. Power Electronics

Power Semiconductor devices, Thyristor, Power transistor, MOSFETs, Characteristics and operation. AC to DC convertors; 1-Phase and 3-phase DC to DC Convertors. AC regulators. Thyristor controlled reactors, switched capacitor networks. Inverters: Single-phase and 3-phase. Pulse width modulation. Sinusoidal modulation with uniform sampling. Switched mode power supplies.

SECTION-II

1. Analog Electronic Circuits

Transistor biasing and stabilization, Small Signal analysis. Power amplifiers. Frequency response, Wide band techniques, Feedback amplifiers. Tuned amplifiers. Oscillators. Rectifiers and power supplies. Operational Amplifier, other linear integrated circuits and applications. Pulse shaping circuits and waveform generators.

2. Digital Electronic Circuits

Transistor as a switching element; Boolean algebra, simplification of Boolean functions, Karnaugh Map and applications; IC Logic gates and their characteristics; IC logic families: DTL, TTL, ECL, NMOS, PMOS and CMOS gates and their comparison; Combinational logic circuits; Half adder, full adder; Digital Compartor; Multiplexer Demultiplexer; ROM and their applications. Flip-flops, R-S, J-K, D and T flip-flops; Different types of counters and registers; waveform generators. A/D and D/A convertors. Semiconductor memories.

3. Control Systems

Transient and steady state response of control systems; Effect of feedback on stability and sensitivity, Root locus techniques; Frequency response analysis. Concepts of gain and phase margins; Constant-M and Constant-N Nichol's Chart; Approximation of transient response from Constant-N Nichol's Chart; Approximation of transient response from closed loop frequency response; Design of Control Systems, Compensators; Industrial controllers.

4. Communication systems

Basic information theory: Modulation and detection in analogue and digital systems; Sampling and data reconstruction. Quantization & Coding; Time division and frequency division multiplexing; Equalisation; Optical Communication: in free space & fibre optic; Propagation of signals at HF, VHF, UHF and microwave frequency; Satellite communication.

5. Microwave Engineering

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Microwave Tubes and solid state devices, Microwave generation and amplifiers, Waveguides and other Microwave Components and Circuits, Microstrip circuits, Microwave antennas, Microwave Measurements, MASERS LASERS; Microwave Propogation. Microwave Communication Systems-terrestrial and satellite based.

6. Computer Engineering

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. Personal computers and their typical uses.

7. Microprocessors

Microprocessor architecture - Instruction set and simple assembly language programming. Interfacing for memory and I/O. Applications of Microprocessors in Telecommunications and power system.

SECTION-III

General ability test

The candidate's comprehension and understanding of General English shall be tested through simple exercises. Questions on knowledge of current events and of such matter of everyday observation and experience in their scientific aspects as may be expected of an educated person. Questions will also be included on events and developments in Telecommunications, History of India and Geography. These will be of a nature, which can be answered without special study by an educated person.

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ANNEXURE-C

List of Examination Centre Cities

Sr. No.	Name of the Examination Cities / Centres
1	Port Blair
2	Vijayawada
3	Guwahati
4	Patna
5	Chennai
6	Raipur
7	Ahmedabad
8	Ambala
9	Shimla
10	Jammu
11	Ranchi
12	Bangalore
13	Thiruvananthapuram
14	Kolkata
15	Bhopal
16	Mumbai
17	Shillong
18	Dimapur
19	New Delhi
20	Bhubaneshwar
21	Chandigarh
22	Jaipur
23	Gangtok
24	Hyderabad
25	Lucknow
26	Meerut
27	Dehradun

Note: - Depending upon the number of the candidates, exam center may be any of the above mentioned cities or any nearby city (not mentioned above).

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